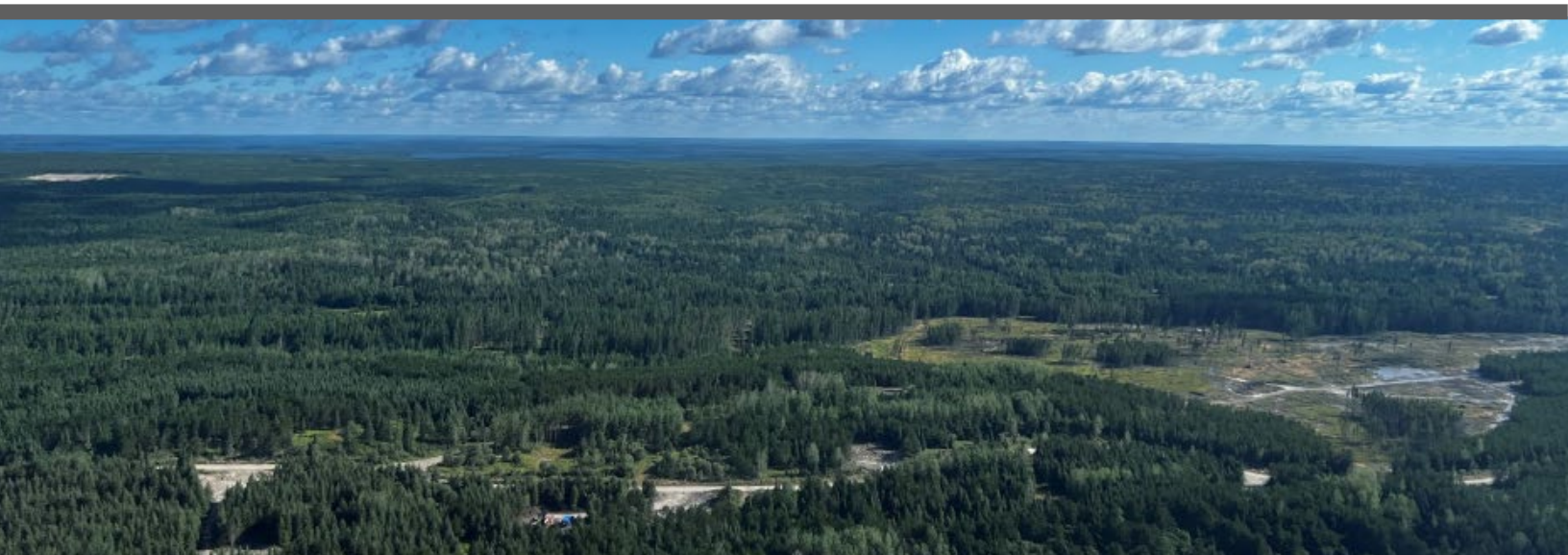
KINROSS Great Bear

Great Bear Gold Project
Impact Statement

Appendix R:

Assessment of Alternatives for Storage of Mine Waste



GREAT BEAR RESOURCES

GREAT BEAR PROJECT

ASSESSMENT FOR ALTERNATIVES FOR STORAGE OF MINE WASTE

DECEMBER 2025

GREAT BEAR PROJECT

ASSESSMENT OF ALTERNATIVES FOR MINE WASTE STORAGE

GREAT BEAR RESOURCES

PROJECT NO.: OMEMA2303
DECEMBER 2025

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ABBREVIATIONS

AEX Program	Advanced exploration program
ATD	Alternative tailings disposal
CCME	Canadian Council of Ministers of the Environment
dBA	A-weighted decibels
DO	Dissolved oxygen
ECCC	Environment and Climate Change Canada
EMS	Environmental Management System
GHG	Greenhouse Gas
NAPS	National Air Pollutant Surveillance
LSFN	Lac Seul First Nation
LGO	Low grade ore stockpile
LIA	Local Investigation Area
MAA	Multiple accounts analysis
MECP	Ministry of Environment, Conservation and Parks
ML / ARD	Metal leaching / acid rock drainage
MNR	Ministry of Natural Resources
MRS	Mine rock stockpile
MWP	Mine water pond
NPAG	Non-potentially acid generating
OVB	Overburden stockpile
PAG	Potentially acid generating
PSQG LEL	Provincial Sediment Quality Guideline Lowest Effect Level
SAR	Species at Risk
TMF	Tailings management facility
TOC	Total organic carbon
VMF	Viggo management facility
WFN	Wabauskang First Nation

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APPENDICES

1 INTRODUCTION

1.1 PROPONENT NAME AND ADDRESS

Proponent:	Great Bear Resources Ltd. is a wholly (100%) owned subsidiary of Kinross Gold Corp. (Great Bear Resources), a Canadian-based gold and silver mining company founded in 1993 and headquartered in Toronto, Ontario, Canada.
Corporate Address:	Great Bear Resources / Kinross Gold Corporation 25 York Street, Suite 15th Floor, Toronto Ontario M5J 2V5
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Proponent Contact:	Aaron MacDonell, Director, Environmental Services Great Bear Resources / Kinross Gold Corporation 25 York Street, Suite 15th Floor, Toronto Ontario M5J 2V5 M: 807-620-8573 Email: aaron.macdonell@kinross.com

1.2 PROJECT BACKGROUND

Great Bear Resources Ltd. (Great Bear Resources), a wholly owned subsidiary of Kinross Gold Corporation, is planning to develop, operate, and reclaim a gold mine, the Great Bear Project (Project) on the Great Bear Property (Property). The Project is located in the Red Lake mining district of northwestern Ontario, approximately 25 kilometres (km) southeast of the Municipality of Red Lake (Figure 1-1).

The Project will consist of two open pits (LP Central pit and Viggo pit), underground mining activities, onsite ore processing facility, and associated operations and administrative activities. The Viggo pit will be fully developed during construction to provide rock for construction and reduce the requirement for dedicated aggregate sources and additional environmental disturbance, provide early ore access, and allow the depleted Viggo pit to be re-used for the storage of membrane filtration reject solution and concentrate tailings, and for contact water management from the start of operations. The LP Central pit will start to be developed at the end of construction and will continue for up to about nine years. The open pits are anticipated to be of approximately the following scale, subject to ongoing exploration and technical work:

- LP Central pit: 255 metre (m) depth, 87 hectares (ha)
- Viggo pit: 120 m depth, 22.8 ha.

The underground mine will extend the AEX Program ramps and underground workings to an anticipated depth of about 1,500 m below ground surface. Underground mining will continue after the LP Central pit is depleted. The Project will produce tailings, mine rock, low grade ore, mine water and overburden that will require storage and management during construction, operations and closure.

1.3 ASSESSMENT OF ALTERNATIVES OVERVIEW

As per Environment and Climate Change Canada (ECCC; 2016):

> *The MDMER stipulates that for mine waste to be deposited in a natural, fish-bearing water body, the water body must be listed in Schedule 2 of the Regulations, designating it as a tailings impoundment area. In the context of these guidelines, a tailings impoundment area is a natural*

water body frequented by fish into which tailings, waste rock, low grade ore, overburden and any effluent that contains any concentration of the deleterious substances specified in the MDMER, and of any pH, are disposed.

The development of storage facilities for the mine waste for the Project are likely to result in the permanent loss of waterbodies frequented by fish, including the loss of habitat. For the purposes of the mine waste alternatives assessment and in accordance with the above statement, ECCC defines mine waste to include the following types of materials associated with the Project (WSP 2024a):

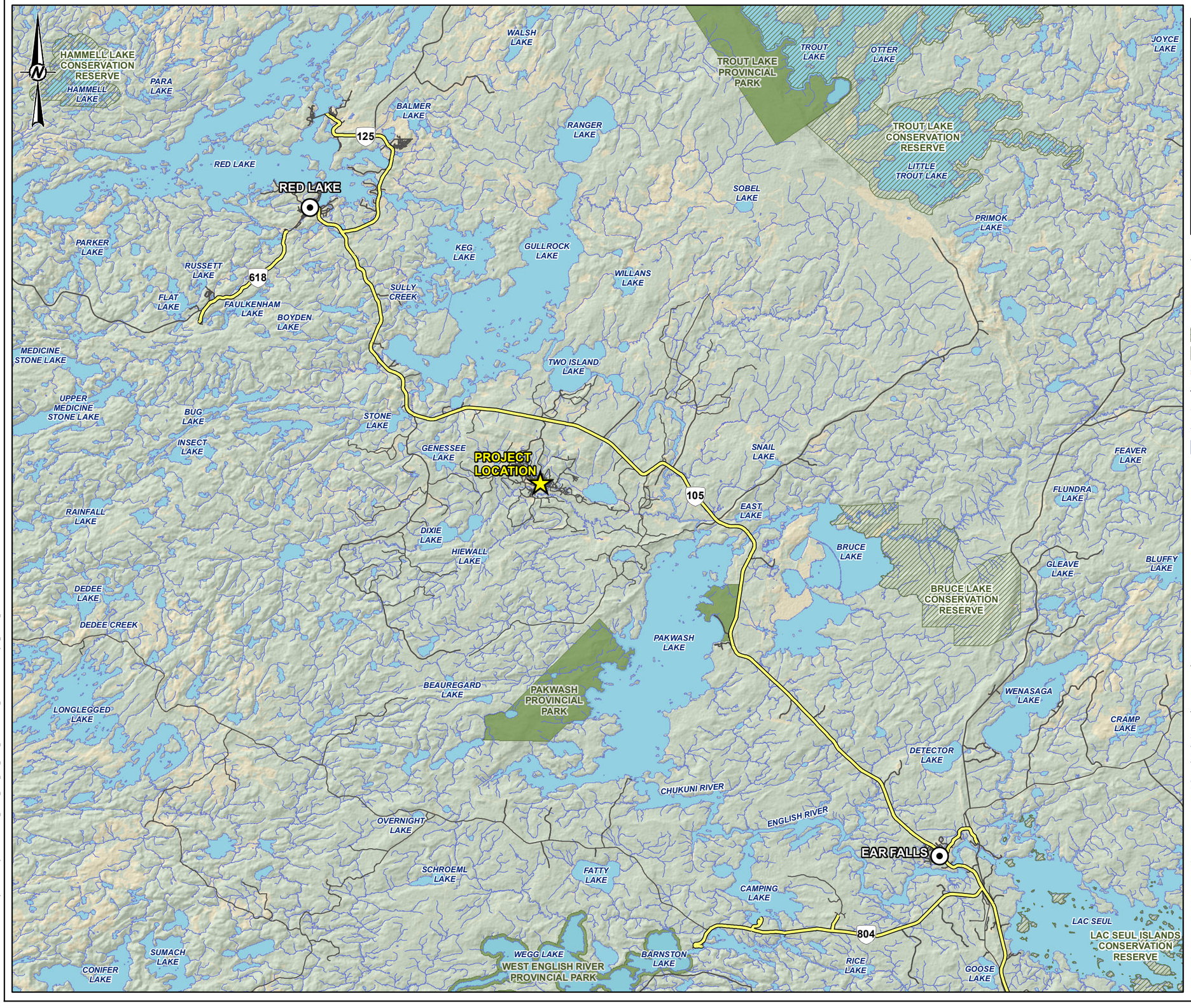
- Tailings: 80.5 million metric tonnes (Mt)
- Mine rock (mine rock and low grade ore stored on surface): 157.7 Mt
- Mine water (i.e., contact water and effluent): minimum 2.0 million cubic metres (Mm^3)
- Overburden: 17 Mm^3.

WSP Canada Inc. (WSP) has prepared this document on behalf of Great Bear Resources to satisfy the ECCC requirement for an assessment of alternatives for mine waste disposal. The document is intended to support in seeking regulatory amendment to Schedule 2 of the Metal and Diamond Mining Effluent Regulations (MDMER) in support of the proposed mine waste storage facilities for the Project.

The selection criteria and methodology used to identify the preferred alternatives for the mine waste storage for the Project was completed separately for each type of mine waste (tailings, mine rock, low grade ore, mine water and overburden). A multiple accounts analysis (MAA) was used to evaluate the alternative candidate storage locations using the methodology outlined in the *Guidelines for the Assessment of Alternatives for Mine Waste Disposal* (ECCC 2016). The methodology is used to examine and compare different mine alternatives and effects from the mine waste storage. The proposed methodology provides a decision-making tool which is transparent and defensible. A sensitivity analysis was developed to test the robustness of the MAA. The sensitivity analysis allows for different weightings of key MAA components and to evaluate differing values on the potential environmental, technical, project economic and socio-economic impacts.

The purpose of this assessment of alternatives is to objectively and rigorously assess feasible options for mine waste disposal for the Project. The assessment of alternatives is completed in seven steps:

- Step 1 Identify Candidate Alternatives: Involves determining which locations could be used for the storage of mine wastes (tailings, mine water, mine rock storage and overburden locations).
- Step 2 Pre-screening: Assessment to screen out any alternatives which have a fatal flaw.
- Step 3 Alternative Characterization: Characterize the alternatives from environmental, technical, project economic and socio-economic perspectives.
- Step 4 Multiple-accounts Ledger: The beginning of the MAA, which includes setting up a ledger of evaluation criteria and measurement criteria (sub-accounts and indicators respectively).
- Step 5 Value-based decision process: Each sub-account and indicator is assigned a value and weighted in importance (valuating, weighting and quantitative analysis).
- Step 6 Sensitivity Analysis: An analysis that recognizes that all stakeholders will not place the same importance on each effect, and to test the robustness of the MAA.
- Step 7 Document Results: To improve readability of this document, the assessment of alternatives for the identified mine waste materials has been structured into five sections, one each mine material, with subsections in each section that reflect the above steps. Results for each step are documented in the corresponding section.



KEY MAP

SCALE 1:30,000,000

LEGEND

- PROJECT LOCATION
- TOWN
- CONSERVATION RESERVE
- PROVINCIAL PARK
- HIGHWAY
- LOCAL ROAD
- RESOURCE/ RECREATION ROAD
- WATERCOURSE
- WATERBODY

0 2.5 5 10

1:250,000 KILOMETRES

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)

1. CONTAINS INFORMATION LICENSED UNDER THE OPEN GOVERNMENT LICENCE - ONTARIO
2. WATERCOURSES AND WATERBODY ACQUIRED FROM LAND INFORMATION ONTARIO (MNRF) AND MODIFIED TO MATCH AERIAL IMAGERY AND LIDAR.
3. ROADS INFORMATION PROVIDED BY GREAT BEAR RESOURCES, AUGUST 2022.
4. COORDINATE SYSTEM: NAD 1983 UTM ZONE 15N

CLIENT
GREAT BEAR RESOURCES

PROJECT
GREAT BEAR PROJECT

TITLE
PROJECT LOCATION

CONSULTANT
wsp

YYYY-MM-DD	2025-02-24
DESIGNED	----
PREPARED	MD
REVIEWED	HL
APPROVED	DR

PROJECT NO.	CONTROL	REV.	FIGURE
CA0031271	0001	A	1-1

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

0 25mm

PATH: X:\CA\CAOAK30\i-OAKMIS-FS1-Project\P-2023\Projects\GME\MA23\03_Kinross_Great_Bear_Env\7_GIS\Alternatives_Assessment\MXD\Project_Location_3.mxd PRINTED ON: 2025-02-24 AT 10:45:43 AM

2 ENVIRONMENTAL CONDITIONS

2.1 REGIONAL AND LOCAL SETTING

The Property is located in the Red Lake mining district in northwestern Ontario, approximately 25 km southeast of the Municipality of Red Lake (Figure 1-1). The Property experiences a typical northwestern Ontario climate, with cold winters and cool summers. The environmental setting of the Property is described below.

2.2 CLIMATE

Meteorological data were collected at two locations on the Property from summer 2022 to through summer 2024. The data from each location are summarized in Table 2-1.

A review of longer-term, regional records was also undertaken to develop climate data for the Property. There are five ECCC climate stations located in near proximity to the Property, with the Red Lake A station being located closest to the Property. There were no precipitation data from Red Lake A station from 2014 to 2022, however, review of the historical data from Red Lake A and Ear Falls station concluded that the climate data from Red Lake A and Ear Falls stations share similar trends and patterns in temperature and precipitation. Therefore, historical climate data from Red Lake A and Ear Falls stations were combined to characterize the climate conditions for the Property.

According to onsite data, the coldest months of the year at the Property based on mean temperature measurements were January and February, and the warmest month of the year was July. The daily average temperature typically drops below zero in November and remains below zero until end of March (WSP 2025a).

2.3 AIR QUALITY

Baseline ambient air quality at the Project is influenced by natural sources, such as pollen from vegetation and wildfire-related air pollutants, as well as anthropogenic sources, such as traffic, construction, heating of buildings, wind-blown particulate from exposed areas, mining, and power generation in the local area. Air quality is also influenced by transboundary transport of air contaminants from outside the local area. During construction and operations of the Project, the main sources of air emissions are expected to include fugitive dusts and criteria air contaminants from fuel combustion.

Collection of baseline air quality data began in July 2022 and was completed in January 2025 (WSP 2025a). Key findings include:

- Suspended Particulate Matter: Measured a 90th percentile concentration of 21.4 micrograms per cubic metre (µg/m^3), a geometric mean of 4.5 µg/m^3, and an arithmetic mean of 8.0 µg/m^3. Suspended particulate water concentrations were generally higher in the summer than in winter. There were no measurements above the 24-hour Ministry of Environment, Conservation and Parks (MECP) Ambient Air Quality Criteria of 120 µg/m^3 were measured.
- Metals: The majority of metals (including arsenic, cadmium, cobalt, nickel, or mercury) were present in concentrations below the laboratory detection limit
- Fine Particulate Matter <10 Micrometres (PM_{10}): The discrete PM_{10} sampler measured a 90th percentile concentration of 18.3 µg/m^3 and an arithmetic mean of 9.6 µg/m^3. The continuous PM_{10} samplers at the two stations measured a 90th percentile PM_{10} concentration of 16.2 µg/m^3 and 28.2 µg/m^3, the arithmetic means for the total sampling period were 7.2 µg/m^3 and 10.6 µg/m^3, respectively. Concentrations were generally higher in the summer than in winter

- Fine Particulate Matter <2.5 Micrometres ($PM_{2.5}$): The discrete $PM_{2.5}$ sampler measured a 90th percentile concentration of 10.0 µg/m^3 and an arithmetic mean of 5.48 µg/m^3. The continuous $PM_{2.5}$ samplers measured a 90th percentile $PM_{2.5}$ concentrations of 14.7 µg/m^3 and 21.7 µg/m^3 with arithmetic means of 6.4 µg/m^3 and 8.7 µg/m^3, respectively.
- Total Dustfall: The arithmetic mean was 0.98 grams per square metre per 30-day period (g/m^2/30-day), while the corresponding 90th percentile value was 2.4 g/m^2/30-day. All monthly dust fall values were below the Ambient Air Quality Criteria of 7 (g/m^2/30-days).

Regional air quality was also reviewed from the ECCC National Air Pollutant Surveillance stations in Thunder Bay and Pickle Lake, Ontario, and Winnipeg, Manitoba in order to compare conditions on the Project to regional conditions. Discrete concentrations of $PM_{2.5}$ on the Project were reasonably consistent with the regional NAPS stations, while continuous concentrations on the Project were higher that regional NAPS stations. Passive and continuous NO_2 levels at the Project were much lower than regional stations. Passive SO_2 levels at the Project were similar to the Winnipeg station, while continuous levels were slightly higher than the Winnipeg station.

2.4 SOUND AND VIBRATION

There are no existing permanent industries or developments in the immediate area of the Project, although there will be periodic noise nearby from traffic on Highway 105, the existing aggregate operations on Tuzyk's Road, as well site exploration activities. The other areas surrounding the Project may be considered as Class 3, rural area with an acoustical environment that is dominated by natural sounds having little or no road traffic (Wood 2023).

Ambient noise and vibrational data were collected at four monitoring locations, during two seasons to reflect presence and absence of leaves on the trees. The monitoring results showed an average of the hourly equivalent continuous A-weighted noise level ranging between 23 to 36 decibels A, with lower levels generally recorded at night. The baseline sound levels were characterized using the hourly A-weighted equivalent sound levels, with average levels ranging from 23 A-weighted decibels (dBA) to 36 dBA for the leaves-on program and 25 dBA to 33 dBA for the leaves-off program. Measurements across the monitoring stations for both programs generally showed lower sound levels at night. Vibration levels for both programs showed 95% of measured values were below 0.005 millimetres per second (mm/s) with average levels measuring approximately 0.001 mm/s, which is considered to be notably low. Both programs measured no significance difference between vibrations levels during daytime and nighttime (Wood 2023).

2.5 TOPOGRAPHY, PHYSIOGRAPHY AND GEOLOGY

2.5.1 TOPOGRAPHY

The local topography of the Property is shown in Figure 2-1. Topography across the Property can be categorized as rolling terrain as is typical of much of northern Ontario. The topography is dominated by a local high ridge which runs northwest to southeast approximately parallel to Highway 105. The elevation range on the Property is roughly 455 to 350 metres above sea level (masl) where the highs typically correspond to exposed bedrock hills / knolls and the lows to watercourse and waterbody locations.

Dixie Creek is situated in a low lying area, meandering through a flat swampy area towards its confluence with the Chukuni River downstream of the proposed development area.

2.5.2 OVERBURDEN GEOLOGY

Overburden deposits at the Property are reflective of the glaciated history of the area where inferred ice flow direction was generally from the northeast to the southwest, based on glacial striations present on

exposed bedrock outcropping (Sharpe and Russell 1996). The glaciofluvial and glaciolacustrine deposits are associated with the glacial Lake Agassiz, which is reported to have flooded the local area. The level of glacial Lake Agassiz dropped in stages creating a series of shoreline features, some of which are mapped in the northwest portion of the Property (Prest 1982).

Quaternary (overburden) geology at the Property is composed primarily of the following four units (WSP 2024c):

- Organic deposits (peat and muck; 1 to 4 m thick), thicker in low lying areas
- Glaciolacustrine deposits:
  - Shallow water and shoreline deposits (sand, gravel, silt; 1 to 3 m thick)
  - Deep water deposits (clay, silt, and fine sand; varved clay below 380 masl elevation, 1 to 50 m thick).
- Glaciofluvial outwash deposits (esker sands with minor gravel; 1 m to greater than 40 m thick)
- Glacial till deposits (gravelly to bouldery, sand to sandy silt till; 1 to 6 m thick).

Overburden thickness across the Property ranges from absent to greater than 50 m. Overburden material at higher elevations on the Property is commonly sand, underlain by glacial till overlying the bedrock. At lower elevations on the Property often displays a sequence of glaciolacustrine deepwater deposits (clays) underlain by glacial till overlying bedrock.

2.5.3 BEDROCK GEOLOGY

The Property is located within the Red Lake greenstone belt of the Uchi Subprovince of the Archean Superior Province of the Canadian Shield. The rocks in this belt are interpreted to have evolved by eruption and deposition of volcanic sedimentary sequences. Continental collision led to subsequent crust thickening and metamorphism. Both greenstone belts in the Red Lake District are dominated by the Balmer and Confederation Lake assemblages:

- Balmer assemblage (2,989 to 2,964 million years): tholeiitic and komatiitic basalt, with minor felsic volcanic rocks, iron formation and fine-grained clastic meta-sediments, which hosts the majority of the known Red Lake lode gold deposits
- Confederation assemblage (2,750 to 2,735 million years): represented with three sequences, McNeely calc-alkaline sequence (central Red Lake) consisting of intermediate to mafic volcanic rocks, Heyson tholeiitic sequence (southeastern Red Lake) composed of felsic volcanics and interlayered with mafic flows, dacitic tuff and plagioclase-phyric basaltic andesites, and Graves sequence (northern Red Lake) consisting of basal polymictic conglomerate, intermediate pyroclastic rocks, syn-volcanic diorite and tonalite.

Three main fault and shear zones have been interpreted on the Property: the LP shear, the Auro Fault and the Yauro Fault.

2.6 GEOCHEMISTRY

Comprehensive metal leaching and acid rock drainage assessments are ongoing for Project geologic materials including mine rock, tailings, and overburden as described in WSP (2025). The sampling approach and testing methods for the geochemical assessment were based on the requirements described under the *Mining Act*, namely guidance found within the document *Prediction Manual for Drainage Chemistry from Sulphidic Geologic Materials* (MEND 2009), which represents best practice and industry standard approaches and methodologies for metal leaching / acid rock drainage (ML / ARD) sampling and characterization in Canada. Samples were analyzed at accredited Canadian laboratories. A summary of geochemical testing relevant to this document is provided in Sections 2.6.1 through 2.6.3.

2.6.1 MINE ROCK CHARACTERIZATION

Comprehensive geochemical characterization programs were undertaken for representative rock samples from the Project to characterize its ML / ARD potential of mine rock and ore-grade rock. This included a static testing program with 3,885 drill core samples and a kinetic testing program with 84 kinetic tests with dozens of weeks to several years of data. The kinetic testing program includes 35 humidity cell tests and 34 column tests operated in the laboratory, and 15 field leach barrel tests operated at the Great Bear Property.

Baseline geochemistry programs for Project rock have been underway for several years. The sampling approach and testing methods utilized are based on the requirements described under the Ontario *Mining Act*, namely guidance found within the reference document *Prediction for Drainage Chemistry for Sulphidic Geologic Materials* (MEND 2009), which represents best practice and industry-standard approaches and methodologies for ML / ARD sampling and characterization in Canada.

Static testing results for 3,885 samples indicated that sulphur contents of drill core samples were variable, ranging from below the analytical detection limit (0.01%) up to 10%. Samples of the most abundant rock types (Felsic Volcanic 1 and Felsic Volcanic 2) generally had sulphur contents on the order of 0.5% to 0.7%. Samples of ore-grade materials generally had higher sulphur contents (1.3%) compared to mine rock samples (0.39%). Sulphur was primarily present as the acid-generating sulphide minerals pyrite and pyrrhotite, although low levels of sphalerite and galena were also identified to co-occur with acid generating sulphide minerals in some samples. Sulphate was present in low abundance (median 0.06%) in most samples tested by acid base accounting; this result was confirmed by mineralogical testing. Total sulphur was found to be strongly correlated with sulphide content and an accurate measure of the acid generation capacity of the rock.

Most samples had a low neutralization capacity with a median carbon neutralization potential of 11 kg $CaCO_3$/t, although values ranged from 1 to 200 kg $CaCO_3$/t, and the higher carbon neutralization potential contents were observed for some specific rock types (e.g., Basalt had a carbon neutralization potential on the order of 50 kg $CaCO_3$/t). Carbon neutralization potential was typically similar to or lower than modified neutralization potential, suggesting most neutralization capacity in the samples was present as carbonate minerals, with calcite as the primary carbonate mineral as identified by mineralogical testing. Some subsets of major rock types including Felsic Volcanic 1, Felsic Volcanic 2, Fragmental 1, Fragmental 2, Metasediment 2 or Metasediment 3, had samples that contained no detectable carbon neutralization potential and low levels of modified neutralization potential.

A carbon neutralization potential ratio threshold of 2 was used to classify samples as potentially acid generating (PAG) or non-potentially acid generating (NPAG). Approximately 80% of tested drill core samples were classified as PAG using this threshold value, including 78% of mine rock samples. Most samples from the LP Central pit (85%) and Viggo pit (67%) were classified as PAG, along with approximately half of the samples (50%) from the underground mine. A majority of mine rock samples of Felsic Volcanic 1 (78%), Felsic Volcanic 2 (90%), Fragmental 1 (75%), Metasediment 2 (98%) and Metasediment 3 (77%) were classified as PAG; most mine rock samples of Fragmental 2 (73%) and Basalt (79%) were NPAG.

Results for the 35 humidity cell tests (19 to 66 weeks of data) supported the classification of samples as PAG or NPAG as determined by acid base accounting testing. Overall, sulphide oxidation rates in the humidity cell tests were low. The data suggest that Project rock may have a range of lag times, including: low sulphide oxidation rates in typical pyrite and pyrrhotite bearing materials leading to long lag times (10 years or longer), low sulphide oxidation rates in high sulphide, low neutralization capacity materials with accessory sulphides (e.g., sphalerite and galena), and acidification within a limited timeframe in high sulphide, low neutralization capacity samples. Material with a low neutralization capacity and high sulphide content is currently understood to represent a minor component of the overall Project rock.

The observed low sulphide oxidation rates in the samples may be due to trace metal substitution and continues to be evaluated. Galvanic interactions may also be influencing sulphide oxidation rates, but

given the current mineralogical dataset, the prevalence of non-acid generating sulphides is thought to be limited and therefore not notably affecting the observed low sulphide oxidation rates.

Comparison of humidity cell release rates to release rates obtained from 15 field kinetic tests suggests that sulphide oxidation rates under field conditions may be up to 10 times slower than those observed in the laboratory. This is attributed to differences from the laboratory setting in water movement through (flushing), temperature and sample grain size, and indicates that practical lag times in the field could be longer than those currently estimated from humidity cell testing in the laboratory. Net acid generating conditions may, however, still occur within a limited timeframe for samples with very low neutralization capacity and higher sulphide content, as progression toward acidic conditions was observed for two field tests after one year of monitoring.

Initial static testing of drill core including elemental content analysis and short-term leaching tests (shake flask extraction tests) identified several parameters of potential interest for neutral metal leaching. Primarily this included arsenic, as solid phase contents were above screening values in 48% of the drill core samples and leachate concentrations were above screening values in 65% of the shake flask extraction tests.

The results of kinetic testing demonstrated that arsenic release rates varied distinctly based on the arsenic content of the sample and arsenic sulphide mineralogy present. Different arsenic sulphide associations are also observed among the different Project rock types, indicating that different arsenic leaching behaviours are present amongst the various rock types. Comparisons of laboratory and field kinetic test data generally showed alignment; samples with a higher solid phase arsenic content generally had higher arsenic release rates than samples with a lower solid phase arsenic content. Arsenic release rates were lower for some materials with a lower arsenic solid phase content in field kinetic tests relative to laboratory tests, possibly due to reduced reactivity under field conditions.

For major Project rock types, including Felsic Volcanic 1 and Felsic Volcanic 2, if arsenic was present in the samples, it typically occurred in pyrite (arsenic-bearing pyrite) or as arsenopyrite (which was typically present with pyrite and pyrrhotite). These samples were observed to leach arsenic at relatively low rates, and below the interim Provincial Water Quality Objectives for protection of aquatic life, used as a screening value (with no direct regulatory application), except where solid phase arsenic concentrations were elevated (greater than 100 mg/kg). These elevated arsenic content samples represent a small fraction of the dataset overall and much of the Felsic Volcanic 1 and Felsic Volcanic 2 rock was determined to be non-arsenic leaching.

Other rock types including Metasediment 2, Metasediment 3, Fragmental 1, Fragmental 2, and Basalt hosted arsenic in arsenic-bearing pyrite, arsenopyrite, and the arsenic sulphide mineral gersdorffite-cobaltite. This mineral is understood to occur in isolated samples and not be present in the bulk of the Project rock. Testing of samples of these rock types that contained a high proportion of gersdorffite-cobaltite and little Fe-sulphide (pyrite / pyrrhotite) however, indicated a higher potential for arsenic leaching. This is because any oxidation of gersdorffite-cobaltite that leaches arsenic without concurrently oxidizing pyrite or pyrrhotite will contain insufficient secondary iron-oxyhydroxide surfaces to adsorb arsenic. This behaviour was observed for samples of Metasediment 2, Metasediment 3, Fragmental 1, Fragmental 2 where arsenic was greater than 12 mg/kg, and for some Basalt samples where arsenic was greater than 46 mg/kg. Arsenic leaching rates from these rock types are expected to be low below these solid phase content thresholds based on the kinetic testing data.

Other elements that had solid phase content or leachate concentrations in short term leaching tests above screening values, did not appear to be of interest for metal leaching under neutral pH conditions for the bulk of the Project rock based on low release rates in the extensive laboratory and field kinetic testing programs undertaken.

Project rock generally contained low levels of mercury with no potential for mercury leaching observed in kinetic tests. Greater than 99% of the samples had solid phase mercury concentrations that were below screening values and 90% of the overall dataset had mercury concentrations that were at or below the analytical detection limit (0.005 to 0.05 mg/kg). Mercury release rates in all kinetic tests were based on concentrations at or near the analytical detection limit (0.000005 to 0.00001 mg/L) for all tests for the duration of testing.

Net acid generation leachate analyses indicated that some metals (aluminum, arsenic, boron, cadmium, cobalt, chromium, copper, iron, lead, molybdenum, nickel, phosphorus, selenium, silver, thallium, tungsten, uranium, vanadium and zinc) may be of potential interest under acidic leaching conditions. Humidity cell tests are generally showing longer lag times to net acidic conditions and stable acidic leaching conditions have not yet developed for many PAG samples undergoing kinetic testing.

2.6.2 TAILINGS CHARACTERIZATION

Static testing and kinetic testing were conducted on synthetic tailings samples produced as part of metallurgical testing for the Project, including desulphurized tailings and concentrate tailings.

Desulphurized Tailings

Desulphurized tailings samples have a low total sulphur content (median 0.18%), primarily present as sulphides (pyrite) and are NPAG. As a result of the desulphurization process, the desulphurized tailings had no potential for net acidic leachates and low metal release rates based on humidity cell testing. Mercury concentrations in test leachates were below or at the analytical detection limit throughout testing. Solid phase metal concentrations were low and were usually below screening values.

Analyses conducted on supernatant samples after cyanide destruction, representing process water to be discharged with the tailings, indicated that the process water generally had a pH around neutral with generally low metal concentrations. Metal concentrations were below qualitative screening values for most elements with the exception of cobalt and phosphorus (all samples), and antimony, arsenic, copper, iron and molybdenum in isolated samples. Sulphate concentrations were on the order of 1,000 mg/L and were attributed to the addition of sulphate as a reagent during the cyanide destruction process.

Concentrate Tailings

The lower volume of sulphide-containing concentrate tailings purposefully produced in the process plant through the desulphurization flotation circuit are PAG. The samples had an elevated total sulphur content (median 32%) present as sulphides (mainly pyrite). Consistent with their high sulphide content, the samples had elevated solid phase concentrations of several metals (arsenic, cadmium, copper, lead, molybdenum, selenium, silver, tungsten and zinc).

Results of the subaqueous recirculating column test on the concentrate tailings sample indicated that oxidation of the material was limited under submerged conditions as are proposed. Consistent with low rates of sulphide oxidation, metal release rates for the concentrate tailings sample were low and many parameters (including antimony, beryllium, chromium, lead, molybdenum, nickel, silver, thallium, tungsten, vanadium, zinc and zirconium) were below analytical detection limits.

2.6.3 OVERBURDEN CHARACTERIZATION

A geochemical characterization program was undertaken to assess overburden materials that are expected to be relocated as part of Project development. Static and kinetic testing of overburden samples were conducted to be representative of overburden to be excavated as part of the Project development. The static testing program included 116 overburden samples, and kinetic testing included four trickling leach column tests.

Static testing of the 116 overburden samples indicated that the overburden is NPAG based on an average carbon neutralization potential ratio of 34, where carbon neutralization potential values grater than 2 are considered NPAG. The samples had a very low total sulphur content; total sulphur was below the analytical detection limit in approximately half of the samples. Where detectable, total sulphur concentrations ranged from 0.006% to 0.11% (median 0.01%).

Ninety-five percent (95%) of the samples (i.e., 110 samples) had a carbon neutralization potential ratio greater than 2 and were considered NPAG. Six samples had lower carbon neutralization potential ratios and are not considered a risk for acid generation (generally consisting of glacial sands with no neutralization capacity and sulphur contents that were at or very close to the detection limit. This was consistent with net acid generation test results that indicated that these samples were NPAG.

Most overburden samples had a modified neutralization potential content in the order of 8 kg $CaCO_3$/t, although values ranged from -0.7 to 120 kg $CaCO_3$/t. Neutralization potential was predominantly represented by carbon neutralization potential for most samples; however, samples with a low modified neutralization potential content often contained no carbon neutralization potential. Samples that comprised glacial sand most often had low levels of neutralization potential, likely reflecting the predominance of quartz in these samples.

Solid phase elemental content results were compared to ten times the crustal abundance values presented in Price (1997) for screening purposes. Sample concentrations greater than the screening value were considered enriched in those elements, noting that this screening approach does not provide a direct assessment of metal leach potential or resulting water quality. The samples had a low solid phase metals content that were usually below screening values utilized for the investigations. Solid phase mercury concentrations were below the analytical detection limit for most samples and below screening values for all samples.

Results from the shake flask extract tests were used as a screening tool to identify parameters of potential interest for the Project and do not represent future runoff or seepage quality. Shake flask extraction testing showed concentrations of metals in leachates that were generally low and below screening values, with the exception of silver in multiple samples, and concentrations of arsenic, chromium, copper, tungsten, uranium and vanadium in isolated samples. Mercury concentrations in the shake flask extraction leachates were below screening values for all samples, and below analytical detection limits for 95% of the samples.

Static testing demonstrated that the overburden samples were NPAG with very low sulphur contents and low solid phase metal contents. Typically, materials with very low sulphide and metal contents below screening values are not subject to kinetic testing. Kinetic tests usually focus on material with a higher sulphur or metal content considered to pose a potential risk for ML / ARD. Despite this, the Project utilized a proactive and protective approach and included kinetic testing on overburden. Data is available for four trickle leach columns that have operated between 19 and 40 weeks.

Leachate from three of the column tests which represent the bulk of the overburden at the Project had approximately neutral pH throughout testing. Steady-state metal concentrations in leachate were usually similar to, or lower than those observed in baseline surface water quality data for the site. Many of the parameters tested including mercury, were in concentrations consistently below analytical detection limits.

A trickle leach column was also established as a conservative case that is not expected to represent the overall or typical overburden at the Project, which contained a sample that had low carbon neutralization potential (based on total inorganic carbon below the analytical detection limit), comparatively high sulphur (80th percentile), and low carbon neutralization potential ratio (4th percentile). That column had a leachate pH between 5 and 6 as the sample had essentially no neutralizing capacity, which suggests the leachate pH is primarily controlled by the pH of the deionized water used in the test. Sample logs indicated that organic matter was present and total carbon levels in the sample aligned with the potential presence of organic carbon. The slightly acidic pH conditions may also be influenced by the presence of natural organic acids. Leachate from that column was generally noted to have slightly higher concentrations of metals than leachate from the other column tests. This is attributed to the slightly acidic pH of the of the leachate (due to the deionized water used in the test or the presence of natural organic acids) and may have resulted in dissolution of naturally-occurring iron hydroxides and the release of associated trace metals. Such drainage quality is not anticipated to occur under field conditions, as testing indicates that most overburden materials produce alkalinity which provides buffering capacity to the drainage, unlike the deionized water used in the test.

2.7 GROUNDWATER

Groundwater elevations correlate with ground surface elevations, with the highest water levels generally occurring at the high topographic areas at the north portion of the Property. Steep groundwater gradients along the area of bedrock ridge likely reflect the lower bedrock hydraulic conductivity of the ridge area. Groundwater flow across the Property is directed primarily south and west, following the general

topography towards Dixie Creek / lower portion of Unnamed Watercourse 3, eastward groundwater flow under Unnamed Waterbody 6, and an area comprising the lower portion of Unnamed Watercourse 1 and upper portions of Unnamed Watercourses 2 and 4.

Vertical hydraulic gradients on the Property are typically mild. Downward vertical hydraulic gradients are observed generally in areas of the Property above 380 masl, representing the inferred groundwater recharge zones across the Property. Vertical upward hydraulic gradients are located in three locations on the Property that are close to the surface water features and in lower elevations to the southeast of the topographic high ground area.

The magnitude of water levels changes varies across locations on the Property. The greatest variability is seen in glaciolacustrine areas, and this is an indication of reduced hydraulic connection with this unit than the other materials found at the Property. There is a lack of large seasonal variation in the inferred groundwater recharge areas, which is an indication of better hydraulic connection in these areas.

There are currently over 2,500 exploration boreholes at the Property, which have to potential to act as a conduit for the movement of groundwater between water producing features. A grouting program is being undertaken to seal off the exploration boreholes near proposed underground workings.

Interactions between groundwater and surface water at the Property consists of both groundwater discharge to the surface at some several surface water locations and groundwater recharge areas in the north part of the Property coinciding with topographic high ground areas with glacial sand deposits. Interactions between groundwater and surface water can also be affected by the presence pf surficial clays at higher elevations, as well as interactions through seeps and overland flow at some locations. Some areas with exploration drillholes near Dixie Creek might leak water, explaining the identification of possible groundwater springs.

Groundwater quality in the area is also of good quality and concentrations of dissolved metals are low, with most parameters at or below analytical detection limits, with the exception in the baseline condition of dissolved phosphorus and select dissolved metals (cobalt, copper, iron, tungsten and uranium).

2.8 SURFACE WATER

The Property is located primarily in the Dixie Creek watershed. Dixie Creek flows into the Chukuni River and ultimately discharges into Pakwash Lake. Regional flow data from the Water Survey of Canda (WSC) is well documented in this region and was relied upon to characterize conditions in Dixie Creek, the Chukuni River, and local tributaries.

With respect to the regional hydrologic data (WSP 2024b):

- Chukuni River near Ear Falls WCS hydrometric monitoring station (1963 to present): freshet generally starts in April and runoff peaks in June, with lowest runoff during February and March. Mean annual discharge was 29.8 m^3/s and mean annual runoff was 215 mm.
- Long-Legged River below Long-Legged Lake WSC hydrometric monitoring station (1980 to present): freshet generally starts in April and runoff peaks in June, with lowest runoff during February and March. Mean annual discharge was 3.5 m^3/s and mean annual runoff was 200 mm.
- Golden Creek near Red Lake WCS hydrometric monitoring station (2009 to present): freshet generally starts in April and runoff peaks in May with a second peak in October, with the lowest runoff during January to March. Mean annual discharge 0.5 m^3/s and mean annual runoff was 279 mm.

Statistical low flows for the Project were calculated for the three above WSC hydrometric monitoring stations. The Chukuni River near Ear Falls WSC hydrometric monitoring station low flows range from 7.57 m^3/s to 1.86 m^3/s. For the Long-Legged River below Long-Legged Lake WSC station, the low flows ranged from 0.84 m^3/s to 0.32 m^3/s. Golden Creek near Red Lake WSC station had the lowest flows with a range of 0.012 m^3/s to 0.002 m^3/s. As the Chukuni River near Ear Falls WSC station is impacted by the operation of the Snowshoe Rapids Dam, the Long-Legged River low flow estimates were prorated to the Chukuni River station to provide additional understanding of the potential natural flow regime, if the

Chukuni River Station was unregulated. These values ranged for a low flow from 2.6 m^3/s to 6.7 m^3/s. The overall low flow values taken from six regional WSC flow stations within 180 km of the Property ranged from 13.8 m^3/s to 6.23 m^3/s.

Hydrometric monitoring stations were developed to monitoring surface water flows within the Property. Average monthly discharge at these stations displayed a wide range of flows, with the greatest discharge during spring months April to June. The maximum average discharge was at 6.13 m^3/s at Dixie Creek at Tote Road during June 2022 and the minimum was <0.001 m^3/s at Dixie Lake Outlet. The minimum monthly discharge along the tributaries contributing to Dixie Creek ranged from 0.002 m^3/s at Unnamed Watercourse 1 to 0.004 m^3/s at Unnamed Watercourse 3.

Water levels were monitored from 2022 to 2024 at: Dixie Lake, Stone Lake, Gullrock Lake, Genessee Lake, Unnamed Waterbody 1 and Unnamed Waterbody 5. The measured average change in water level elevation were observed to range from 0.4 m to 1.7 m. Peak water levels were generally observed during the spring months, corresponding to the spring freshet, while low water levels correspond to the summer low flow periods. Water levels at the monitoring stations along Dixie Creek and Genessee Lake are also influenced by beaver activity.

Water levels for Pakwash Lake were compared with water levels for Dixie Creek at Tote Road and the Chukuni River. The range of water levels at all three stations followed similar patterns, with high water levels in fall 2022 through to spring 2024. This indicates that the water levels on the Chukuni River are affected by backwater from Pakwash Lake and that they influence the water levels at Dixie Creek at Tote Road.

Baseline surface water quality in site watercourses and waterbodies is typical of northern Ontario in mineralized areas, including circumneutral to slightly acidic pH, low concentrations of nitrogen species, relatively low concentrations of total dissolved solids and occasionally elevated concentrations of total metals. Baseline sulphate concentrations ranged from 0.15 mg/L to 70.0 mg/L with a 3.07 mg/L average across all samples collected for the environmental baseline investigations. The highest concentrations were generally associated with small unnamed watercourses and waterbodies.

Water quality of small unnamed watercourses and Project area lakes appear to be highly influenced by adjacent wetlands and relatively shallow depth. Waters are moderately hard, exhibit seasonal temperature fluctuations, and have high levels total and dissolved organic carbon. Concentrations of phosphorus in the area investigated for the baseline study lakes are elevated and were classified as meso-eutrophic to eutrophic.

2.9 AQUATIC RESOURCES

Aquatic fieldwork has been completed over multiple years, across multiple seasons, starting in 2022 and continuing into 2025. Field studies have evaluated fish habitat, fish and benthic invertebrate communities, fish size and age, fish tissue samples, and water and sediment quality (WSP 2025b). This section presents a summary of information available to support the assessment of the mine waste alternatives.

Fish tissue samples were analyzed for total metals including mercury, methyl mercury and selenium, as well as percent moisture. Metals of interest included deleterious substances measured in treated mining effluent under the MDMER. Fish tissues samples were compared to provincial consumption guidelines of the Ministry of the Environment, Conservation and Parks (MOECC 2015) and federal food and nutrition standards (Health Canada 2011). Samples were also evaluated against the Canadian Council of Ministers of the Environment (2000) guideline for the protection of wildlife consumers for methylmercury and the Federal Environmental Quality Guideline for selenium. Sediment quality measurements were compared against the Provincial Sediment Quality Guidelines lowest effect level and the Provincial Sediment Quality Guidelines severe effect level.

The findings from the aquatic resource studies are summarized for waterbodies and watercourses in the area of the proposed mineral waste alternatives.

2.9.1 DIXIE CREEK

Four sampling locations were evaluated along Dixie Creek for fish habitat, community, length, age, and tissue as well as water and sediment quality and benthic invertebrate community. All four sampling locations were classified as riverine habitat with a moderate to broad floodplain and soft fine-grained sediment with smaller amounts of boulder / cobble. Upland areas are mainly mixed coniferous and deciduous dominated by Black Spruce, poplar species, and Tamarack, while vegetation near to the riparian zones includes alder and herbaceous species.

Metabarcoding analysis was used in Dixie Creek to identify the number of species as follows:

- At DC-01 DNA from 17 species were identified including: Blacknose Shiner, Burbot, Central Mudminnow, Fathead Minnow, Iowa Darter, Johnny Darter, Lake Chub, Northern Pike, Rock Bass, Sauger, sculpin species, Shorthead Redhorse, Silver Redhorse, Spottail Shiner, Walleye, White Sucker and Yellow Perch
- At DC-03 DNA from 19 species were identified including: Blacknose Shiner, Burbot, Central Mudminnow, Finescale Dace, Golden Shiner, Iowa Darter, Johnny Darter, Mimic Shiner, Mooneye, Northern Pearl Dace, Northern Pike, Rock Bass, Sauger, sculpin species, Shorthead Redhorse, Spottail Shiner, Walleye, White Sucker and Yellow Perch
- At DC-04 DNA from 28 species were identified including: Blacknose Shiner, Burbot, Central Mudminnow, Common Shiner, Creek Chub, Emerald Shiner, Fathead Minnow, Finescale Dace, Golden Shiner, Green Sunfish, Iowa Darter, Johnny Darter, Lake Chub, Lake Whitefish, Mimic Shiner, Mooneye, Northern Pearl Dace, Northern Pike, Northern Redbelly Dace, Rock Bass, sculpin species, Shorthead Redhorse, Silver Redhorse, Smallmouth Bass, Spottail Shiner, Trout-perch, Walleye, White Sucker and Yellow Perch.

Fish tissue samples from all four sampling locations measured mercury concentrations and as summarized:

- DC-01: all fish tissue samples were found to be below the Ontario consumption guideline for the general population and for those developed for women of child-bearing age and children
- DC-02: all fish tissue samples were found to be below the Ontario consumption guideline for the general population and for those developed for women of child-bearing age and children
- DC-03: all total mercury fish tissue samples were found to be less than the Ontario consumption guideline developed for the general population and women of child-bearing age and children
- DC-04: total mercury samples were found to be less than the Ontario consumption guideline developed for the general population and one sample was found to be above the guideline developed for women of child-bearing age and children.

Fish tissue were also analyzed for methylmercury and the results are summarized as follows:

- DC-01: all samples were found to be less than the Health Canada maximum concentrations and Canadian Council of Ministers of the Environment (CCME) guideline for the methylmercury protection wildlife consumers of aquatic biota
- DC-02: all methylmercury samples were found to be less than the CCME guideline for the protection of wildlife consumers of aquatic biota with the exception of the Northern Pike samples
- DC-03: all methylmercury samples were found to be above the CCME guideline for the protection of wildlife consumers of aquatic biota.

DC-04: all methylmercury samples were found to be above the CCME guideline for the protection of wildlife consumers of aquatic biota. Sediment quality measurements of total organic carbon (TOC) were found to be above the Provincial Sediment Quality Guideline Lowest Effect Level (PSQG LEL) at all four stations. Additionally, background sediment concentrations for arsenic chromium, copper, manganese and nickel were found to be above the PSQG LEL within Dixie Creek.

2.9.2 CHUKUNI RIVER

Three sampling locations were evaluated along the Chukuni river for fish habitat, community, length, age, and tissue as well as water and sediment quality, lower trophic and primary productivity, fish tissue and benthic invertebrate community. All three sampling locations were classified as large river habitat characterized by reaches with moderate flow and occasional fast flowing with soft fine-graine sediments with some boulder / bedrock and cobble / sand. The upland vegetation communities are mainly mixed coniferous and deciduous dominated by Black Spruce and poplar species while vegetation near to the riparian zone include alder, willow, and herbaceous species.

Metabarcoding analysis was used in the Chukuni River to identify the number of species as follows:

- CR-REF: DNA from 27 species were identified including, Blacknose Shiner, Burbot, Central Mudminnow, Creek Chub, Emerald Shiner, Fathead Minnow, Finescale Dace, Golden Shiner, Iowa Darter, Johnny Darter, Lake Chub, Lake Whitefish, Mimic Shiner, Mooneye, Northern Pearl Dace, Northern Pike, riffle dace species, Rock Bass, sculpin species, Shorthead Redhorse, Silver Redhorse, Smallmouth Bass, Spottail Shiner, Trout-perch, Walleye, White Sucker and Yellow Perch
- CR-FDP: DNA from 29 species were identified including, Blacknose Shiner, Burbot, Central Mudminnow, Common Shiner, Creek Chub, Emerald Shiner, Fathead Minnow, Finescale Dace, Golden Shiner, Iowa Darter, Johnny Darter, Lake Chub, Lake Whitefish, Mimic Shiner, Mooneye, Northern Pearl Dace, Northern Pike, riffle dace species, Rock Bass, sculpin species, Shorthead Redhorse, Silver Redhorse, Smallmouth Bass, Spottail Shiner, Trout-perch, Walleye, White Sucker and Yellow Perch
- CR-DS: DNA from 25 species were identified including, Blacknose Shiner, Burbot, Central Mudminnow, Emerald Shiner, Fathead Minnow, Green Sunfish, Iowa Darter, Johnny Darter, Lake Chub, Lake Whitefish, Mimic Shiner, Mooneye, Northern Pearl Dace, Northern Pike, riffle dace species, Rock Bass, sculpin species, Shorthead Redhorse, Silver Redhorse, Smallmouth Bass, Spottail Shiner, Trout-perch, Walleye, White Sucker and Yellow Perch.

Fish tissue samples were submitted for total metals, selenium, mercury and methylmercury. The following summarizes the mercury fish tissue results:

- CR-REF: mercury concentrations were found to be less than the Health Canada maximum contaminant concentration and the Ontario consumption guideline for the general population as well as women of child-bearing age and children
- CR-FDP: all mercury fish tissue samples were found to be less than the Ontario consumption guideline for the general population and the Ontario guideline developed for women of child-bearing age and children, except for Northern Pike and Walleye in which some samples were greater than the Ontario guideline for women of child-bearing age and children
- CR-DS: all mercury fish tissue samples were found to be less than the Ontario consumption guideline for the general population with some samples found being greater than the Ontario guideline developed for women of child-bearing age and children.

The fish tissue results for the methylmercury by station in the Chukuni River are summarized:

- CR-REF: methylmercury concentrations were typically greater than the CCME guideline for the protection of wildlife consumers of aquatic biota
- CR-FDP: methylmercury concentrations were typically greater than the CCME guideline for the protection of wildlife consumers of aquatic biota
- CR-DS: all methylmercury fish tissue concentrations were greater than the CCME guideline for the protection of wildlife consumers of aquatic biota.

Sediment quality measurements of TOC were general found to be above the PSQG LEL. Additionally, background sediment concentrations for arsenic, chromium, copper and nickel were found to be above the PSQG LEL within the Chukuni River.

2.9.3 GENESSEE LAKE

Genessee Lake is a large, deep lake (maximum 11 m deep) with deep water lentic habitat. Substrate composition near the shore is mainly comprised of exposed bedrock and boulder, with areas of soft fine-grained sediments. Vegetation in the upland zones consists mainly of mixed coniferous and deciduous dominated by Black Spruce and White Spruce, while vegetation near to the riparian zone included woody shrubs and herbaceous species.

Metabarcoding analysis identified DNA from 24 species in water samples collected from Genessee Lake during spring, summer, and fall 2023 sampling. Species DNA included, Blacknose Shiner, Burbot, Common Shiner, Fathead Minnow, Finescale Dace, Golden Shiner, Iowa Darter, Johnny Darter, Lake Chub, Lake Whitefish, Mooneye, Northern Pearl Dace, Northern Pike, Northern Redbelly Dace, Rock Bass, Sauger, sculpin species, Shorthead Redhorse, Silver Redhorse, Spottail Shiner, Trout-perch, Walleye, White Sucker, and Yellow Perch. Fish tissue samples were collected and analysed for total metals including selenium, mercury and methylmercury. The mercury concentrations were all less than the Ontario consumption guideline developed for the general population and most samples were less than the guideline for women of child-bearing age and children. All methylmercury fish tissue concentrations were found to be above the CCME protection of wildlife consumers of aquatic biota.

2.9.4 PAKWASH LAKE

Monitoring was conducted at Pakwash Lake by the Ministry of Natural Resources (MNR). A total of 20 fish species were identified in the lake, with Walleye and Sauger making up the largest proportion. Mercury concentrations in fish tissue samples were below the Ontario guidelines for the general population, while most samples were greater than the guideline for women of child-bearing age and children. Sediment quality measurements showed TOC, arsenic and nickel, as well as chromium, copper, and manganese in one case above the PSQG LEL.

2.9.5 GULLROCK LAKE

Monitoring was conducted at Gullrock Lake by the MNR. A total of 15 species were identified in the lake, with Walleye and Cisco making up the largest proportion of. Most mercury concentrations in fish tissue samples were below the Ontario guidelines for the general population, while several sampled were above the guidelines for women of child-bearing age and children.

2.9.6 UNNAMED WATERBODIES

2.9.6.1 UNNAMED WATERBODY 1

Unnamed Waterbody 1 (WB-1) is a shallow lake consisting of habitat type A characteristics, including a wide riparian habitat dominated by shrubs, grasses, and sedges along the margins and outlet drainage to WB-2 (Table A1-1B, Figure 2-1). The upland vegetation is mostly coniferous species such as Black Spruce. The substrate consists of soft fine-grained sediments with a uniform depth ranging from 0.5 to 1.0 m. The lake is dominated by an emergent aquatic macrophyte, Northern Wild Rice, which forms a dense cover across the entire wetted surface area.

Central Mudminnow and Golden Shiner were the two fish species sampled in the lake; however, it is possible that the lake also contains Northern Pike. Sediment quality was measured at three stations in the lake, with TOC concentrations higher the PSQG LEL for severe levels at all locations. Sediment concentrations were also elevated compared to PSQG LEL for arsenic and cadmium.

2.9.6.2 UNNAMED WATERBODY 2

Unnamed Waterbody 2 is a small, deep-water inland lake, measuring a maximum of 7 m deep. This lake is likely to support a variety of small-bodied and large-bodied species of varying life stages. Substrate

composition is primarily soft fine-grained sediment with a greater abundance of boulder / bedrock and cobble. Vegetation in the upland zones is mainly mixed coniferous and deciduous dominated by Black Spruce and White Spruce, while vegetation near to the riparian zone includes woody shrub and herbaceous species.

DNA from six fish species was found in the Unnamed Waterbody 2 including, Central Mudminnow, Fathead Minnow, Golden Shiner, Mimic Shiner, Northern Pike, and Spottail Shiner. Fish tissue samples were collected and the mercury concentrations in fish tissue samples were below the Ontario consumption guidelines for the general population but higher than the guideline for women of child-bearing age and children and the Health Canada maximum contaminant concentration. Methylmercury concentrations were grater than the CCME guideline for the protection of consumers of aquatic biota.

Sediment quality measurement of TOC were elevated compared to the PSQG LEL. Background concentrations were elevated for arsenic, cadmium, copper and mercury. Unnamed Waterbody 4

Unnamed Waterbody 4 is classified as a small pond with an average depth of 1 m. A total of 24 individuals were captured from Unnamed Waterbody 4 using baited minnow traps during spring 2022 (June). Species captured include Brook Stickleback, Central Mudminnow, Fathead Minnow, and Finescale Dace Unnamed Waterbody 6

Unnamed Waterbody 6 is a shallow lake with a maximum depth of 1.78 m and a lentic habitat characteristic of the small, shallow waterbodies on the Property It has a wide riparian habitat comprised of grasses, sedges and shrubs along the northwest margin and outlet to Dixie Creek. The upland vegetation is mostly coniferous species such as Black Spruce. Sediment consists of silt with some clay and fine sand.

DNA from seven fish species was found in the lake including: Blackchin Shiner, Blacknose Shiner, Fathead Minnow, Northern Pike and Yellow Perch. Mercury concentrations in the fish tissue sampled were less than the Ontario consumption guidelines for all groups. Methylmercury concentrations all greater than the guideline.

2.9.7 UNNAMED WATERCOURSES

2.9.7.1 UNNAMED WATERCOURSE 1

Unnamed Watercourse 1 has a steep gradient with moderate beaver activity creating alternating series of pools and impoundments that discharge into Dixie Creek. The stream is surrounded by a mixed deciduous and coniferous forest and thick alder, grasses, and sedges line the banks. The stream is wide with a moderate depth and flow. The substrate is comprised of sand and silt, with occasional gravel. Fallen trees, overhanging shrubs, and undercut banks provide habitat for small-bodied fish.

A total of 25 fish were sampled from the stream, including Central Mudminnow, Golden Shiner, Northern Pike, Northern Pearl Dance, and White Sucker. Mercury concentrations in fish tissue samples were below all Ontario consumption guidelines for the general population as well as those developed for women of child-bearing age and children as well as the Health Canada maximum contaminant concentrations. Methylmercury concentrations were all higher than the CCME guideline for the protection of wildlife consumers of aquatic biota.

2.9.7.2 UNNAMED WATERCOURSE 1A

Unnamed Watercourse 1A flows into Unnamed Watercourse 1 and has a broad floodplain with floating herbaceous mats. The upper reaches emerge from groundwater springs. The substrate consists mostly of organic debris.

No fish were sampled from this watercourse; however, temperature measurements indicate that it could be classified as a coldwater fish habitat. All pH measurements did not meet the guidelines, while all except one DO measurement met the guidelines.

2.9.7.3 UNNAMED WATERCOURSE 1B

Unnamed Watercourse 1B has a swampy network of shallow, slow flowing watercourses and beaver dams within a broad floodplain, with most of the flow occurring underground. Substrate mostly consists of leaf litter.

A total of 63 fish were caught from the watercourse, including Brook Stickleback, Central Mudminnow, and Finescale Dace. Temperature measurements and species present indicate that it is a warm to coldwater fish habitat. Most DO and pH measurements did not meet the guidelines.

2.9.7.4 UNNAMED WATERCOURSE 3

Unnamed Watercourse 3 is wide with a moderate depth, and occasional large pools within a dense mixed deciduous and coniferous forest (such as Black Spruce, White Spruce, and poplar) are present throughout the stream reach. The water is dark tea-stained colour and substrate is comprised predominantly of clay with sections of banks heavily eroded. The pool habitat has abundant coarse and fine wood debris, with soft, fine-grained sediments that support dense aquatic macrophytes. Riparian vegetation is mostly comprised of grasses and sedges with alder species further upland adjacent to mixed coniferous and deciduous forest. Overhanging grasses, shrubs, LWD, and ponded areas provide habitat for small-bodied fish.

A total of 1,712 fish were sampled from Unnamed Watercourse 3 including Brook Stickleback, Central Mudminnow, Finescale Dace, Northern Redbelly Dace, Phoxinus Hybrid, Slimy Sculpin, and White Sucker. Fish tissue samples were analysed for total metals including mercury and methylmercury. The mercury concentrations were found to be less than the Ontario consumption guideline for the general population and those developed for women of child-bearing age and children. Methylmercury samples were found to have some concentrations greater than the CCME guideline for the protection of wildlife consumers of aquatic biota.

Sediment samples were found to be higher than the PSQG LEL for TOC and it was also noted that concentrations were grater than PSQG LEL.

2.9.7.5 UNNAMED WATERCOURSE 3A

Unnamed Watercourse 3A is a tributary of Unnamed Watercourse 3 and is a narrow, shallow stream with dense deciduous and coniferous forest. The water is dark in colour and the substrate is predominantly lead litter and silt.

A total of 149 fish were sampled from the stream, including Brook Stickleback, Central Mudminnow, and Northern Pike. Sediment quality measurements of TOC were all above the PSQG LEL, and were also noted to be elevated for chromium, copper, iron, manganese, and nickel. Unnamed Watercourse 3B

Unnamed Watercourse 3B is a tributary to Unnamed Watercourse 3 and is a narrow, shallow stream within dense deciduous and coniferous forest. The water is dark in colour and the substrate is predominantly clay with eroded sections of bank.

A total of 97 fish were sampled from the stream, including Brook Stickleback and Central Mudminnow. All methylmercury concentrations from fish tissue samples were greater than the guideline. All selenium concentrations were below the guidelines. All sediment quality measurements of TOC were greater than the PSQG LEL.

2.9.7.6 UNNAMED WATERCOURSE 6A

Unnamed Watercourse 6A is a narrow, shallow stream surrounded by coniferous and deciduous forest. The water is dark in colour and the substrate is predominantly cobble, much, and silt.

A total of 28 fish were sampled from the stream, including Brook Stickleback and Central Mudminnow. Fish tissue samples were analysed for total metals, mercury and methylmercury. Methylmercury concentrations were found to be above the CCME guideline for the protection of wildlife consumers of aquatic biota.

2.9.7.7 UNNAMED WATERCOURSE 6A-01

Unnamed Waterbody 6A-01 is a small, groundwater fed water course for Unnamed Waterbody 6. It had no flow present when surveyed.

2.9.7.8 UNNAMED WATERCOURSE 7

Unnamed Watercourse 7 is a wide riverine section of creek with a broad floodplain and frequent, strong meander bends. The substrate is predominantly soft fine-grained sediments with occasional boulder.

A total of eight fish were sampled from the creek, including Northern Pike and Yellow Perch. The Northern Pike tissue sampled had mercury concentrations below the Ontario consumption and Health Canada guidelines, with the exception of one sample that was greater than the guidelines developed for women of child-bearing age and children. All methylmercury samples were greater than the guideline, and selenium concentrations were below the guidelines. The Yellow Perch tissue samples had mercury concentrations below the Ontario consumption and Health Canada guidelines and methylmercury concentrations that were above the CCME guideline for the protection of wildlife consumers of aquatic biota. Selenium concentrations were below the guidelines. Sediment quality measurements of TOC were elevated compared to the PSQG LEL at all locations and were also noted to be elevated for chromium, copper, iron, manganese, and nickel.

2.9.7.9 UNNAMED WATERCOURSE 7A-03

Unnamed Watercourse 7A-03 is a shallow, narrow stream with a series of pools and impoundments, with mixed coniferous and deciduous forest. The water is dark in colour and the substrate it predominantly silt and gravel. No fish were sampled at this location. Sediment quality measurements of TOC were greater than the PSQG LEL.

2.9.7.10 UNNAMED WATERCOURSE 7A-07

Unnamed Watercourse 7A-07 is a shallow, narrow stream within a mixed coniferous and deciduous forest. The water is dark in colour and the substrate is predominantly silt.

A total of 158 fish were sampled from the stream, including Brook Stickleback, Central Mudminnow, and Golden Shiner. Fish tissue samples were analysed for total metals, mercury and methylmercury. Methylmercury concentrations were elevated compared to the CCME guideline for the protection of wildlife consumers of aquatic biota. Sediment quality measurements of TOC greater than the PSQG LEL and concentrations of arsenic, copper, iron, manganese, and nickel were also found to be above PSQG LEL.

2.9.7.11 UNNAMED WATERCOURSE 7A-08

Unnamed Watercourse 7A-08 is a shallow stream with a large drainage pool and impoundment in an alder dominated riparian and mixed coniferous and deciduous forest. The water is dark in colour and the substrate is predominantly silt.

A total of 163 fish were sampled from the stream, including Brook Stickleback, Central Mudminnow, Finescale Dace, and Northern Pike. One methylmercury concentration is fish tissue samples was greater than the guideline, and selenium concentrations were below the guidelines. Sediment quality measurements of TOC were above PSQG LEL at all locations, and elevated concentrations were also noted for arsenic, iron, manganese, and nickel.

Fish tissue samples observed that some of the samples were above the methylmercury concentration for the CCME guideline for the protection of wildlife consumers of aquatic biota.

2.9.7.12 UNNAMED WATERCOURSE 8

Unnamed Watercourse 8 is a tributary of Gullrock Lake and is a shallow stream with high, eroded banks and an alder dominated riparian with mixed coniferous and deciduous forest. The water is dark in colour and the substrate is predominantly clay.

A total of 753 fish species were sampled from the stream, including Brook Stickleback, Central Mudminnow, Fathead Minnow, Finescale Dace, Northern Pearl Dace, Northern Redbelly Dace, and White Sucker. Sediment quality measurements of TOC were elevated compared to the PSQG LEL

2.10 VEGETATION

The Property is dominated by upland conifer forest, upland deciduous forest, and conifer swamp, where it has not been recently cut by forestry companies. Widespread wildfire and development have resulted in younger jack pine forest throughout the western and southern areas of the Property, while the oldest forests are typically in lowland areas such as treed swamps, bogs, and fens. Dominant tree species on the Property include Jack Pine, Black Spruce, Trembling Aspen and White Birch, with lesser amounts of Balsam Fir and White Spruce.

Meadow marshes are the most abundant open wetland on the Property, often having formed on the exposed sediments in inactive Beaver ponds. Shore fens are also abundant in the vicinity of Unnamed Waterbody 6 and Unnamed Waterbody 1 lakes and Dixie Creek. The wetlands on the Property have not been formally evaluated for provincial significance. Non-wetland terrestrial non-forested communities (<25% tree cover) account for less than 1% of the Property. These barren areas include vascular plant species such as Common Juniper, Bearberry, and Three-toothed Cinquefoil, with some occurrence of Pin Cherry, Jack Pine, Balsam Fir. North facing cliffs often support mosses and herbaceous shrubs and ferns.

A total of 331 species of vascular plants have been documented on the Property, with 42 of these species being non-native. In addition, 77 species of fungi were observed on the Property. One federally or provincially listed Species at Risk, the Black Ash, has a range that potentially overlaps with the Property. Two species of provincially rare plants have been observed on the Property: floating Marsh Marigold and Hooker's Orchid. No provincially rare plant communities were observed on the Property.

Wild Rice was found in Unnamed Waterbody 1 and Unnamed Waterbody 6, with over 90% of Unnamed Waterbody 1 covered in Wild Rice. Wild Rice abundance in Unnamed Waterbody 6 was more variable over time and represented a much smaller area of the whole lake in all surveyed years. Wild Rice was also observed on Dixie Creek upstream from Dixie Lake and in the lower portion above the junction with the Chukuni River. Competition was not identified as a factor in Wild Rice abundance, and no invasive plant species were observed on either lake.

2.11 WILDLIFE

2.11.1 BIRDS

A total of 153 bird species were observed on the Property in 2021-2023, several of which are migratory and do not breed in the Red Lake area. Additional species could be expected on the Property due to known distributions. The most commonly observed birds on the Property include Nashville Warbler, White-throated Sparrow, Red-eyed Vireo, Ovenbird, Ruby-crowned Kinglet, Chipping Sparrow, Magnolia Warbler, Hermit Thrush, Tennessee Warbler, and Yellow-rumped Warbler. Seven species of owls, ten species of raptors, six species of shorebirds, seven species of colonial nesting birds, and 49 wetland-associated species have been detected on the Property. Several species of game birds including three species of Ruffed Grouse were also detected on the Property. Unnamed Waterbody 6 and Unnamed Waterbody 1 are stopover areas for migrating waterfowl and waterbirds, particularly in the fall due to the presence of Wild Rice.

A total of 13 avian provincial or federal Species at Risk (SAR) have been detected on the Property, including American White Pelican, Bald Eagle, Bank Swallow, Barn Swallow, Canada Warbler, Common Nighthawk, Eastern Whip-poor-will, Eastern Wood-pewee, Evening Grosbeak, Olive-sided Flycatcher, Rusty Blackbird, Short-eared Owl, American White Pelican and Yellow Rail. Two active colonies of

Threatened Bank Swallow are present in aggregate pits along Tuzyk's road. Eastern Whip-poor-will uses the northwest corner of the Property as well as area north of Genessee Lake.

2.11.2 MAMMALS

A total of 36 mammal species were observed on the Property from 2021 to 2023. The most commonly observed species on the Property were Snowshoe Hare, Grey Wolf, Moose, Red Squirrel and Canada Lynx, followed by Black Bear. Various other furbearing species are likely to use the Property based on habitat, range, and track sightings.

Five federal or provincial mammal SAR have been detected on the Property and there is potential for several others based on species range and documentation in surrounding areas. Wolverine have been detected at several location on the Property. The habitat type at the Due to the large individual ranges and lack of overlap between the ranges of reproductive females, it is expected that a relatively small number of wolverines are likely to use the Property. The low-density boreal forest habitat present at the Property is considered to be suitable for Wolverine. Little Brown Myotis, Northern Myotis, Red Bat, Hoary Bat, and Silver-haired Bat were also detected on the Property. The Property is located in a regulated habitat range for Boreal Caribou and the area has formerly supported the species. During the 2021 to 2023 terrestrial baseline studies, there was no direct or indirect evidence of Boreal Caribou on the Property.

2.11.3 REPTILES AND AMPHIBIANS

Six amphibian species have been confirmed to be occurring on the Property from 2021 to 2023, including Spring Peeper, Wood Frog, Gray Treefrog, American Toad, Eastern Garter Snake, and Painted Turtle. A few other species are potentially occurring based on their broad ranges and presence of habitat on the Property. All observed snakes were lone individuals, and no aggregations of snakes were observed, although suitable habitat may exist. There were no vernal pool amphibian breeding habitat or amphibian movement corridors observed on the Property. No evidence of overwintering turtles was observed from during investigations between 2021 and 2023, but it is likely that overwintering habitat exists on Waterbody 6. Snapping Turtle (a SAR) were not identified on the Property, however their range overlaps with the Property and potentially suitable habitat is present along Dixie Creek, Water Body 6, and other large watercourse and waterbodies.

2.11.4 INSECTS

A total of 23 odonate species and 25 butterfly species were documented on the Property from 2021 to 2023. Additional species are likely present given broad ranges and habitat types present on the Property. Dragonfly species Cobra Clubtail was observed on Dixie Creek south of the Property and is considered provincially rare and present in fewer than 20 locations in Ontario. Additionally, western white butterflies are considered provincially rare and were observed along several Property roads.

The only insect SAR detected on the Property was Yellow-banded Bumblebee, which was confirmed near Waterbody 1. The species is common in northwestern Ontario.

2.12 HUMAN ENVIRONMENT

The Project is located southwest of the Municipality of Red Lake which is one of the larger municipalities in Kenora District and is comprised of the Golden Township, Red Lake Township, and the Unorganized Territory. The total population in Red Lake was approximately 4,094, according to the 2021 Canadian Census. The land use in Red Lake is primarily rural with five serviced townsites: Red Lake, Balmertown, Cochenour, Madsen and McKenzie Island. Development in Red Lake is limited to these townsite locations. Of these townsites, Red Lake is the largest settlement area. There are also three non-serviced residential settlements, which accommodates rural residential subdivisions (Municipality of Red Lake 2022).

The Township of Ear Falls to the east of the Project is also located in the Kenora District, approximately 37 km from the Project. Ear Falls consists of an urban area north of the English River and rural areas, including both cottages and year-round residences along Lac Seul and the English River.

The Project is also located within Treaty No. 3. Project facilities will not be located on or near First Nation Reserves. The closest Reserve lands are located the following distances away cross country: Wabauskang Reserve - 56 km; Asubpeeschoseewagong Netum Anishinabek Reserve - 77 km; and Lac Seul Reserve - 101 km. The Project is located within the Northwestern Ontario Métis Community (Region 1) area, in northwestern Ontario.

- Lac Seul First Nation (LSFN) is comprised of 3,689 members as of May 2022, with two thirds of population living off-Reserve (CIRNAC 2022a). Historically, the main community resided near Keesic Bay on the north shore of Lac Seul, the community has various fishing camps and traplines throughout the region (Lac Seul First Nation 2019).
- Wabauskang First Nation (WFN) is situated on the east shores of Wabauskang Lake. Wabauskang First Nation had a total registered population of 366 as of May 2022 (CIRNAC 2022b).
- Asubpeeschoseewagong Netum Anishinabek First Nation is an Ojibway community located 70 km east of Kenora. The registered population was approximately 1,602 members as of May 2022 (CIRNAC 2022c).
- The Project site is within Region 1 of the Northwestern Ontario Metis Community (NWOMC). The NWOMC is a governing member of the Métis National Council and focuses on representing and promoting the interests of Ontario's Métis Peoples. The Municipality of Red Lake had 350 self-identifying Métis individuals (Statistics Canada 2023b).

In the broader Kenora District, health care and social assistance sector makes up the largest workforce. In the municipalities and communities within the region; however, the workforce also includes larger numbers working in the mining sector. Non-traditional land uses include recreational fishing and boating, fly-in cabins, portage routes, snowmobile trails, hunting, and trapping.

Table 2-1: Onsite Meteorological Data Summary

Parameter	Jan	Feb	Mar	Apr	May	June	Jul	Aug	Sept	Oct	Nov	Dec
Mean Temperature (°C)	-13.1	-12.2	-8.9	1.1	11.1	16.0	17.4	16.5	12.9	4.5	-3.8	-10.7
Mean Daily High (°C)	-10.3	-6.7	-3.0	7.0	17.9	22.6	23.9	22.4	18.6	9.3	-0.64	-7.4
Mean Daily Low (°C)	-16.4	-17.9	-14.8	-4.3	4.5	10.0	11.5	11.2	7.9	0.5	-7.1	-14.3
Maximum Temperature (°C)	5.2	4.0	12.5	19.4	31.0	33.8	31.9	30.2	31.1	24.5	17.7	3.8
Minimum Temperature (°C)	-33.6	-34.7	-26.1	-15.7	-2.3	1.8	5.0	6.2	-3.5	-9.7	-22.8	-33.2
Precipitation (mm) [3]	3.7	20.7	21.1	43.4	68.6	144.5	88.3	123.8	79.4	39.3	36.2	22.1
Mean Daily Evaporation (mm) [2]	—	—	—	—	4.3	4.6	4.5	2.7	2.2	1.8	—	—
Mean Wind Speed (km/h)	4.2	5.9	6.4	6.5	6.6	5.2	4.8	4.6	5.4	5.5	6.2	5.8
Most Frequent Wind Direction	NW	NW	NW	E	E	S	NW	NW	S	W	NW	S
Maximum Wind Speed (km/h)	19.5	21.2	24.6	26.0	25.3	23.3	21.0	20.8	24.3	23.8	22.3	21.9
Direction of Maximum Wind Speed	W	SW	E	E	SE	E	W	S	SW	SW	NW	NW
Mean Solar Irradiance (W/m^2) [4]	18.1	58.6	118.0	157.5	187.4	169.7	173.9	158.0	108.5	67.9	27.6	13.7
Maximum Solar Irradiance (W/m^2) [4]	407.1	726.0	887.0	1045.0	1121.0	983.0	970.0	948.0	951.0	755.3	538.8	221.1
Mean Barometric Pressure (mmHg) [1]	721.4	719.6	722.7	721.6	722.0	720.8	721.2	723.1	722.4	721.1	718.8	721.1
Mean Relative Humidity (%)	87.6	78.2	68.0	63.8	65.2	74.4	75.0	80.3	84.2	83.9	85.6	86.9

Notes:

From 5-minute averaging source data. Data from September 2022 – November 2024.

1 Barometer experienced abnormally low readings in November 2023

2 Class A Evaporation, only 2023 evaporation data is included, gauge experienced unreliable measurements in 2024.

3 Precipitation gauge heater failed in autumn of 2023, was temporarily replaced in January 2024, temporary gauge measured high precipitation values in August and September 2024 when compared to Ear Falls (Figure A-25). Temporary gauge was replaced in October 2024.

4 Solar irradiance sensor was replaced in summer of 2024.

5. Source: WSP (2025a)

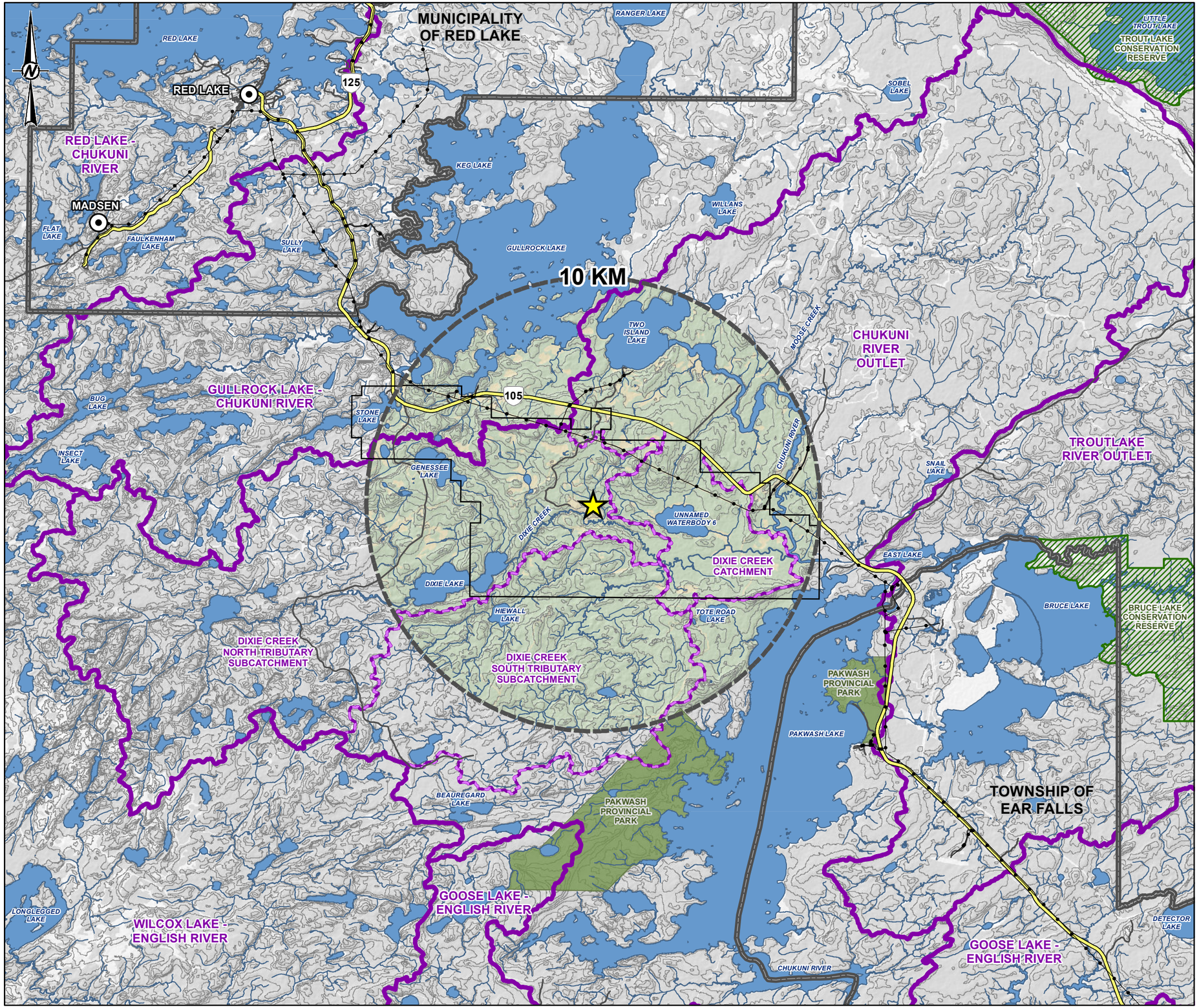
Table 2-2: Monthly and Annual Flow Statistics for Chukuni River Upstream of Dixie Creek (05QC001)

	Flow (m^3/s)													Mean Annual Runoff (mm)
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Mean	
Mean	17.7	14.8	14.0	22.3	50.5	57.1	46.2	32.1	31.0	29.8	27.1	21.5	30.4	195
5th	5.83	5.95	6.60	7.26	6.58	9.85	11.00	6.57	3.19	2.50	6.56	6.51	6.23	39.9
95th	32.3	27.8	22.4	57.2	105.0	108.0	93.4	81.2	89.5	79.0	71.9	53.0	85.8	550

Table 2-3: Summary of Monthly Flow Statistics along Dixie Creek

	Flow (m^3/s)												
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
WSC Long-Legged River (548 km^2)													
Mean	2.13	1.84	1.63	2.55	5.86	7.20	6.05	4.00	3.13	2.88	2.69	2.39	3.53
5th%	0.61	0.59	2.55	1.01	1.48	1.73	1.49	0.97	0.62	0.45	0.40	0.53	0.65
95th%	3.94	3.02	2.55	6.16	12.6	15.1	13.3	8.96	9.15	8.22	6.64	4.92	10.5
Dixie Creek U/S of Unnamed Waterbody 1 (188 km^2)													
Mean	0.90	0.78	0.69	1.08	2.49	3.06	2.57	1.70	1.33	1.23	1.14	1.01	1.50
5th%	0.26	0.25	1.08	0.43	0.63	0.73	0.63	0.41	0.26	0.19	0.17	0.23	0.27
95th%	1.67	1.28	1.08	2.62	5.36	6.42	5.65	3.81	3.89	3.49	2.82	2.09	4.46
Dixie Creek U/S of Tributary 3 (HF-03) (201 km^2)													
Mean	0.96	0.83	0.73	1.14	2.63	3.24	2.72	1.80	1.41	1.29	1.21	1.07	1.58
5th%	0.27	0.26	1.15	0.45	0.66	0.78	0.67	0.44	0.28	0.20	0.18	0.24	0.29
95th%	1.77	1.36	1.15	2.77	5.66	6.78	5.97	4.02	4.11	3.69	2.98	2.21	4.72
Dixie Creek at Tote Road (HF-01) (357 km^2)													
Mean	1.51	1.30	1.16	1.81	4.16	5.12	4.30	2.84	2.22	2.05	1.91	1.69	2.51
5th%	0.43	0.42	1.81	0.72	1.05	1.23	1.06	0.69	0.44	0.32	0.29	0.38	0.46
95th%	2.80	2.14	1.81	4.37	8.95	10.72	9.44	6.36	6.49	5.83	4.71	3.49	7.46

Note: monthly flows for the three selected locations on Dixie Creek were prorated from WSC Long-Legged River data



LEGEND

- APPROXIMATE OPEN PIT CENTROID
- OPEN PIT CENTROID BUFFER (LABELED ON MAP)
- PROPERTY BOUNDARY
- TOWN
- PROVINCIAL PARK
- CONSERVATION RESERVE
- EXISTING TRANSMISSION LINE
- HIGHWAY
- LOCAL ROAD
- LOWER TIER MUNICIPAL BOUNDARY
- WATERCOURSE
- WATERBODY
- CONTOURS (10 M INTERVAL)
- QUATERNARY CATCHMENT
- DIXIE CREEK SUBCATCHMENT

0 2.5 5 10

1:170,000 KILOMETRES

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)

1. CONTAINS INFORMATION LICENSED UNDER THE OPEN GOVERNMENT LICENCE - ONTARIO
2. WATERCOURSES AND WATERBODY ACQUIRED FROM LAND INFORMATION ONTARIO (MNRF) AND MODIFIED TO MATCH AERIAL IMAGERY AND LIDAR.
3. ROADS INFORMATION PROVIDED BY GREAT BEAR RESOURCES, AUGUST 2022.
4. PROPERTY BOUNDARY PROVIDED BY GREAT BEAR RESOURCES, AUGUST 2024.
5. COORDINATE SYSTEM: NAD 1983 UTM ZONE 15N

CLIENT
GREAT BEAR RESOURCES

PROJECT
GREAT BEAR PROJECT

TITLE
GREAT BEAR PROJECT LOCAL TOPOGRAPHY AND WATERSHEDS

CONSULTANT

wsp

YYYY-MM-DD	2025-07-24
DESIGNED	----
PREPARED	MD
REVIEWED	HL
APPROVED	DR

PROJECT NO.	CONTROL	REV.	FIGURE
CA0031271	0001	A	2-1

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3 CONSULTATION

Engagement input was incorporated into the alternative assessment process for the mine waste storage alternatives assessment. Great Bear Resources provided information to local Indigenous Nations regarding the alternatives and sought feedback on the potential alternatives for inclusion. Key comments provided by government agencies and Indigenous Nations are summarized below.

Engagement activities that included presenting Project alternatives including for mine waste occurred in June 2023 as well as January, March, May and June of 2024.

- Community meeting in LSFN and WFN, June 12 and 13, 2023
- Environmental Management Committee meeting, LSFN and WFN, January 15, 2024
- Community open house, Township of Ear Falls and Municipality of Red Lake, March 18 and 20, 2024
- Community meeting in LSFN, June 17 and 18, 2024
- Community open house, Township of Ear Falls and Municipality of Red Lake, March 19 and 20, 2025
- Community presentation, Regional Consultation Committee, NWOMC, March 19, 2024
- Presentation to LSFN and WFN technical review team on tailings management, May 22, 2025
- Community presentation (NWOMC), June 11, 2025.

Both WFN and LSFN expressed interest in understanding how the proposed Project would affect the surrounding lands. Birds landing on the TMF was an environmental concern noted. The process plant includes a cyanide destruction circuit to lower cyanide concentrations to a level that is protective of the environment prior to storage in the TMF.

Potential accidents and malfunctions, particularly related to the TMF have also been raised as topics of concern (WFN / LSFN technical review team and confidential Indigenous knowledge report prepared for WFN). The potential for accidents and malfunctions that may have a material effect on the mine waste storage alternatives was considered as part of the MAA.

Asubpeeschoseewagong Netum Anishinabek has also expressed concerns regarding the potential for changes to groundwater and surface water, and in particular water quality in the receiving environment at a result of the Project.

The selection of a location for the TMF is a key component of the MAA. The following key topics of interest were identified and incorporated into the MAA as a result of consultation input.

- Water (waterbodies and watercourses): Environmental account
- Plants (terrestrial footprint): Environmental account
- Fish (loss of fish habitat): Environmental account
- Wild rice: Socio-economic account
- Moose: Socio-economic account
- Caribou habitat: Environmental account
- Loss of Indigenous trapping: Socio-economic account
- Loss of traditional foods: Socio-economic account.

Potential accidents and malfunctions will be assessed in the Impact Statement for the Project and will include dam breach scenarios. A spills prevention and emergency response plan will also be in place prior to construction. Kinross are experienced in managing tailings facilities around the world, as presented in the Tailings Disclosure and Sustainability Reports.

The process plant includes a cyanide destruction circuit to lower the cyanide concentrations to a level that is protective of the environment prior to storage. The target concentration of total cyanide in the tailings after the cyanide destruction circuit in the process plant will be within the parameters governed by the International Cyanide Management Code (ICMI 2021), which Great Bear Resources plans to be compliant with, and the residual cyanide concentrations will naturally degrade when exposed to sunlight within the TMF.

Great Bear Resources are committed to managing tailings according to the Mining Association of Canada guidance (MAC 2021) and the Canadian Dam Association guidelines (CDA 2013; 2019), as well as the implementation of the Global Industry Standard on Tailings Management (ICMM, 2020) and the Mining Association of Canada Towards Sustainable Mining (MAC 2021) program.

Great Bear Resources also has in place an Independent Tailings Review Panel for Project oversight. The independent board of experts has been retained to review and advise on the design, construction, operation, performance and closure of the planned tailings management facility. The Board was established early, well in advance of construction to provide review and advice from detailed design through to closure.

Great Bear Resources provided a draft version of the Great Bear Project Mine Waste Alternatives Assessment to ECCC for their review and comment on September 25, 2025. Feedback was received from ECCC on December 2, 2025. The comments and feedback provided by ECCC on the draft version were incorporated into in this document as appropriate.

4 METHODOLOGY

The methodology utilized to assess mine waste alternatives follows from and is intended to be compliant with that prepared by ECCC (2016). Separate assessments of alternatives are provided for the storage facilities required for tailings, mine water, mine rock and overburden. The steps below are identified within the text that follows:

- Step 1: Identify Candidate Alternatives
- Step 2: Pre-screening
- Step 3: Alternative Characterization
- Step 4: Multiple-accounts Ledger
- Step 5: Value-based decision process
- Step 6: Sensitivity Analysis
- Step 7: Document Results.

4.1 STEP 1: IDENTIFICATION OF CANDIDATE ALTERNATIVES FOR MINE WASTES

The first stage of the assessment of alternatives is to determine possible mine waste disposal alternatives. A preliminary assessment is conducted to develop a list of all possible candidate alternatives, including different disposal technologies, storage options and locations, without making a priori judgements based on specific criteria. A basic set of threshold criteria may be established to set regional boundaries for this step, such as exclusion based on distance or the presence of protected areas.

4.2 STEP 2: PRE-SCREENING

The pre-screening assessment allows those alternatives that do not meet minimum specifications to be removed from the assessment process. By not meeting these minimum requirements, the alternative is considered to contain a fatal flaw that is so unfavorable or severe that it eliminates the disposal method or site as a candidate for mine waste disposal alternative. Pre-screening criteria are formulated such that a yes or no response is possible. There must be no reasonable mitigation strategy that would eliminate a fatal flaw.

The deliverable for the pre-screening assessment is a summary table which shows all candidate alternatives and whether they are carried forward to the characterization step or eliminated based on the fatal flaw analysis.

4.3 STEP 3: ALTERNATIVES CHARACTERIZATION

The reduced number of alternatives remaining after the pre-screening assessment are then characterized to:

- Properly consider all aspects of the alternative
- Allow direct comparison between alternatives, ensuring complete transparency of the alternatives assessment process.

As described in the ECCC Guidelines (ECCC 2016), there is no ideal number of alternatives that should be carried through, but there should be at least three or more alternatives remaining and determined to

be worthy of detailed assessment. At least one of these alternatives should not impact a natural waterbody that is frequented by fish, unless it can be demonstrated that this possibility does not reasonably exist based on site-specific circumstances.

Alternatives are characterized based on environmental, technical, project economic and socio-economic categories (accounts). Characterization criteria are selected by a multidisciplinary team representative of the above accounts.

Deliverables for the alternatives characterization include a description of each alternative, and a table of environmental, technical, project economic and socio-economic criteria.

4.4 STEP 4: MULTIPLE ACCOUNTS LEDGER

Preliminary screening of alternatives can be used to eliminate alternatives with any fatal flaws, which can occur with minimal judgement. However, evaluation criteria used in the MAA considers the material impact, such as a benefit or loss, associated with each alternative.

A multiple accounts ledger includes a three-level hierarchy comprised of accounts, sub-accounts and indicators. Accounts identify the general area of consideration and include:

- Environmental
- Technical
- Project Economics
- Socio-economic.

4.4.1 ACCOUNTS, SUB-ACCOUNTS AND INDICATORS

Each account is split into evaluation criteria (sub-accounts) that are used to determine the level of impact to the account. For example, an environmental account could contain sub-accounts that include terrestrial ecosystem impacts, aquatic ecosystem impacts, impacts to groundwater and impacts to air quality. Sub-accounts should conform to the following criteria detailed by ECCC (2016):

- Sub-accounts need to be impact driven
- The sub-account must differentiate one alternative from another
- The sub-account must be relevant to the account
- The sub-account must be understandable, and unambiguously defined for clarity
- Sub-accounts must not be redundant
- Sub-accounts should be judgmentally independent.

While sub-accounts measure impacts between the alternatives, they are often not easy to quantify and rank in a transparent manner. Measurement criteria (indicators) allow qualitative or quantitative measurement of the impact associated with each sub-account.

For the purposes of this MAA, each indicator has a six-point scale established that details how an alternative is valued, as suggested in the ECCC Guidelines (ECCC 2016). Based on professional experience with other assessments of alternatives, for indicators measured by quantitative data, the six-point scale is set up to reflect and maximize the relative differences between each alternative. Typically, this results in one alternative with the best indicator value of six, one alternative with the lowest indicator value of one, while the remaining alternative is somewhere in the middle of the scale depending on its relative characteristics.

Qualitative scales are set up to cover a wider range of scenarios for added clarity. Typically, this results in the alternatives tending to have values towards the middle of the scale.

Deliverables for the multiple accounts ledger include a comprehensive list of accounts, sub-accounts and indicators, including rationale for selection, and six-point value scales for each of the indicators.

4.5 STEP 5: VALUE-BASED DECISION PROCESS

The value-based decision process uses accounts, sub-accounts and indicators to qualitatively and quantitatively assess the environmental, technical, economic and socio-economic factors and comparatively score the potential alternatives.

4.5.1 SCORING

Each alternative is assigned a value for each indicator ranging from one to six. A six is assigned when the alternative meets the best criteria on the indicator scoring, and likewise a one is assigned when the alternative meets the worst criteria.

The deliverable for scoring is a summary table of values determined for each indicator.

4.5.2 WEIGHTING

Great Bear Resources and a team of experienced technical professionals consisting of engineers, geoscientists and environmental specialists determined appropriate weightings of the mine waste alternatives, taking into consideration information gathered. Weights were applied to each sub-account and indicator on a scale of one to six based on the relative importance of each sub-account and indicator. A weight of two is considered twice as important as a weight of one, likewise, a weight of four is twice as important as a weight of two. By design of the scale, no sub-account or indicator can be weighted more than six times more important than another sub-account or indicator. Where sub-accounts and indicators had less influence in differentiating two or more alternatives, the weightings were reduced, where appropriate, so as not to overemphasize these particular sub-accounts and indicators.

4.5.3 INDICATORS AND SUB-ACCOUNTS

The weights of indicators are comparable within each individual sub-account and cannot influence separate sub-accounts. Sub-account weights are only applicable within a given account and are not comparable across accounts (e.g., a Technical Account indicator with a weight of six is not necessarily six times more important than an Economic Account indicator with a weight of one).

The deliverable for weighting is a summary table of all weights assigned to the sub-accounts and indicators, including rationale for the selection of each weight.

4.5.4 ACCOUNTS

The base case account weights as suggested by ECCC (2016) are as follows:

- Environment - 6
- Technical - 3
- Project Economics - 1.5
- Socio-economic - 3.

As provided in the ECCC Guidelines, the base case includes weighting the Environment account twice as important as the Technical and Socio-economic accounts, which in turn are weighted twice as important as the Project Economics account.

4.5.5 QUANTITATIVE ANALYSIS

As described below, the MAA follows the methodology provided by ECCC (2016).

For each indicator, the indicator value (S) of each alternative is listed in one column. The weighting factor (W) is listed in another column and the combined indicator merit score (S × W) is calculated as the product of these values.

Indicator merit scores can be directly compared across alternatives, and likewise sub-account merit scores (Σ{S × W}) can be directly compared across alternatives. However, to allow comparison of these values against values for other sub-accounts, the scores must be normalized to the same six-point scale used to score each indicator value. This is achieved by dividing the sub-account merit score by the sum of the weightings (ΣW) to yield a sub-account merit rating (Rs = (Σ{S × W} / ΣW). This will again be a value between one and six. This normalization is necessary to balance out different numbers of indicators and sub-accounts for each account. Without this normalization, the number of indicators associated with each sub-account, and the number of sub-accounts associated with each account, would have to be identical, otherwise the analysis will be skewed by accounts with more sub-accounts or indicators.

The same procedure of weighting and normalization is followed to determine account merit scores (Σ{Rs × W}), and account merit ratings (Ra = Σ(Rs × W) / ΣW). This process is repeated one final time, and an alternative merit score (Σ{Ra × W}), and an alternative merit rating (A = Σ(Ra × W) / ΣW), is determined for each of the alternatives

The deliverables for the quantitative analysis are summary tables showing calculations for the sub-account merit ratings, account merit ratings and alternative merit ratings.

4.6 SENSITIVITY

In addition to the base case, additional sensitivities are considered in order to evaluate the robustness of the analytical process and to determine the degree to which various options may be influenced by the choice of weightings.

4.7 DOCUMENT RESULT

Document results and findings from the alternatives assessment. The results from the MAA can be found in the following sections:

- Tailings Storage:
  - Tailings Management Facility (TMF) Results: Section 5.5
  - Sensitivity Analysis: Section 5.6
- Mine Rock Storage:
  - Mine Rock Stockpile (MRS) Results: Section 6.5
  - Sensitivity Analysis: Section 6.6
- Low Grade Ore Storage:
  - Low Grade Ore Stockpile (LGO) Results: Section 7.5
  - Sensitivity Analysis: Section 7.6
- Mine Water Storage:
  - Mine Water Pond (MWP) Results: Section 8.5
  - Sensitivity Analysis: Section 8.6

- Overburden Storage:
  - Overburden Stockpile (OVB) Results: Section 9.5
  - Sensitivity Analysis: Section 9.6.

5 TAILINGS MANAGEMENT FACILITY

5.1 STEP 1: CANDIDATE TMF ALTERNATIVES

The *Great Bear Resources Environmental Management System for Tailings (Standard 10.07*; EMS for Tailings*) r*equires that tailings management facilities be physically and chemically stable and that the quality of seepage or surface runoff does not endanger groundwater, surface water, human health or the environment. Consistent with this environmental management strategy, Great Bear Resources has decided to incorporate desulphurization into their process flow sheet to produce two tailings streams: a desulphurized tailings that will be NPAG and a lower quantity, PAG concentrate tailings stream.

Where practical, Great Bear Resources propose to reuse their tailings in paste backfill for the underground workings. This has the environmental advantage of reducing the quantity of tailings that require storage on surface.

In summary, approximately 80.54 Mt of tailings will be produced by the Project. Of this total, approximately 25.72 Mt will be pumped into the underground mining workings and remain as paste backfill, leave the following tailings volumes for storage on surface:

- Desulphurized tailings: 51.53 Mt
- Concentrate tailings: 3.29 Mt.

The Viggo pit will be fully developed during the construction phase to provide rock to support Project construction including TMF dams. Ore excavated from the Viggo pit will be temporarily stored on the surface until ore processing commences. At the end of the construction phase when fully excavated, the Viggo pit provides a large storage opportunity for mine wastes and mine water. Re-use of Viggo pit for storage of mine wastes is consistent with the Great Bear Resources approach to environmental management. Concentrate tailings will be permanently stored in the east Viggo management facility (VMF); formerly the Viggo pit. The concentrate tailings will be transferred by a pipeline from the process plant to the east VMF. The pipeline will be constructed within a gravity draining ditch that ultimately drains to the east VMF, so that in the event of a pipeline failure the concentrate tailings will flow to the east VMF. There are no watercourses or waterbodies at the location of the Viggo pit (or subsequent east VMF and west VMF proposed for reject solution storage). Accordingly, an alternatives assessment for the storage of the concentrate tailings in the east VMF in support of a Schedule 2 listing is not discussed further in this document.

The remaining 51 Mt of desulphurized tailings will be stored on the surface in a TMF, and may require a Schedule 2 listing, depending on the alternative location selected. The TMF dam(s) will be designed to align with the best practices including Mining Association of Canada *A Guide to the Management of Tailings Facilities Version 3.2* (MAC, 2021), Canadian Dam Association *Dam Safety Guidelines* (CDA, 2013) and *Technical Bulletin: Application of Dam Safety Guidelines to Mining Dams* (CDA, 2019), Ministry of Natural Resources (MNR) and in accordance with the Great Bear Resources EMS for Tailings.

An engineering study was completed in 2023 to identify potential alternative TMF siting locations (WSP 2023c). The siting study identified a total of 15 potential candidate locations for the TMF shown in Figure 5-1:

- Alternative A: is located northwest of the LP Central pit and situated in both the Gullrock Lake – Chukuni River catchment and the Dixie Creek north tributary subcatchment and is sited within a 10 km buffer from the centroid of the LP Central pit
- Alternative B: is located southwest of the LP Central pit and predominantly located in the Dixie Creek north tributary subcatchment and is greater than 10 km from the centroid of LP Central pit

- Alternative C: is sited west of the LP Central pit and is predominantly situated in the Dixie Creek north tributary subcatchment. Alternative C is located greater than 10 km from the centroid of the LP Central pit
- Alternative D: is situated northwest of the LP Central pit and is predominantly sited in the Gullrock Lake – Chukuni River catchment with a small portion of the proposed TMF footprint located in the Dixie Creek north tributary subcatchment
- Alternative E: is located northwest of LP Central pit and is sited in the Dixie Creek north tributary subcatchment
- Alternative F: is located immediately north of the LP Central pit and is situated in both the Dixie Creek north tributary subcatchment and the Dixie Creek catchment
- Alternative G: is situated west of the LP Central pit, southeast of Genessee Lake, north of Dixie Lake and is wholly within the Dixie Creek north tributary subcatchment
- Alternative H: is sited in the Dixie Creek north tributary subcatchment area located with the west of LP Central pit, north of Dixie Lake and south of Genessee Lake
- Alternative I: is predominantly located in the Dixie Creek catchment and is east of LP Central pit and southwest of Unnamed Waterbody 6
- Alternative J: is designed to not overprint waterbodies and watercourses that are frequented by fish and is located in the Dixie Creek north tributary subcatchment in between Genessee Lake and Dixie Lake, west of the LP Central pit. Alternative J does not overprint waterbodies or watercourses that may be frequented by fish
- Alternative K: is situated over 10 km to the east of LP Central pit in between Bruce Lake and Pakwash Lake in the Troutlake River outlet catchment
- Alternative L: is located more than 10 km southwest of LP Central pit and predominantly within the Dixie Creek north tributary catchment
- Alternative M: is located over 10 km west of the LP Central pit and is wholly situated in the Dixie Creek north tributary subcatchment
- Alternative N: is located south of the LP Central pit and is situated in the Dixie Creek south tributary subcatchment. A portion of Alternative N overprints Pakwash Provincial Park
- Alternative O: is sited south of the LP Central pit and Dixie Creek and is in the Dixie Creek south tributary subcatchment.

The TMF dams developed for all the TMF candidate alternatives will be designed to align with the best practices including Mining Association of Canada Tailings Guide (MAC 2021), Canadian Dam Association (CDA 2013, 2019), MNR and in accordance with the Great Bear Resources EMS for Tailings.

The following threshold criteria were established to set regional boundaries for selecting a reasonable number of potentially feasible candidate locations to carry forward to the alternatives assessment for the TMF:

- Exclusion based on distance: distances greater than 10 km from the centroid of the LP Central pit will result in a larger Project footprint, greater adverse effects to the environment (greenhouse gas emissions, increased disturbed footprint, greater number of water crossings, etc.) and will also adversely affect the Project economics. Candidate locations greater than 10 km from the centroid of the LP Central pit were not considered further
- Exclusion based on proximity to provincial parks: TMF locations within 500 m from the Pakwash Provincial Park were not considered further.

Of the original 15 potential candidate locations, five were excluded from further consideration based on the threshold criteria of distance (alternatives B, C, K, L and M). Selection of any of these five locations will unnecessarily increase the footprint of the Project without offering any material technical advantage and would adversely affect the environment compared to alternatives that are situated closer to the

centroid of LP Central pit. Alternative N is partially located within the Pakwash Provincial Park and was also excluded from further consideration in the alternatives assessment.

The remaining Alternatives A, D, E, F, G, H, I, J and O are described in the text that follows and were carried forward to the pre-screening assessment phase (Section 5.2). Alternative J was developed to not overprint waterbodies and watercourses that are frequented by fish.

5.1.1 ALTERNATIVE A

Alternative A is wholly situated on the Property as illustrated in Figure 5-1 and is about 5.4 km northwest of the LP Central pit, north of Genesse Lake. Alternative A is located in two subcatchments, with the eastern portion of Alternative A sited in the Dixie Creek north tributary subcatchment, while the western portion of the Alternative A footprint in the Gullrock Lake - Chukuni River catchment.

The total tailings surface footprint of Alternative A is about 439 ha. The desulphurized tailings will be contained by natural topography and eight dams. The Alternative A dams are anticipated to be constructed with a downstream slope of 3H:1V and will have a maximum height of 46 m. Alternative A covers an area with moderate potential mineralization targets for future mining activities (WSP 2023c).

5.1.2 ALTERNATIVE D

Alternative D is fully located within the Property as illustrated in Figure 5-1 and is about 6.6 km northeast from the LP Central pit, north of Genesse Lake. Alternative D is sited in a single catchment; the Gullrock Lake-Chukuni River catchment which drains towards Gullrock Lake, before ultimately reporting to the Chukuni River.

The construction of the Alternative D TMF will require seven dams with a maximum dam height of 58 m with an assumed downstream dam side slope of 3H:1V. The total tailings surface footprint for the Alternative D TMF is about 222 ha. Alternative D is anticipated to overprint areas with moderate potential mineralization targets for future mining activities (WSP 2023c).

5.1.3 ALTERNATIVE E

Alternative E is within the Property as shown in Figure 5-1 and is about 4.9 km northwest of LP Central pit. The proposed siting for Alternative E is solely located in Dixie Creek north tributary catchment draining towards Dixie Creek and ultimately reporting to the Chukuni River.

The construction of the TMF at the Alterative E location will require three dams with a maximum dam height of 18 m and are anticipated to be constructed with a downstream dam side slopes ranging from 2H:1V to 10H:1V. Flatter slopes are assumed to be required based for poorer foundation conditions that have been identified. The total tailings surface footprint for the Alternative E TMF is about 312 ha. Based on the constraints map provided by Great Bear Resources, Alternative E is indicated to overprint areas with high potential mineralization targets for future mining activities (WSP 2023c).

5.1.4 ALTERNATIVE F

Alternative F is wholly situated on the Property illustrated in Figure 5-1 and is about 1.7 km directly north from the LP Central pit. Alternative F is sited in two subcatchment areas of Dixie Creek. The western portion of Alternative F drains towards Dixie Creek while the eastern portion drains towards Dixie Creek via Unnamed Waterbody 6.

The construction of the TMF at the Alterative F location will require four dams with a maximum dam height of 46 m with an assumed downstream dam side slope of 10H:1V (WSP 2023c). The total tailings surface footprint for the Alternative F TMF is about 423 ha. Based on the constraints map provided by Great Bear Resources, Alternative F will overprint areas with moderate potential mineralization targets for future mining activities (WSP 2023c, 2024a). Alternative F also overprints the current site access and existing local aggregate pit lands and proposed development of other infrastructure facilities including the effluent pipeline.

5.1.5 ALTERNATIVE G

Alternative G is partially sited on the Property as shown in Figure 5-1 and is about 4.5 km from the LP Central pit. Alternative G is situated north of Dixie Lake and southeast of Genessee Lake and is wholly within the Dixie Creek north tributary subcatchment.

The construction of the TMF at the Alterative G location will require three dams with a maximum dam height of 45 m with an assumed downstream dam side slope of 10H:1V due to assumed poorer foundation in the area based on available mapping. The total tailings surface footprint for the Alternative G TMF is about 271 ha. Alternative G is indicated to overprint areas with potential mineralization targets for future mining activities (WSP 2023c).

5.1.6 ALTERNATIVE H

Alternative H is situated fully outside of the Property as shown in Figure 5-1 and is approximately 8.8 km west from LP Central pit. Alternative H is located north of Dixie Lake and south of Genessee Lake is wholly within the Dixie Creek north tributary subcatchment as shown in Figure 5-1.

The construction of the TMF at the Alterative H location will require two dams with a maximum dam height of 26 m with an assumed downstream dam side slope of 10H:1V. The total tailings surface footprint for the Alternative H TMF is about 503 ha. Alternative H does not overprint areas any areas with potential mineralization targets for future mining activities (WSP 2023c).

5.1.7 ALTERNATIVE I

Alternative I is predominantly situated on the Property as illustrated in Figure 5-1 and is about 4.9 km southeast of the LP Central pit. Alternative I is generally located in the Dixie Creek catchment with a small portion of the footprint located in the Pakwash Lake catchment.

The construction of the TMF at the Alterative I location will require one dam with a maximum dam height of 37 m with an assumed downstream dam side slope of 10H:1V. The total tailings surface footprint for the Alternative I TMF is about 333 ha. Alternative I is indicated to overprint areas with high potential mineralization targets for future mining activities (WSP 2023c).

5.1.8 ALTERNATIVE J

Alternative J is situated outside the Property as illustrated in Figure 5-1 and is approximately 7.5 km west of LP Central pit, south of Genessee Lake and north of Dixie Lake. Alternative J does not overprint waterbodies or watercourses that may be frequented by fish and is situated in the Dixie Creek north tributary subcatchment.

The construction of a TMF at the Alternative J location will require a ring dam with a maximum height of 60 m and an assumed downstream dam slope of 3H:1V. The total tailings surface footprint for Alternative J is about 188 ha.

5.1.9 ALTERNATIVE O

TMF Alternative O is wholly sited within the Property as shown in Figure 5-1. Alternative O is located approximately 2.3 km south of LP Central pit and is situated east of Dixie Lake. The proposed siting of Alternative O is in the Dixie Creek catchment.

The construction of Alternative O is anticipated to require three dams with a maximum height of about 33 m and downstream side slopes of 10H:1V. Alternative O will have a total tailings surface footprint of about 490 ha.

5.2 STEP 2: PRE-SCREENING ASSESSMENT OF TMF ALTERNATIVES

The pre-screening criteria for the TMF candidate alternatives are:

- Do the alternatives avoid areas that could pose a safety risk to the public or works [1]? (yes / no)
- Do the alternatives avoid overprinting existing commercial aggregate operations? (yes / no).

Based on these pre-screening criteria, one alternative was excluded (Alternative F) as presented in Table 5-1.

As illustrated in Figure 5-1, Alternatives A, D and E are in a similar location, overprint each other, and all overprint waterbodies and watercourses that may be frequented by fish. As these alternatives overlap each other, of the three alternatives, Alternative E was advanced for the MAA for following reasons:

- Alternative E is located in located in the Dixie Creek north tributary subcatchment which is the same subcatchment area where LP Central pit and the supporting key mine infrastructure (i.e., process plant) will be located
- The Alternative E footprint is nearest other Project infrastructure resulting in the overall smallest footprint compared to Alternative A and Alternative D
- Alternative E is closest to the process plant which will reduce road and pipeline requirements compared to Alternative A and Alternative D.

Therefore, Alternatives E, G, H, I, J and O were carried forward in the MAA. These candidate alternatives are briefly summarized by Project phase in Table 5-2.

5.3 STEP 3: TMF ALTERNATIVES CHARACTERIZATION

At the outset, a total of 15 alternatives were identified for the TMF mine waste alternatives assessment. Following establishment of the threshold criteria, this was further reduced to nine alternatives. Through the pre-screening process and rationale described in Section 5.2.1, the total alternatives were further reduced to six alternatives for consideration in the MAA. The remaining six alternatives are described in the following subsections.

The alternatives were developed to support ranking and consideration in the MAA with the purpose of identifying a preferred alternative. The rationale for the subaccounts and indicators used in the MAA for the TMF are summarized in Table 5-3.

[1] It is noted that the risk to worker safety in LP Central pit is greater for the TMF scenario in which tailings and liquids, in the event of a dam breach, could quickly travel into the open pit. However, other solid mine wastes such as overburden and mine rock do not pose a risk as these materials do not travel to the extent of tailings and liquids and minor slope failures would be restricted to an area upgradient from the LP Central pit.

5.3.1 ALTERNATIVE E

Alternative E, which is inclusive of Alternative A and D, is located about 4.9 km northwest from LP Central pit and is wholly situated on the Property as shown in Figure 5-2. The Alternative E TMF footprint is sited in a single catchment that drains to Dixie Creek which ultimately reports to the Chukuni River.

Alternative E is anticipated to have a total footprint of about 344.7 ha and is designed to store up to 52 Mm^3 of desulphurized tailings. Alternative E will use natural topography and the construction of three dams to provide containment for the Project desulphurized tailings. The three dams are anticipated to have a total length of 5,568 m with a maximum height and elevation of 18 m and 418 masl, respectively. The dam footprint will be about 33 ha and as the dams are anticipated to be constructed on variable foundation, the following side slopes are anticipated requiring about 3.6 Mm^3 of fill material:

- South dam: 10H:1V
- North and west dams: 2H:1V or 3H:1V (WSP 2024a).

To support construction of the dams, suitable mine rock will be transferred from the open pits (LP Central pit and Viggo pit) via a haul road to the TMF connecting to the eastern side of the south dam. During the construction phase, roads as shown in Figure 5-2 will be used to transport rock to the TMF for dam construction The tailings pipelines and associated pipeline road will be constructed from the process plant to the northeastern corner of the north TMF dam (Figure 5-2). The road will be constructed along the tailings pipeline alignment and in addition to supporting construction this road will also be used for monitoring, maintenance and TMF access.

Contact water from the TMF (i.e., runoff from the surface and dams) will be managed using natural topography, perimeter ditches and seepage collection sumps. For the purposes of the MAA, seepage collection sumps were assumed to be in the low-lying areas around Alternative E. It is anticipated that four seepage collection sumps will be required and as illustrated in Figure 5-2.

As shown in Figure 5-3, Alternative E overprints the following waterbody and watercourses:

- Unnamed Waterbody 4
- Unnamed Watercourse 1A
- Unnamed Watercourse 1B (and associated small tributaries).

Compensation and offsetting (referred to herein as compensation for simplicity) will be required for the loss of the aquatic habitat which would be overprinted by Alternative E. Preliminary comparative aquatic habitat compensation costs were developed to support the MAA and ranking of the alternatives. The cost estimates were developed based on unit rates developed from other similar projects and are applied by either by the length of the overprinted watercourse or surface area of overprinted waterbody. This approach is consistent for all mine waste alternatives (tailings, mine rock, low grade ore, mine water and overburden) evaluated in this document. It is anticipated that Alternative E will overprint 1.6 ha of waterbody surface area and an estimated 5.1 km of stream length. The estimated fish habitat compensation costs are:

- Fish compensation (watercourse): $5.6 million
- Fish compensation (waterbody): $0.6 million.

Alternative E overprints a variety of vegetation including but not limited to pine, black spruce, jack pine, aspen, birch and intermediate conifer swamp and thicket swamp. Additional details on the vegetation communities overprinted by Alternative E are provided in Figure 5-3.

During consultation, local Indigenous communities identified that wild rice fields and moose habitat were of interest. During the terrestrial baseline studies, SAR habitat was identified within the Property. The habitats and vegetation communities of interest were evaluated for each alternative based on the area that the alternative is anticipated to overprint. Alternative E is anticipated to approximately overprint the following habitat types:

- Wild rice field: 0 ha
- Moose late wintering habitat: 307.1 ha
- Moose foraging habitat: 4.6 ha
- SAR Habitat:
  - Caribou refuge habitat: 134.6 ha
  - Bat maternity roost habitat: 298.5 ha
  - Bat foraging habitat: 103.3 ha
  - Wolverine habitat: 89.9 ha
  - Avian habitat: 344.7 ha.

In the unlikely event of a dam failure for Alternative E, the following could occur:

- North Dam: tailings and liquids are anticipated to flow north via Unnamed Watercourse 8C and may reach Gullrock Lake
- South Dam: tailings and liquids will flow from Unnamed Watercourse 1 to Dixie Creek
- West Dam: tailings and liquids are anticipated to flow north via Unnamed Watercourse 8C and may reach Gullrock Lake to the north and Genessee Lake to the south.

The potential for adverse environmental and / or safety consequences were considered based on the maximum height of the TMF dam and potential distance to a named watercourse or waterbody (e.g., Dixie Creek). The maximum dam height for Alternative E is 18 m and the flow path length to Dixie Creek is approximately 3 km.

Comparative cost estimates were developed for Alternative E with the purposes of evaluating the alternatives in the MAA. The comparative costs were based on quantities and design details from (WSP 2024a) and details indicated in Figure 5-2 and the TMF characterization details in Table 5-4. Typical unit rates were used to support the costing and are consistent for all alternatives. The Alternative E comparative costs considered the following quantities:

- Dam clearing: 33 ha
- Dam fill volume: 3.6 Mm^3
- Perimeter ditching: 3.5 km
- Seepage collection sumps: 4
- Tailings pipeline: 8.5 km
- Roads: 4.5 km
- Annual water treatment (proportional to Alternative E footprint): $2.4 million/year.

Based on the comparative construction cost estimate for the MAA provided in Appendix A, it is anticipated that Alternative E will have a comparative construction cost of about $104.7 million.

During operations, the tailings transferred to the TMF will be desulphurized and will be NPAG. It is anticipated at closure that the water quality from the desulphurized tailings will be suitable for discharge and the desulphurized tailings surface will only require a vegetative cover, primarily for erosion protection and aesthetics. The dams will not be vegetated to discourage tree growth. Once the water quality is

proven to be suitable for discharge the seepage collection ponds will be allowed to drain via gravity to the surrounding environment restoring naturalized flows.

Preliminary comparative closure costs were developed for Alternative E with the purpose of ranking the TMF alternatives in the MAA. It is anticipated that the vegetative cover and up to 10 years of water treatment of the TMF runoff (tailings surface area) will cost about $35.1 million. The comparative closure cost estimates are provided in Appendix A.

5.3.2 ALTERNATIVE G

Alternative G is located about 4.5 km west from LP Central pit and is partially situated on the Property as shown in Figure 5-4. The Alternative G footprint is predominantly located in the Dixie Creek north tributary subcatchment that drains to Dixie Lake, ultimately reporting to the Chukuni River via Dixie Creek. A small portion of Alternative G will drain towards Dixie Creek. Alternative G is situated such that the upstream subcatchment from Genessee Lake will require a diversion to manage non-contact waters. Alternative G is anticipated to have a total footprint of about 456 ha and is designed to store up to 54.2 Mm^3 of tailings. A combination of natural topography and dams constructed in low lying areas will be used to provide storage and containment for the desulphurized tailings. Three dams will be required and are anticipated to have a total length of 6,003 m with a maximum dam height of 45 m achieving a maximum elevation of 405 masl. It is anticipated that the dams will have a downstream slope of 10H:1V and are anticipated to have an approximate dam footprint of 185 ha (WSP 2023c).

The tailings pipelines and access roads will be constructed for the TMF dams and conveyance of desulphurized tailings to the TMF. Following construction, the roads will also be used during operations to support TMF maintenance, operation and management. The Alternative G tailings pipeline and associated road network will extend in a southwesterly direction from the process plant to the TMF. The proposed pipeline and road alignment will cross Unnamed Watercourse 1 in between Unnamed Waterbody 1 and Unnamed Waterbody 2 as shown in Figure 5-4. The tailings pipeline will be about 7.3 km. Is estimated that 2.1 km of roads will be constructed to support Alternative G in addition to the roads already in place during the AEX Program and to support development of the open pits and construction of supporting key infrastructure such as the process plant.

Contact water from the TMF will be managed using natural topography, gravity drainage ditches and collection sumps located in low lying areas of the dam alignments. Alternative G will require 5.2 km of perimeter ditching and 12 collection sumps (Figure 5-4).

Waterbodies and watercourses that would be overprinted by Alternative G were conservatively assumed to be fish-bearing. Construction of Alternative G will result in the loss of a small unnamed waterbody and a number of unnamed tributaries, including Unnamed Watercourse 11. The estimated fish habitat compensation costs for the overprinted fish habitat as shown in Figure 5-4 are:

- Fish compensation (watercourse): $5.3 million
- Fish compensation (waterbody): $0.1 million.

A variety of vegetation types including but not limited to pine, black spruce conifer, jack pine, aspen, birch and intolerant hardwood swamp and organic thicket will be overprinted during the construction of Alternative G. Additional details on the vegetation types within the Alternative G footprint are shown in Figure 5-5.

During consultation, Indigenous communities identified that wild rice fields and moose habitat were of interest. Additionally, potential SAR habitat were observed within the Alternative G footprint. The anticipated overprinted habitat types are:

- Wild rice fields: 0 ha
- Moose later wintering habitat: 283.0 ha
- Moose foraging habitat: 0 ha
- SAR habitat types:

- Caribou refuge habitat: 136.1 ha
- Bat maternity roost habitat: 270.8 ha
- Bat foraging habitat: 19.2 ha
- Wolverine habitat: 0 ha
- Avian habitat: 456 ha.

In the unlikely event of a dam failure, it is anticipated that flows from the breach of Alternative G would flow via an unnamed tributary to Dixie Lake, potentially reaching Dixie Creek. As the maximum elevation of the TMF is 405 masl, which is elevated compared to Genessee Lake, there is potential for tailings runout to also reach Genessee Lake, though water generally flows in a southernly direction towards Dixie Lake. For the purposes of the MAA, the dam failure will be evaluated based on the maximum dam height (45 m) and the flow path length to Dixie Lake which is approximately 1 km.

Comparative cost estimates were developed for Alternative G based on quantities provided in (WSP 2023c) and details indicated in Figure 5-4 and TMF characterization details in Table 5-4. The comparative costs were developed with the purpose of differentiating potential capital costing of the TMF alternatives. The Alternative G comparative costs considered the following:

- Dam clearing: 185 ha
- Dam fill volume: 20.6 Mm^3
- Perimeter ditching: 5.2 km
- Seepage collection sumps: 12
- Tailings pipeline: 7.3 km
- Roads: 2.1 km
- Annual water treatment (proportional to Alternative G footprint): $1.8 million/year.

Based on the comparative construction cost estimate provided in Appendix A, it is anticipated that Alternative G will have a comparative construction cost of about $525 million.

During operations, the tailings transferred to the TMF will be desulphurized and will be NPAG. It is anticipated at closure that the water quality from the desulphurized tailings will be suitable for discharge and the desulphurized tailings surface will only require only a vegetative cover. The dams will not be vegetated to maintain long term stability of these features. Once the water quality is proven to be suitable for treatment the seepage collection ponds will be allowed drain via gravity to the surrounding environment restoring naturalized flows. It is anticipated that the vegetative cover and up to 10 years of water treatment of the TMF runoff (tailings surface area) will cost about $26 million. The comparative closure cost estimates are provided in Appendix A.

5.3.3 ALTERNATIVE H

Alternative H is sited 8.8 km west of the LP Central pit and wholly sited outside the Property as shown in Figure 5-6. Alternative H wholly within the subcatchment that drains to Dixie Lake, ultimately reporting to the Chukuni River via Dixie Creek. To minimize contact water with the proposed TMF location, a diversion would be required to manage the non-contact water from upstream of Alternative H.

The Alternative H footprint is anticipated to be approximately 606 ha and is designed to store up to 59.2 Mm^3 of tailings. Storage of the desulphurized tailings will use natural topography and require the construction of two dams. The dams are anticipated to have a total length of about 5,062 m and will have a maximum height of 26 m achieving an ultimate elevation of 386 masl. The proposed Alternative H dams will have a side slope of 10H:1V requiring about 8.9 Mm^3 of fill material and will have an estimated dam footprint of 10.3 ha (WSP 2023c).

A tailings pipeline and access road will be constructed to support dam construction and to convey desulphurized tailings from the process to the Alternative H TMF. The tailings pipeline and road alignment will extend southwesterly from the process plant. The proposed pipeline and road alignment will cross Unnamed Watercourse 1 in between Unnamed Waterbody 1 and Unnamed Waterbody 2, shown in Figure 5-6. It is estimated that Alternative H will require 9.4 km of pipeline and a road network of about 5.7 km in addition to the roads already in place during the AEX Program and required for development of key infrastructure illustrated in Figure 5-6.

Contact water from the TMF will be managed using natural topography, gravity drainage ditches and collection sumps located in low lying areas of the dam alignments. Alternative H will need about 5.9 km of perimeter ditching and six collection sumps, shown in Figure 5-6.

Alternative H will overprint several small waterbodies and watercourses that were conservatively assumed to be frequented by fish (not confirmed), shown in Figure 5-7. Associated fish compensation comparative costs for Alternative H are estimated as:

- Fish compensation (watercourse): $10.4 million
- Fish compensation (waterbody): $0.8 million.

Alternative H overprints a variety of vegetation including but not limited to black spruce, jack pine, aspen, birch hardwood, swamps (conifer, thicket) as well as a variety of fen and marsh types. A complete description of the overprinted vegetation types are provided on Figure 5-7.

During consultation, Indigenous communities identified that wild rice fields and moose habitat were of interest. Additionally, SAR habitat were observed within the Alternative H footprint. Alternative H is anticipated to approximately overprint the following habitat types:

- Wild rice fields: 0 ha
- Moose late wintering habitat: 563.9 ha
- Moose foraging habitat: 32.7 ha
- SAR habitat:
  - Caribou refuge habitat: 134.7 ha
  - Bat maternity roost habitat: 496.7 ha
  - Bat foraging habitat: 148.7 ha
  - Wolverine habitat: 64.6 ha
  - Avian habitat: 606 ha.

In the unlikely event of a dam failure, it is anticipated that flows from a breach of Alternative H would flow via an unnamed tributary to Dixie Lake and though unlikely, could potentially reach the Chukuni River via Dixie Creek. For the purposes of the MAA, the dam failure will be evaluated based on the maximum dam height (26 m) and the flow path length to Dixie Lake which is approximately 1.5 km.

Comparative cost estimates were developed for Alternative H based on quantities provided in (WSP 2023c) and details indicated in Figure 5-6 and TMF characterization details in Table 5-4. The comparative costs were developed with the purpose of differentiating potential capital costing of the TMF alternatives. The Alternative H comparative costs considered the following:

- Dam clearing: 103 ha
- Dam fill volume: 8.9 Mm^3
- Perimeter ditching: 5.9 km
- Seepage collection sumps: 6
- Tailings pipeline: 9.4 km

- Roads: 5.7 km
- Annual water treatment (proportional to Alternative H footprint): $3.3 million/year.

Based on the comparative construction cost estimate to support the MAA provided in Appendix A, it is anticipated that Alternative H will have a comparative construction cost of about $264.4 million.

During operations, the tailings transferred to the TMF will be desulphurized and will be NPAG. It is anticipated at closure that the water quality from the desulphurized tailings will be suitable for discharge and the desulphurized tailings surface will only require a vegetative cover. The dams will not be vegetated to maintain long term stability of these features. Once the water quality is proven to be suitable for treatment the seepage collection ponds will be allowed to drain via gravity to the surrounding environment restoring naturalized flows. It is anticipated that the vegetative cover and up to 10 years of water treatment of the TMF runoff (tailings surface area) will cost about $30 million. The comparative closure cost estimates are provided in Appendix A.

5.3.4 ALTERNATIVE I

Alternative I is located about 7.4 km southeast from LP Central pit and is predominantly situated within the Property as shown in Figure 5-8. The Alternative I TMF footprint is generally sited in Dixie Creek catchment that ultimately reports to the Chukuni River. A very small portion of Alternative I drains towards Pakwash Lake.

Alternative I is anticipated to have a footprint of about 601 ha and is designed to store up to 58.4 Mm^3 of tailings. The proposed TMF configuration will require a single dam and is anticipated to have a total length of 6,278 m with a maximum height and elevation of 37 m and 384.5 masl respectively. The anticipated dam footprint for Alternative I will be about 268 ha and the dams are anticipated to be constructed with a downstream slope of 10H:1V requiring about 39.7 Mm^3 of dam fill material.

Contact water will be managed by natural topography, perimeter ditching and collection sumps located in low lying areas around the TMF. It is anticipated that Alternative I will require 5.8 km of perimeter ditching and seven collection sumps.

The tailings pipeline and access road will be constructed such that the process plant can direct tailings to the Alternative I TMF. The desulphurized tailings will follow the concentrate tailings pipeline and road alignment extending in a south easterly direction from the VMF to the TMF. Where possible the road was sited based on existing roads and trails. The proposed pipeline and road alignment will require one water crossing over Dixie Creek. The tailings pipeline will be 15.4 km long. Dam construction will also be facilitated by the road from the VMF to Alternative I and an additional road length of 5.7 km will be required. The Alternative I pipeline and road alignment are shown in Figure 5-8.

To support this alternatives assessment, it was assumed that the unnamed watercourse that would be overprinted by Alternative I is frequented by fish (not confirmed). Alternative I overprints about 1.4 km of an unnamed watercourse as shown in Figure 5-9.

The construction of Alternative I will result in the loss of both aquatic and terrestrial habitats. Alternative I overprints a variety of vegetation including but not limited to black spruce, aspen-birch hardwood, jack pine, swamp (conifer and thicket) and fen. A description of the overprinted vegetation types is provided in Figure 5-9.

During consultation Indigenous communities identified that wild rice fields and moose habitat were of interest. Additionally, SAR habitat were observed during terrestrial baseline studies within the Property. The Alternative I footprint is anticipated to approximately overprint the following habitat types:

- Wild rice fields: 0 ha
- Moose late wintering habitat: 340.3 ha
- Moose foraging habitat: 0.1 ha
- SAR habitat types:

- Caribou refuge habitat: 106.3 ha
- Bat maternity roost habitat: 333.0 ha
- Bat foraging habitat: 18.0 ha
- Wolverine habitat: 4.6 ha.
- Avian habitat: 601.0 ha.

In the unlikely event of a dam failure, it is anticipated that flows from a breach of Alternative I would flow via an unnamed tributary to Dixie Creek and could potentially reach the Chukuni River. For the purposes of the MAA, the dam failure will be evaluated based on the maximum dam height (37 m) and the flow path length to Dixie Lake which is approximately 0.8 km.

To support evaluation of the alternatives in the MAA, comparative cost estimates were developed and included line items to estimate the cost to develop fish habitat compensation that may be required based on the watercourse length within the Alternative I footprint. The estimated fish habitat compensation comparative costs are:

- Fish compensation (watercourse): $1.5 million
- Fish compensation (waterbody): $0.

Comparative cost estimates were developed for Alternative I with the purposes of evaluating and differentiating the TMF alternatives in the MAA. Comparative cost estimates were developed based on quantities provided in (WSP 2023c) and details indicated in Figure 5-8 and TMF characterization details in Table 5-4. The Alternative I comparative costs considered the following:

- Dam clearing: 268 ha
- Dam fill volume: 39.7 Mm^3
- Perimeter ditching: 5.8 km
- Seepage collection sumps: 7
- Tailings pipeline: 15.4 km
- Roads: 5.7 km
- Annual water treatment (proportional to Alternative I footprint): $2.2 million/year.

Based on the comparative construction cost estimate provided in Appendix A, it is anticipated that Alternative I will have a comparative construction cost of about $907.8 million.

During operations, the tailings transferred to the TMF will be desulphurized and will be NPAG. It is anticipated at closure that the water quality from the desulphurized tailings will be suitable for discharge and the desulphurized tailings surface will only require a vegetative cover. The dams will not be vegetated to maintain long term stability of these features. Once the water quality is proven to be suitable for treatment the seepage collection ponds will be allowed to drain via gravity to the surrounding environment restoring naturalized flows. It is anticipated that the vegetative cover and up to 10 years of water treatment of the TMF runoff (tailings surface area) will cost about $32 million. The comparative closure cost estimates are provided in Appendix A.

5.3.5 ALTERNATIVE J

Alternative J is located about 7.5 km west from LP Central pit and is wholly situated outside of the Property as shown in Figure 5-10. The Alternative J TMF footprint was located within the Dixie Creek north tributary subcatchment which ultimately drains to the Chukuni River and was sited such that the TMF does not overprint waterbodies or watercourses that may be frequented by fish.

Alternative J is anticipated to have a footprint of about 340 ha and is designed to store up to 57.3 Mm^3 of desulphurized tailings. The proposed TMF configuration will require a single ring dam and is anticipated

to have a total dam length of 5,722 m, with a maximum height of 60 m achieving a maximum elevation of 430 masl. The dam footprint will be about 152 ha, and the dams are anticipated to be constructed with a downstream slope of 10H:1V requiring 35.5 Mm^3 of dam fill material.

Contact water from Alternative J will be managed by natural topography, perimeter ditching and collection sumps located in low lying areas around the TMF. It is anticipated that Alternative J will require 5.3 km of perimeter ditching and five collection sumps.

The tailings pipeline and access road will be constructed such that the process plant can direct the desulphurized tailings to the Alternative J TMF. Roads will also be required to support dam and pipeline construction, operation and maintenance. The required pipeline and road alignment will cross Unnamed Watercourse 1 in between Unnamed Waterbody 1 and Unnamed Waterbody 2 and will also cross Unnamed Watercourse 11 and a tributary of Genessee Lake (see Figure 5-10). Alternative J will require 10.4 km of pipeline and a road alignment of 5.2 km in addition to the roads already in place during the AEX Program and to support construction of key infrastructure such as the process plant.

Alternative J overprints a variety of vegetation including but not limited to jack pine, black spruce, aspen-birch hardwood, fir and fen. A complete description of the overprinted vegetation types are provided on Figure 5-11. Baseline studies identified potential habitat types within the Property including species identified as being of interest to Indigenous communities including wild rice fields and moose habitat. Additionally, SAR habitat were identified during baseline studies within the Property. Alternative J is anticipated to approximately overprint the following habitat types:

- Wild rice fields: 0 ha
- Moose late wintering habitat: 184.5 ha
- Moose foraging habitat: 0.1 ha
- SAR habitat types:
  - Caribou refuge habitat: 96.4 ha
  - Bat maternity roost habitat: 180.7 ha
  - Bat foraging habitat: 13.1 ha
  - Wolverine habitat: 0 ha
  - Avian habitat: 340 ha.

In the unlikely event of a dam failure, it is anticipated that flows from a breach of Alternative J would flow in the following potential paths:

- North breach: Drain towards Genessee Lake which drains to Dixie Lake and Dixie Creek
- South breach: Drains towards Dixie Lake which drains to Dixie Creek.

For the purposes of the MAA, the dam failure will be evaluated based on the maximum dam height (60 m) and the flow path length to Genessee Lake which is approximately 0.5 km.

Comparative cost estimates were developed for Alternative J with the purposes of evaluating and differentiating the TMF alternatives in the MAA. Comparative cost estimates were developed based on quantities provided in (WSP 2023c) and details indicated in Figure 5-10 and TMF characterization details in Table 5-4. The Alternative J comparative costs considered the following:

- Dam clearing: 15.2 ha
- Dam fill volume: 35.5 Mm^3
- Perimeter ditching: 5.3 km
- Seepage collection sumps: 5
- Tailings pipeline: 10.4 km

- Roads: 5.2 km
- Annual water treatment (proportional to Alternative J footprint): $1.2 million/year.

Based on the comparative construction cost estimate provided in Appendix A, it is anticipated that Alternative J will have a comparative construction cost of about $723.5 million.

During operations, the process plant will include a desulphurization stream, and the tailings will be NPAG. It is anticipated at closure that the desulphurized tailings will require a vegetative cover over the dry tailings surface. The dams will not be vegetated to maintain long term stability of these features. Once the water quality is proven to be suitable for treatment the seepage collection ponds will be allowed to drain via gravity to the surrounding environment restoring naturalized flows. It is anticipated that the vegetative cover and up to 10 years of water treatment of the TMF runoff (tailings surface area) will cost about $18 million.

5.3.6 ALTERNATIVE O

Alternative O is located about 2.3 km south of LP Central pit and is wholly situated on Property as illustrated in Figure 5-12. Alternative O is sited in in the Dixie Creek south tributary subcatchment and ultimately drains to the Chukuni River via Dixie Creek. Alternative O is situated such that a water diversion will be required to divert non-contact runoff from the proposed TMF location.

Alternative O is anticipated to have a TMF footprint of about 490 ha and is designed to store up to 51.5 Mm^3 of tailings. The proposed TMF configuration will require three dams that are anticipated to have a total length of 5,176 m with a maximum height of 33 m achieving a maximum elevation of 380 masl. The dam footprint will be about 168 ha, and the dams are anticipated to be constructed with a downstream slope of 10H:1V. Approximately 19.1 Mm^3 of dam fill material will be required to support Alternative O.

Contact water (i.e., precipitation runoff on the dams) will be managed by natural topography, perimeter ditching and collection sumps. The collection sumps will be constructed in low lying areas for seepage and runoff collection. It is anticipated that Alternative O will require 4.7 km of perimeter ditching and 11 collection sumps.

The tailings pipeline and access road will be constructed such that the process plant can direct desulphurized tailings to Alternative O. Roads will also be required to support TMF dam and pipeline construction, operation and maintenance. The Alternative O tailings pipeline and road will extend south from the AEX Program area and across Dixie Creek as illustrated in Figure 5-12, and will require a tailings pipeline length of 10.1 km and an additional road length of 2.7 km.

Alternative O will overprint 6.3 km of watercourses (Unnamed Watercourse 7A, Unnamed Watercourse 7A-07, Unnamed Watercourse 7A-08 and Unnamed Watercourse 7A-09). Overprinted vegetation includes but is not limited to pine, black spruce, jack pine, aspen-birch hardwood, conifer swamp, thicket swamp, treed fen and meadow marsh. A complete description of the overprinted vegetation types are provided in Figure 5-13. Terrestrial baseline studies identified potential habitats identified as being of interest to Indigenous communities within the Property including wild rice fields and moose habitat. Additionally, Alternative O is anticipated to SAR habitat types. The following habitat types will be overprinted by Alternative O:

- Wild rice fields: 0 ha
- Moose late wintering habitat: 337.7 ha
- Moose foraging habitat: 26.0 ha
- SAR habitat types:
  - Caribou refuge habitat: 279.6 ha
  - Bat maternity roost habitat: 305.8 ha
  - Bat foraging habitat: 125.0 ha

- Wolverine habitat: 85.1 ha
- Avian habitat: 490 ha.

In the unlikely event of a dam failure, it is anticipated that flows from a breach of Alternative O would flow via an unnamed tributary, to Unnamed Watercourse 7 which drains to Dixie Creek and could potentially reach the Chukuni River. For the purposes of the MAA, the dam failure will be evaluated based on the maximum dam height (33 m) and the flow path length to the Dixie Creek which is approximately 2.5 km. To support the MAA, comparative cost estimates were developed and included line items to estimate the cost to develop fish habitat compensation that may be required based on the waterbody footprint and watercourse length located in the Alternative O footprint. The estimated fish habitat compensation comparative costs are:

- Fish compensation (watercourse): $7.0 million
- Fish compensation (waterbody): $0.

Comparative cost estimates were developed for Alternative O with the purposes of evaluating and differentiating the TMF alternatives in the MAA. Comparative cost estimates were developed based on quantities provided in (WSP 2023c) and details indicated in Figure 5-12 and TMF characterization details in Table 5-4. The Alternative O comparative costs considered the following:

- Dam clearing: 26.8 ha
- Dam fill volume: 19.1 Mm^3
- Perimeter ditching: 4.7 km
- Seepage collection sumps: 11
- Tailings pipeline: 10.1 km
- Roads: 2.7 km
- Annual water treatment (proportional to Alternative O footprint): $2.1 million/year.

Based on the comparative construction cost estimate provided in Appendix A, it is anticipated that Alternative O will have a comparative construction cost of about $487.1 million.

During operations, the process plant will include a desulphurization stream, and the tailings will be NPAG. It is anticipated at closure that the desulphurized tailings will require a vegetative cover over the dry tailings surface. The dams will not be vegetated to maintain long term stability of these features. Once the water quality is proven to be suitable for treatment the seepage collection ponds will be allowed to drain via gravity to the surrounding environment restoring naturalized flows. It is anticipated that the vegetative cover and up to 10 years of water treatment of the TMF runoff (tailings surface area) will cost about $31 million.

5.4 STEP 4: IMPACT EVALUATION AND ASSESSMENT PROCESS

5.4.1 ACCOUNTS, SUB-ACCOUNTS AND INDICATORS

Sub-accounts and indicators were chosen based on Project team experience with mine waste storage and assessments of alternatives for other mining projects using the methodology described in Section 4 and in accordance with ECCC (2016). The Project Team included both Great Bear Resources staff and their consultants. During the preparation of the report, consultation with Indigenous communities was undertaken and feedback / input was gathered that informed the report. This included the alternatives, accounts, sub-accounts, indicators, measurement parameters and weightings. A complete list of sub-

accounts and indicates used to develop the multiple accounts ledger, including the rationale for selection is provided in Table 5-3 and the characterization of the TMF alternatives are summarized in Table 5-4.

Unless identified as being of specific interest to local communities, sub-accounts and indicators were chosen such that they would reveal relative differences between the alternative locations. During characterization of the alternatives, it was noted that several indicators revealed little, or no, meaningful differences between the alternatives. Therefore, in the interests of analyzing the alternatives relative to each other, and as per the ECCC Guidelines (ECCC 2016), these sub-accounts and indicators were removed from the MAA.

5.4.2 VALUATING CRITERIA

Criteria used to calculate values for each of the indicators in the multiple accounts ledger are provided in Table 5-5.

5.5 STEP 5: VALUE-BASED DECISION PROCESS

A multiple accounts ledger was developed for the three alternatives considered through the MAA. Using the alternatives characterization (Table 5-4) and valuation criteria summarized in Table 5-5, values have been determined for all indicators, which are presented in Table 5-6.

In accordance with the ECCC (2016), weights have been applied to each account, sub-account and indicator, to reflect the relative importance of the criteria and as described in Section 4.5.3.

5.5.1 QUANTITATIVE ANALYSIS – BASE CASE

Using the values and weights provided in Table 5-5 and Table 5-6, respectively, the MAA was conducted for the base case scenario. The analysis of Environmental, Technical, Project Economics and Socio-economic indicators, and calculation of sub-account merit ratings is provided in Table 5-7 through Table 5-10. The analysis of Environmental, Technical, Project Economics, and Socio-economic sub-accounts, and calculation of account merit ratings, is provided in Table 5-11 through Table 5-14.

Overall results of the MAA base case scenario for the TMF, and calculation of alternative merit ratings, are provided in Table 5-15. The results are summarized as follows:

- Alternative E is the overall preferred alternative merit rating of 4.5 out of 6.0
- Alternative J is the second preferred alternative with a merit rating of 3.9 out of 6.0
- Alternative O is the third preferred alternative with a merit rating of 3.8 out of 6.0
- Alternative G is the fourth preferred alternative with a merit rating of 3.6 out of 6.0
- Alternative I is the fifth preferred alternative with a merit rating of 3.5 out of 6.0
- Alternative H has the lowest merit rating of 3.2 out of 6.0.

5.6 STEP 6: SENSITIVITY ANALYSIS

A sensitivity analysis was carried out to evaluate the robustness of the analytical process and to determine the degree to which various options are influenced by the choice of weightings.

Four sensitivity analysis scenarios were given consideration, in addition to the base case (weighting shown in brackets):

- Base Case
- Case 1: All accounts weighted equally:

  - Environmental (6)
  - Technical (6)
  - Project Economics (6)
  - Socio-economic (6)
- Case 2: All accounts, sub-accounts and indicators weighted equally:
  - Accounts (6)
  - Sub-accounts (6)
  - Indicators (6)
- Case 3: Prioritize people and environment:
  - Environmental (6)
  - Technical (2)
  - Project Economics (1)
  - Socio-economic (6)
- Case 4: Prioritize water (weight of all criteria related to water received a maximum weight):
  - Terrestrial and water resources (6)
  - Fisheries resources (6)
- Case 5: Project economics has no weight:
  - Environmental (6)
  - Technical (3)
  - Project Economics (0)
  - Socio-economic (3).

The sensitivity analysis found that the MAA for the TMF is robust with Alternative E being preferred for all scenarios. The results of the sensitivity analyses as described above are presented in Table 5-16 and Figure 5-14.

5.7 ALTERNATIVE TAILINGS DISPOSAL TECHNOLOGIES

Six alternative tailings disposal (ATD) technologies, which are described further in Section 5.8, were identified as part of the tailings dewatering study for the Project (WSP 2023b) and were carried forward in the alternatives assessment:

- ATD #1: Thickened Slurry Tailings
- ATD #2: Thickened Tailings
- ATD #3: High-Density Thickened Tailings
- ATD #4: Paste Tailings
- ATD #5: Filtered Tailings
- ATD #6: Tailings and Mine Rock Co-Disposal.

5.8 STEP 1: CANDIDATE DISPOSAL ALTERNATIVES

The six ATD candidate alternatives are presented in the following sections.

5.8.1 ATD #1: THICKENED SLURRY TAILINGS

Thickened slurry tailings (sometimes also referred to as conventional slurry) are a tailings slurry with a typical consistency of solids content in the range of 30% to 40% solids by weight. Thickened slurry tailings are delivered to the TMF via a pipeline and are deposited hydraulically in a loose state. Embankment dams or natural topography are required to retain the tailings. Thickened slurry tailings are typically characterized by low strength, high water content and complex water management, with tailings potentially releasing high amounts of water to recovery ponds.

The embankment dams or natural topography required are typically taller and larger than required for other methods, as the design needs to store additional water volume. It will also produce higher amounts of reclaim water.

5.8.2 ATD #2: THICKENED TAILINGS

Thickened tailings materials have been dewatered, or thickened, to have a consistency with a solids content in the range of 40% to 60% solids by weight. The dewatering (i.e., water recovery) occurs before the tailings are delivered to the TMF. These tailings are delivered in a pipeline and deposited hydraulically, in a loose state.

Embankment dams are generally used for containment of thickened tailings. As the thickened tailings are deposited, the solids will segregate with the coarser material settling closer to the point of discharge and the finer fraction transported further from the discharge point. Water piped into the TMF will also segregate from the solids and collects in a pond that will either be reclaimed to the process plant, discharged, or will evaporate. Thickened tailings produce reduced amounts of reclaim water compared to thickened slurry tailings, can form nominally steeper beach angles and are likely to require slightly less storage capacity compared to ATD #1.

5.8.3 ATD #3: HIGH-DENSITY THICKENED TAILINGS

High-density thickened tailings have a solids content in the range of 60% to 70% solids by weight with dewatering (i.e., water recovery) occurring before the tailings are delivered to the TMF. These tailings are delivered in a pipeline and deposited hydraulically, in a loose state and are typically non-segregating.

High-density thickened tailings in general have steeper slopes compared to thickened slurry tailings. Embankment dams are required for containment but can generally be reduced in size if beach slopes and topography can be utilized. High-density thickened tailings facilities generally operate with no or small ponds on the tailings surface, as less water is released from the tailings compared to thickened tailings slurry and thickened tailings. Runoff can be stored in external collection ponds (allowing for further reduction in dam heights) where it will either be reclaimed to the process plant, discharged, or will evaporate.

5.8.4 ATD #4: PASTE TAILINGS

Paste tailings have a solids content in the range of 70% to 75% solids by weight with dewatering (i.e., water recovery) occurring before the tailings are delivered to the TMF. These tailings are delivered in a pipeline and deposited hydraulically, in a loose state with steeper slopes than thickened slurry tailings.

Embankment dams are required for containment but can generally be reduced in size if beach slopes and topography can be utilized. Also, these facilities generally operate without ponds or with small ponds on the tailings surface, as less water is released from the tailings. Runoff can be stored in external collection ponds allowing for further reduction in dam heights) where it will either be reclaimed to the process plant, discharged, or will evaporate.

Paste tailings management is best used to backfill underground workings where transport and placement are aided by gravity and is not recommended for moderate to high production mines or with coarse tailing

materials. Additionally, paste tailings are not typically used for surface storage. As such, it is not a widely accepted and in use in a low-grade, bulk-tonnage open pit mining operation. Paste tailings as a sole solution for the deposition of tailings stored on the surface is not suitable for the Project. The Project plans on using some cemented paste backfill to backfill underground voids, but the underground workings can only store a portion of the tailings produced due to void spacing and extra tonnage from the open pit operation.

5.8.5 ATD #5: FILTERED TAILINGS

Filtered tailings are typically dewatered to a solids content of 80% or more before conveyance to the management facility. Generally, there may be requirements that moisture content does not exceed specified values (i.e., dry of optimum moisture content) such that compaction objectives can be achieved. Requirement will vary depending on the site and design of the TMF. Filtered tailings will generally be delivered to the management facility via truck or conveyor. The tailings will then be bulldozed in lifts and compacted.

Embankment dams are generally not required but structural zones within the TMF are generally required. Contact water (i.e., seepage and runoff) is collected in a pond(s) that will either be reclaimed to the process plant, discharged, or will evaporate. Filtered tailings will have a high cost associated with the construction and placement of material and will not provide a material benefit to the Project (WSP 2023b).

5.8.6 ATD #6: TAILINGS AND MINE ROCK CO-DISPOSAL

Tailings and mine rock co-disposal refers to the storage of tailings and mine rock in the same facility. Co-disposal could allow for covering a layer of tailings with mine rock and then covering the mine rock with tailings. This would allow for the desulphurized tailings to cover the PAG mine rock. Covering the PAG mine rock with desulphurized tailings will limit the onset of ML / ARD by decreasing the oxygen ingress through the desulphurized tailings to the underlying mine rock. This management strategy would potentially decrease contact water management requirements and potentially reduce acidity from the mine rock.

The required management strategy for the co-disposal technology requires increased handling of the mine waste materials to properly cover the PAG mine rock with a layer of desulphurized tailings such that the oxygen ingress would be appropriately limited to reduce the onset of acidity. Mine rock will predominantly be extracted from the LP Central pit which will be developed during the first 10 years of production. As the desulphurized tailings are produced over the life of mine, there may be insufficient desulphurized tailings to sufficiently cover the PAG mine rock at the same time. As such, the mine rock may be left uncovered for a number of years while waiting on desulphurized tailings material which could result in the onset of acidity and deterioration of water quality from the mine rock.

To support co-disposal there will be extremely high costs associated with management of the mine waste streams for the effective placement of mine rock and desulphurized tailings which will negatively affect the project economics. The risk of cost escalation for this technology is considered high as insufficient desulphurized tailings cover over the mine rock may result in the onset of acidity and result in poor water quality requiring additional costs for management.

5.9 STEP 2: PRE-SCREENING OF ALTERNATIVE TAILINGS DISPOSAL METHODS

Pre-screening is applied to determine if any of the six identified ATD methods (Section 5.8) have an inherent fatal flaw that warrants eliminating this method from further consideration in the mine waste alternative analysis. The pre-screening criteria developed for the Great Bear Project assessment of ATD are:

- Is the tailings disposal method feasible with the mine plan? (yes / no)

- Does the tailings disposal method provide a benefit from the base case (thickened tailings slurry)? (yes / no)
- Does the tailings disposal method reduce the risk of Project cost escalation (capital costs and operating costs) over the life of the Project? (yes / no).

The results of the pre-screening for the ATDs and rationale for the responses are presented in Table 5-17. A ‘no’ indicates a fatal flaw with the disposal technologies. Based on this assessment only ATD #1 Thickened Slurry Tailings and ATD #3 High-Density Thickened Tailings are carried forward past pre-screening.

Thickened slurry tailings and high-density thickened tailings would both be conveyed via pumps and pipelines to the TMF for storage. It is anticipated that the high-density thickened tailings will have a higher solids content and will produce smaller amounts of reclaim water that will likely require a smaller storage capacity compared to the thickened tailings slurry disposal method.

Great Bear Resources developed a trade off study to evaluate the potential alternatives for tailings dewatering for the TMF. During this study it was identified that the high-density thickened tailings will have lower capital, operating and sustaining costs compared to the thickened tailings alternative, and is the economically feasible alternative for the Project (WSP 2023b). Therefore, the preferred ATD for the Project is ATD #3: High-Density Thickened Tailings.

Following identification of the preferred tailings deposition technology, TMF dam designs were re-evaluated for deposition of a desulphurized, high-density thickened tailings stream. The main drivers of the TMF dam design included: cost effective construction and the desire to use the best available techniques to deal with acid generating potential of the tailings and to minimize the contact water stored in the TMF in accordance with Great Bear Resources EMS for Tailings. The TMF dam cross section will have a rockfill shell with a vertical sand and gravel filters to retain the desulphurized tailings solids (WSP 2024a). The TMF dam cross section does not include a low permeability core material such as clay or a geomembrane and the water collected in the TMF will drain through the dam, as is preferable to minimize storage of contact water in the TMF.

To manage water from the TMF a pond (TMF pond) will be constructed downgradient. Alternative locations for the TMF pond were not considered based on the following rationale:

- TMF pond siting is best located downgradient of the TMF, to facilitate the capture of contact water by gravity and is located in the same sub-catchment as the preferred TMF alternative reducing potential water management complexities
- Great Bear Resources corporate policies for tailings storage are to use best available techniques which include but are not limited to minimizing storage of contact water in the TMF, minimizing dam heights and reducing long-term risks associated with tailings dams and water retaining dams. The proposed design reduces the storage of contact water within the TMF, reducing both the dam heights and associated potential long-term risks associated with the TMF dam.

Table 5-1: TMF Alternative Locations Pre-Screening

	Do the alternatives avoid areas that could post a safety risks to the public or workers? (yes / no)	Do the alternatives avoid overprinting current aggregate operations? (yes / no)
Alternative A	Yes	Yes
Alternative D	Yes	Yes
Alternative E	Yes	Yes
Alternative F	No	No
Alternative G	Yes	Yes
Alternative H	Yes	Yes
Alternative I	Yes	Yes
Alternative J	Yes	Yes
Alternative O	Yes	Yes

Table 5-2: Summary Table of Candidate TMF Alternatives

TMF Alternative	TMF Construction Approach	TMF Operation Approach	TMF Closure Approach
Alternative E	Construction works for Alternative E will include the development of a single cell for the storage and containment of the desulphurized tailings. Roads will be developed at this stage to support TMF site preparation and development of the TMF dams. The tailings will be contained by natural topography, and a total of three dams will be constructed out of natural materials with downstream slopes ranging from 2H:1V to 10H:1V. During the construction phase, a pipeline and road will be constructed from the process plant to the TMF for the transfer of desulphurized tailings.	During operations desulphurized tailings will be deposited in Alternative E via a tailings pipeline. Constructed roads will be used to support operations and on-going monitoring and maintenance of the TMF and associated pipelines (during operations concentrate tailings will be deposited via a pipeline to the VMF). All concentrate tailings will be maintained below a minimum 4 m water cover during operations. Water management complexity is likely to be lower as the TMF is wholly situated in the Dixie Creek north tributary subcatchment.	At closure a vegetative overburden cover will be placed on the desulphurized tailings surface, and the area will be seeded. Once water quality is suitable, drainage from Alternative E will be restored towards Dixie Creek.
Alternative G	Construction effort for Alternative G will include the development of one cell used for the storage and containment of the desulphurized tailings. Roads will be developed at this stage to support dam construction. The tailings will be contained by natural topography and a total of three dams constructed out of natural materials with a downstream slope of 10H:1V. During the construction phase, pipeline and road will be constructed from the process plant to the TMF for the transfer of desulphurized tailings.	During operations desulphurized tailings will be transferred to Alternative G via a tailings pipeline (concentrate tailings will be deposited via a pipeline to the VMF). Constructed roads will be used to support operations and on-going monitoring and maintenance of the TMF dams and pipelines. Water management complexity may be challenging as Alternative G is located in a portion of the Dixie Creek north tributary subcatchment that drains to Dixie Lake.	At closure a vegetative overburden cover will be placed on the desulphurized tailings surface, and the area will be seeded. Once water quality is suitable, drainage from Alternative G will be restored towards Dixie Lake.
Alternative H	Construction will include the development of a single cell for the storage and containment of the desulphurized tailings. Roads will be developed at this stage to support TMF site preparation and dam construction. The tailings will be contained by natural topography and a total of two dams with downstream slopes of 10H:1V, constructed out of natural materials. During the construction phase, a pipeline and road will be constructed from the process plant to the TMF for the transfer of desulphurized tailings.	During operations desulphurized tailings will be deposited in Alternative H via a tailings pipeline (concentrate tailings will be deposited via a pipeline to the VMF). Constructed roads will be used to support operations and on-going monitoring and maintenance of the TMF dams and associated pipelines. Water management complexity is likely to be lower as the TMF is wholly situated in the Dixie Creek Dixie Creek north subcatchment.	At closure a vegetative overburden cover will be placed on the desulphurized tailings surface, and the area will be seeded. Once water quality is suitable, drainage from Alternative H will be restored towards Dixie Lake.
Alternative I	Alternative I construction works will include the development of a single cell that will be used for the storage and containment of the desulphurized tailings. Roads will be developed at this stage to support TMF site preparation and dam construction, including a crossing over Dixie Creek. The tailings will be contained by natural topography and one dam. The dam will be constructed out of natural materials with a downstream slope of 10H:1V. During the construction phase, a pipeline and road will be constructed from the process plant to the TMF for the transfer of desulphurized tailings.	During operations desulphurized tailings will be transferred to Alternative I via a tailings pipeline (concentrate tailings will be deposited via a pipeline to the VMF). Constructed roads will be used to support operations and on-going monitoring and maintenance of the TMF dams and associated pipelines. Water management complexity is likely to be high as the TMF is situated in the Dixie Creek catchment.	At closure a vegetative overburden cover will be placed on the desulphurized tailings surface, and the area will be seeded. Once water quality is suitable, drainage from Alternative I will be restored towards Dixie Creek.
Alternative J	Construction for Alternative J will include the development of a single cell used for the storage and containment of the desulphurized tailings that avoids waterbodies and watercourses that may be frequented by fish. Roads will be developed at this stage to support TMF site preparation and dam construction. The tailings will be contained by one ring dam with side slopes of 3H:1V, constructed out of natural materials. During the construction phase, a pipeline and road will be constructed from the process plant to the TMF for the transfer of desulphurized tailings.	During operations desulphurized tailings will be deposited in Alternative J via a tailings pipeline (concentrate tailings will be deposited via a pipeline to the VMF). Constructed roads will be used to support operations and on-going monitoring and maintenance of the TMF dams and pipelines. Water management complexity is likely to be high as Alternative J drains to both Genessee Lake and Dixie Lake prior to draining to Dixie Creek.	At closure a vegetative overburden cover will be placed on the desulphurized tailings surface, and the area will be seeded. Once water quality is suitable, drainage from Alternative J will be restored towards Genessee Lake and Dixie Lake.
Alternative O	Construction will include the development of single cell used for the storage and containment of the desulphurized tailings. Roads will be developed at this stage to support TMF site preparation and dam construction, including water crossings over Dixie Creek. The tailings will be contained by natural topography and a total of three dams with downstream slopes of 10H:1V. Dams will be constructed out of natural materials. During the construction phase, a pipeline and road will be constructed from the process plant to the TMF for the transfer of desulphurized tailings.	During operations desulphurized tailings will be deposited in Alternative O via a tailings pipeline with storage in the TMF (concentrate tailings will be deposited via a pipeline to the VMF). Constructed roads will be used to support operations and on-going monitoring and maintenance of the TMF dams and associated pipelines. Water management complexity is likely to be high as Alternative O is situated in the Dixie Creek south tributary catchment.	At closure a vegetative overburden cover will be placed on the desulphurized tailings surface, and the area will be seeded. Once water quality is suitable, drainage from Alternative O will be restored towards Dixie Creek.

Table 5-3: TMF Accounts, Sub-Accounts and Indicators

Account	Subaccount	Subaccount Rationale	Indicator	Indicator Rationale
Environmental	Fisheries Resources	During the alternatives assessment, the TMF was sited to avoid large lakes and large rivers where possible. However, several of the alternatives that were evaluated would overprint smaller bodies of water frequented by fish. Overprinting of waters frequented by fish will result in a change to fish habitat that would require fish habitat offset in accordance with the *Fisheries Act* and the MDMER.	Loss of Fish Habitat (Waterbodies)	There are numerous waterbodies surrounding the Project that are known to be frequented by fish. The TMF alternative locations have generally avoided large waterbodies, however, some of the alternatives overprint smaller waterbodies (ponds / small lakes). The alternatives that overprint waterbodies would require that new fish habitat be constructed under the *Fisheries Act* to avoid mitigate adverse impacts to fish and fish habitat. Alternatives that avoid or minimize overprinting waterbodies are preferred.
			Loss of Fish Habitat (Watercourses)	There are watercourses (intermittent, and/or permanently flowing) around the Project. Aquatic baseline studies were used to identify waterbodies and watercourses frequented by fish, where available, where information is limited or not available it was conservatively assumed that these watercourses are fish bearing, or are potentially frequented by fish and overprinting these watercourses would affect fish and fish habitat, which would require new offsetting habitat to be constructed under the *Fisheries Act*. Alternatives that avoid or minimize overprinting watercourses are preferred.
			Number of Watercourse Crossings	Haul roads and pipelines that cross watercourses have the potential to affect fish habitat by altering the watercourse embankments, channel and substrate characteristics. Vehicle traffic over crossings can further affect the quality of fish habitat through the deposition of fugitive dust or vehicular incidents. Alternatives that do not require roads or pipelines to cross watercourses are preferred.
	Atmospheric Emissions	Air and noise emissions resulting from construction and operation of the TMF could affect the ambient air and acoustic environments.	Noise Emissions	Construction and operation of the TMF will result in noise emissions that can increase ambient sound levels that could affect wildlife. TMF alternatives located in close proximity to the open pits will generally limit noise to areas also affected by acoustic emissions from the open pit and are preferred.
			Greenhouse Gases (GHG) Emissions	Emissions from the Project may add to global GHG emissions and ultimately contribute to climate change. TMF alternatives that require less dam fill material will require fewer truckloads and trips to transport the dam fill material, reducing the potential GHG emissions. The number of trucks for each alternative were evaluated considering that 1 haul truck could relocate about 14 Mt/year, for an assumed 1 year construction period. Alternatives, with a fewer number of trucks being required were considered preferred.
			Fugitive Dust	TMF alternatives have the potential to increase the risk to public health and safety from exposure to fugitive dust coming off the TMF. The quantity of fugitive dust production is considered to be proportional to the TMF tailings surface area that is subject to wind erosion. Alternatives that increase the risk to public health and safety from fugitive dust exposure should be avoided.
	Terrestrial and Water Resources	Terrestrial habitat will be lost from TMF overprinting of the land, although some habitat can be restored at closure. The Project terrestrial ecosystems vary within the general area. Alternatives with a more compact TMF footprint would have less of an impact on the terrestrial ecosystem and were preferred. Additionally, direct overprinting by the TMF to drainage channels or changes to the local flows and water levels can alter the localized hydrology in the area. These alterations may result in water quality that could harm aquatic species and other animals using the water and may potentially affect the traditional land use of the water.	TMF Footprint	The TMF will overprint the terrestrial ecosystems. The total footprint of the TMF is a good metric for estimating impacts to terrestrial ecosystems. In general, a smaller TMF footprint would have fewer effects on the terrestrial environment and is preferred.
			Number of Subcatchment Areas Affected	Great Bear Resources prefers to keep the majority of the TMF footprint within the minimum number of subcatchment areas to limit the potential extent of environmental effects, to the extent practicable. Alternatives that are located in a single subcatchment area are preferred to alternatives that overprint multiple subcatchment areas. Overprinting of multiple subcatchment areas could result in effects to the surface water and groundwater quantities. Subcatchments will be evaluated to major tributaries such as, Dixie Creek (North / South), Gullrock Lake, Chukuni River, etc.
			Haul / Access Road Corridors	TMF alternatives that are located further from the process plant increase the segregation of habitat areas and corridors used by wildlife. Road networks increase the likelihood of vehicle collisions with wildlife and create physical barriers for some forms of wildlife. Alternatives that are located closer to the process plant, resulting in decreased road lengths are preferred and assumed to reduce these effects.
	Species at Risk	Some species are sensitive or at risk of disappearing in Ontario or in Canada and have been afforded special protections. During terrestrial baseline studies SAR were identified in the Project. Alternatives that have greater potential to harm these species (wolverine, caribou, avian and bat SAR) should be avoided.	Direct Loss of Wolverine Habitat	During baseline studies, wolverine or evidence of wolverine were observed on the Property, with wolverine sightings captured on trail cameras. Wolverine that disperse across the landscape could be negatively affected by the proposed Project. Therefore, the loss of wolverine habitat should be minimized. Alternatives that avoid potential wolverine habitat are preferred.
			Direct Loss of Caribou Habitat	The Project area is located in the Sydney Range for caribou which is federally and provincially regulated habitat for caribou. Provincial habitat mapping for Sydney Range has the Property classified as Category 3 habitat. Category 3 areas are defined as having a high tolerance to alteration before the function is compromised. These areas indirectly support boreal caribou by maintaining (buffering) the overall predator refuge function within their range. They are comprised of currently young vegetation communities such as regenerating burn areas that are less than 40 years old. These areas are not generally occupied for long periods of time; however, boreal caribou may travel through them. Consistent with this Category 3 classification, baseline studies did not observe evidence of caribou on the Property. The loss of potential caribou habitat should be minimized with smaller TMF footprints, or footprints that avoid potential caribou habitat being preferred.
			Direct Loss of Avian SAR Habitat	During baseline studies a number of avian SAR were observed at the Property. Breeding habitat for avian SAR species should be avoided. The ecosites with confirmation of avian SAR habitat included marsh wetlands and shorelines, alternatives avoiding these areas are preferred.
			Direct Loss of Bat Foraging Habitat	The wetland, riparian and forested habitat in the Project area provides forage and maternity roosting habitat for SAR bats. The overprinting of these ecosites by the TMF will reduce / remove suitable habitat. The loss of SAR bat habitat should be minimized with alternatives that avoid bat habitat being preferred.
			Direct Loss of Bat Maternity Roosting Habitat	

Account	Subaccount	Subaccount Rationale	Indicator	Indicator Rationale
Technical	Design and Construction Factors	Engineering design factors for the TMF include some of the key contributions to the technical complexity of TMF alternatives. Alternatives that are less technically challenging, are likely to be characterized as lower risk are generally preferred.	Storage to Dam Construction Fill Volume Ratio	Increasing the storage volume to dam construction fill volume ratio can increase the efficiency of the TMF. Further, alternatives with high storage volume to dam volume ratios are generally easier to construct and require less material to build and are preferred.
			Total Number of Independent Water and Tailings Management Dams	TMF designs with fewer dams are preferred.
			Total Length of Water and Tailings Management Dams	TMF designs with shorter total dam lengths are preferred.
			Complexity of Seepage Collection Pumping System	Seepage management complexity for the TMF was assumed to be proportional to the number of the seepage sump locations with fewer seepage sump locations are preferred.
	Technical Considerations	Great Bear Resources knows that safety is a primary concern when designing the TMF and as such, each alternative considered can be designed to achieve the minimum required factor of safety. However, some technical factors have the potential to increase the risk or have a potential higher consequence, require increased monitoring and maintenance required for Project safety and are preferred to be avoided.	Maximum TMF Dam Height	In general, it was assumed that there was a proportional increase in the potential consequence of failure with an increase in dam height. In the unlikely event of failure, taller facilities have greater potential energy to move materials. Shorter dam heights were therefore considered to incur less risk and are preferred.
			Dam Monitoring and Maintenance Requirements	Great Bear Resources will be required to monitor and maintain the TMF dams during both operations, closure and post-closure until such a time that the regulatory authority has deemed the site remediated and no further monitoring is required. Alternatives with a higher area based on linear length and dam height was assumed to increase the safety risk and were assumed to require additional monitoring and potentially additional maintenance. TMF alternatives with a smaller dam area were preferred.
Economics	Capital Costs	TMF construction often require extensive dam earthworks or costly dewatering plans and as such, capital costs required for the TMF are a key consideration. Other capital costs may include but are not limited to: site clearing, infrastructure for water management and treatment, access roads, pipelines and seepage collection infrastructure.	Site Preparation and TMF Dam Construction Costs	Site preparation and construction of the TMF dams can be a notable capital cost. Site preparation and dam construction costs can be minimized by alternatives that are contained by natural topography. Alternatives that have a smaller footprint and decreased dam construction requirements from a capital cost perspective are preferred.
			Road Construction	During the construction phase, roads will need to be constructed to the TMF location for dam construction. During this phase, roads will also be constructed along the desulphurized pipeline alignment prior to the processing of ore. Alternatives located closer to the process plant, are assumed to have lower road construction costs and are preferred.
			Habitat Offset / Compensation Costs	Capital costs for construction of aquatic habitat offset / compensation features can be substantial. These features are normally required to be constructed early in the project life, generally as the construction impacts are implemented. Lower costs associated with habitat offset / compensation are preferred.
			Conveyance Costs (Pipeline, Conveyor, Stacker, Trucks)	The TMF will require supporting infrastructure for conveyance of tailings including but not limited to: pipelines, conveyor, stacker and trucks. Alternatives with lower costs associated for conveyance of tailings being preferred.
			Seepage Collection Infrastructure Costs	Seepage collection infrastructure typically includes both the perimeter ditching around the TMF, as well as the seepage collection ponds and/or sump locations. The cost of the seepage collection infrastructure cannot be deferred to revenue and is entirely funded by Project capital. Alternatives that require less seepage collection infrastructure and have lower costs are therefore preferred.
	Operating Cost	Operational costs for the Great Bear Project, include tailings deposition and water management which directly affect the economics for Project. These expenses occur at regular intervals throughout the life of the mine.	Annual Tailings Operating Costs	Operating cost differentials between alternatives can be estimated by the distance required to transport the tailings (power and pumping) to the TMF. Annual operating costs are driven by a number of factors and are combined into a single indicator for order of magnitude operating costs.
			Water Treatment Costs	TMF contact water will require treatment prior to discharge to the environment. Water treatment costs are assumed to be proportional to the volume of TMF contact water requiring treatment, with smaller quantities requiring treatment being preferred.
	Closure Cost	Following cessation of operations, the TMF will be decommissioned and rehabilitated to a stable and more ecologically productive state, in accordance with regulatory requirements. Higher closure costs will increase the requirement for closure bonding associated with the TMF and Project and will ultimately affect overall project financial performance.	TMF Cover and Reclamation Costs	At closure, the TMF footprint will be contoured and vegetated, where possible and in accordance with the Closure Plan requirements. Closure will require management for the potential generation of ML / ARD which varies for the alternatives. Alternatives with lower reclamation costs are preferred.
			Road Reclamation Costs	Haul and access road infrastructure will need to be closed and reclaimed at closure. Alternatives with lower associated reclamation costs being preferred.
			Water Management Infrastructure Reclamation Costs	Water management infrastructure will need to be closed and reclaimed at closure. Water management infrastructure requiring remediation at closure may include spillways, ponds and pipelines. Alternatives with lower closure costs associated with their water management infrastructure are preferred.
			Inspection / Maintenance / Operations / Monitoring Costs	Great Bear Resources will be required to monitor and maintain the TMF during operations and following closure until the Ministry of Energy and Mines has deemed that the Project is remediated, and no further monitoring is required. Great Bear Resources expects the monitoring and maintenance requirements for the TMF to be proportional to the length of the TMF dams. Alternatives with shorter dam length are preferred from a post-closure cost perspective.

Account	Subaccount	Subaccount Rationale	Indicator	Indicator Rationale
Socio-economic	Indigenous Land Use	Great Bear Resources recognizes that Indigenous engagement is an integral part of the process through the permitting / approval and design phases which are influenced by Indigenous values and Indigenous knowledge. Great Bear Resources continues to engage with Indigenous communities to better understand these values in order to design the Great Bear Project such that it avoids or minimizes related effects to Indigenous peoples.	Wild Rice Fields	During consultation for the Project, wild rice fields were identified as being of interest to Indigenous communities. However, wild rice fields observed in the Project area have not been confirmed to be used by Indigenous Peoples. Alternatives that avoid wild rice fields are generally preferred.
			Moose Late Wintering Habitat	During consultation for the Project, moose were identified as being of special importance to Indigenous communities. In the Project are, Moose use the habitat for both late wintering and foraging. Both habitat types were considered, with the less loss of overall moose habitat being preferred.
			Moose Foraging Habitat	
			Loss of Indigenous Land Uses	The lands around the Project may be used by Indigenous communities to support trapping, hunting and harvesting of traditional foods. TMF alternatives with larger terrestrial footprints will remove a greater footprint of land that may have been used for hunting and harvesting of traditional foods. Alternatives that affect less potential undisturbed areas that may support Indigenous land uses including fishing, hunting areas (moose) and potential plant (berry) harvesting areas are preferred.
			Loss of Aquatics-based Harvesting Opportunities	Fishing is common throughout the region and alternatives that affect less lake habitat are preferred. Wild rice harvesting may also occur, and wild rice lakes are preferentially avoided.
	Potential Adverse Safety and Environmental Consequences	TMF alternatives that have the potential to have harmful consequences in the unlikely event of a release of either tailings and/or water from the TMF.	Public Safety Hazard Potential (Runout)	Each alternative will be designed and constructed to meet all appropriate factors of safety. That stated, some of the alternatives have a greater hazard potential in regard to the environment and public safety based in the unlikely event of a failure of the facility, and the distance the potential runout of the tailings. Alternatives with a further runout distance to a named receptor (e.g., Dixie Creek) being preferred.
			Public Safety Hazard Potential (Dam Height)	Each alternative will be designed and constructed to meet all appropriate factors of safety. That stated, some of the alternatives have a greater hazard potential in regard to the environment and public safety based in the unlikely event of a failure of the facility, and the distance the potential runout of the tailings. Alternatives with higher TMF dam heights are inferred to have a higher risk. Therefore, alternatives with lower maximum dam heights are preferred.
			Aesthetics	The maximum elevation of the TMF was assessed as being proportional to the visibility of the alternatives. Alternatives with a lower maximum elevation are preferred from an aesthetics perspective.

Table 5-4: TMF Alternative Characterization

Account	Indicator	Parameter	Unit	Alternative E	Alternative G	Alternative H	Alternative I	Alternative J	Alternative O
Environmental	Loss of Fish Habitat (Waterbodies)	Area of waterbodies overprinted	ha	1.6	0.3	2.1	0.0	0.0	0.0
	Loss of Fish Habitat (Watercourses)	Length of stream loss of potential fish habitat	km	5.1	4.8	9.5	1.4	0.0	6.3
	Number of Watercourse Crossings	Number of watercourse crossings	#	2	1	3	1	3	1
	Noise Emissions	Distance from the TMF to the open pits	km	4.9	4.5	8.8	7.4	7.5	2.3
	GHG Emissions	Number of trucks	#	1	4	2	8	7	4
	Fugitive Dust	TMF tailings surface footprint	ha	312.0	271.0	503.0	333.0	188.0	322.0
	TMF Footprint	TMF footprint	ha	344.7	456.0	606.0	601.0	340.0	490.0
	Number of Subcatchment Areas Affected	Number of subcatchments	#	1	4	1	3	2	3
	Haul / Access Road Corridors	Length of roads	km	4.5	2.1	5.7	5.7	5.2	2.7
	Direct Loss of Wolverine Habitat	Loss of wolverine habitat	ha	89.9	0.0	64.6	4.6	0.0	85.1
	Direct Loss of Caribou Habitat	Loss of caribou habitat	ha	134.6	136.1	134.7	106.3	96.4	279.6
	Direct Loss of Avian SAR Habitat	Loss of avian SAR habitat	ha	344.7	456.0	606.0	601.0	340.0	490.0
	Direct Loss of Bat Foraging Habitat	Loss of bat foraging habitat	ha	103.3	19.2	148.7	18.0	13.1	125.0
	Direct Loss of Maternity Roosting Habitat	Loss of bat maternity roosting habitat	ha	298.5	270.8	496.7	333.0	180.7	305.8
Technical	Storage to Dam Construction Fill Volume Ratio	Storage ratio	-	14.72	2.40	6.00	1.40	1.50	2.50
	Total Number of Independent Water and Tailings Management Dams	Number of dams	#	3	3	2	1	1	3
	Total Length of Water and Tailings Management Dams	Length of dams	m	5,568.0	6,003.0	5,062.0	6,278.0	5,722.0	5,176.0
	Complexity of Seepage Collection Pumping System	Number of sump locations	#	4	12	6	7	5	11
	Maximum TMF Dam Height	Maximum dam height	m	18.0	45.0	26.0	37.0	60.0	33.0
	Dam Monitoring and Maintenance Requirements	Area (Length times dam height) to be monitored	m^2	100,224	270,135	131,612	232,286	343,320	170,808
Economics	Site Preparation and Initial TMF Dam Construction Costs	Cost (millions)	$	$89.7	$507.7	$241.5	$893.2	$714.3	$467.3
	Road Construction	Cost (millions)	$	$0.7	$0.3	$0.9	$0.9	$0.8	$0.4
	Habitat Offset/Compensation Costs	Cost (millions)	$	$6.2	$5.4	$11.2	$1.5	$0.0	$7.0
	Conveyance Costs (Pipeline, Conveyor, Stacker, Trucks)	Cost (millions)	$	$2.98	$2.57	$3.30	$5.38	$3.65	$3.54
	Seepage Collection Infrastructure Costs	Cost	$	$2.7	$7.4	$4.2	$4.7	$3.6	$6.8
	Annual Tailings Operating Costs	Proportional to tailings pipeline	km	8.5	7.3	9.4	15.4	10.4	10.1
	Water Treatment Costs	Cost (millions)	$	$2.4	$1.8	$6.0	$2.2	$1.2	$2.1
	TMF Cover and Reclamation Costs	Cost (millions)	$	$20.1	$14.9	$27.7	$18.3	$10.3	$17.7
	Road Reclamation Costs	Cost (millions)	$	$0.045	$0.021	$0.057	$0.057	$0.052	$0.027
	Water Management Infrastructure Reclamation Costs	Cost (millions)	$	$15.0	$11.1	$2.1	$13.7	$7.7	$13.2
	Inspection / Maintenance / Operations / Monitoring Costs	Length of dam to inspect	m	5,568	6,003	5,062	6,278	5,722	5,176
Socio-economic	Wild Rice Fields	Loss of wild rice fields	ha	0	0	0	0	0	0
	Moose Late Wintering Habitat	Loss of moose late wintering habitat	ha	307.1	283.0	563.9	340.3	184.5	337.7
	Moose Foraging Habitat	Loss of moose foraging habitat	ha	4.6	0.0	32.7	0.1	0.1	26.0
	Loss of Indigenous Land Uses	TMF footprint	ha	344.7	456.0	606.0	601.0	340.0	490.0
	Public Safety Hazard Potential (Runout)	Shortest distance to named receptor	km	3.00	1.00	1.50	0.75	0.50	2.50
	Public Safety Hazard Potential (Dam Height)	Maximum dam height	m	18.0	45.0	26.0	37.0	60.0	33.0
	Aesthetics	Maximum elevation of TMF	masl	418.0	405.0	386.0	384.5	430.0	380.0

Table 5-5: TMF Valuating Criteria

Account	Indicator	Parameter	Indicator Value					
			6 (Best)	5	4	3	2	1 (Worst)
Environmental	Loss of Fish Habitat (Waterbodies)	Area of waterbodies overprinted	0 ha	0.1 to 0.4 ha	0.5 to 0.9 ha	1.0 to 1.4 ha	1.5 to 1.9 ha	≥2.0 ha
	Loss of Fish Habitat (Watercourses)	Length of stream loss of potential fish habitat	0 km	0.1 to 2.2 km	2.3 to 4.4 km	4.5 to 6.7 km	6.8 to 8.9 km	≥9.0 km
	Number of Watercourse Crossings	Number of watercourse crossings	0	1	2	3	4	5
	Noise Emissions	Distance from the TMF to the open pits	<4.0 km	4.0 to 4.9 km	5.0 to 5.9 km	6.0 to 6.9 km	7.0 to 7.9 km	≥8.0 km
	GHG Emissions	Number of trucks	1	2	3	4	5	≥ 6
	Fugitive Dust	TMF tailings surface footprint	<200.0 ha	200.0 to 274.9 ha	275.0 to 349.9 ha	350.0 to 424.9 ha	425.0 to 499.9 ha	≥500.0 ha
	TMF Footprint	TMF footprint	<400.0 ha	400.0 to 424.9 ha	425.0 to 449.9 ha	450.0 to 474.9 ha	475.0 to 499.9 ha	≥500.0 ha
	Number of Subcatchment Areas Affected	Number of subcatchments	1	2	3	4	5	6
	Haul / Access Road Corridors	Length of roads	<2.50 km	2.50 to 3.24 km	3.25 to 3.99 km	4.00 to 4.74 km	4.75 to 5.49 km	≥5.50 km
	Direct Loss of Wolverine Habitat	Loss of wolverine habitat	<2.0 ha	2.0 to 22.7 ha	22.8 to 43.4 ha	43.5 to 64.2 ha	64.3 to 84.9 ha	≥85.0 ha
	Direct Loss of Caribou Habitat	Loss of caribou habitat	<100.0 ha	100.0 to 137.4 ha	137.5 to 174.9 ha	175.0 to 212.4 ha	212.5 to 249.9 ha	≥250.0 ha
	Direct Loss of Avian SAR Habitat	Loss of avian SAR breeding habitat	<400.0 ha	400.0 to 449.9 ha	450.0 to 499.9 ha	500.0 to 549.9 ha	550.0 to 599.9 ha	≥600.0 ha
	Direct Loss of Bat Foraging Habitat	Loss of bat foraging habitat	<15.0 ha	15.0 to 46.2 ha	46.3 to 77.4 ha	77.5 to 108.7 ha	108.8 to 139.9 ha	≥140.0 ha
	Direct Loss of Maternity Roosting Habitat	Loss of bat maternity roosting habitat	<200.0 ha	200.0 to 262.4 ha	262.5 to 324.9 ha	325.0 to 387.4 ha	387.5 to 449.9 ha	≥450.0 ha
Technical	Storage to Dam Construction Fill Volume Ratio	Storage ratio	>7.50	7.50 to 6.01	6.00 to 4.51	4.50 to 3.01	3.00 to 1.51	≤1.50
	Total Number of Independent Water and Tailings Management Dams	Number of dams	1	2	3	4	5	6
	Total Length of Water and Tailings Management Dams	Length of dams	<5,000.0 m	5,000.0 to 5,249.9 m	5,250.0 to 5,499.9 m	5,500.0 to 5,749.9 m	5,750.0 to 5,999.9 m	≥6,000.0 m
	Complexity of Seepage Collection Pumping System	Number of sump locations	<6	6	7	8	9	≥10
	Maximum TMF Dam Height	Maximum dam height	<30.0 m	30.0 to 34.9 m	35.0 to 39.9 m	40.0 to 44.9 m	45.0 to 49.9 m	≥50.0 m
	Dam Monitoring and Maintenance Requirements	Area (Length times dam height) to be monitored	<125,000 m^2	125,000 to 168,749 m^2	168,750 to 212,499 m^2	212,500 to 256,249 m^2	256,250 to 299,999 m^2	≥300,000 m^2
Economics	Site Preparation and Initial TMF Dam Construction Costs	Cost (millions)	<$200.0	$200.0 to $349.9	$350.0 to $499.9	$500.0 to $649.9	$650.0 to $799.9	≥$800.0
	Road Construction	Cost (millions)	<$0.30	$0.30 to $0.44	$0.45 to $0.59	$0.60 to $0.74	$0.75 to $0.89	≥$0.90
	Habitat Offset / Compensation Costs	Cost (millions)	<$1.0	$1.0 to $3.2	$3.3 to $5.4	$5.5 to $7.7	$7.8 to $9.9	≥$10.0
	Conveyance Costs (Pipeline, Conveyor, Stacker, Trucks)	Cost (millions)	<$3.00	$3.00 to $3.49	$3.50 to $3.99	$4.00 to $4.49	$4.50 to $4.99	≥$5.00
	Seepage Collection Infrastructure Costs	Cost	<$3.0	$3.0 to $3.9	$4.0 to $4.9	$5.0 to $5.9	$6.0 to $6.9	≥$7.0
	Annual Tailings Operating Costs	Proportional to tailings pipeline	<7.5 km	7.5 to 9.3 km	9.4 to 11.2 km	11.3 to 13.0 km	13.1 to 14.9 km	≥15.0 km
	Water Treatment Costs	Cost (millions)	<$2.0	$2.0 to $2.9	$3.0 to $3.9	$4.0 to $4.9	$5.0 to $5.9	≥$6.0
	TMF Cover and Reclamation Costs	Cost (millions)	<$10.0	$10.0 to $13.7	$13.8 to $17.4	$17.5 to $21.2	$21.3 to $24.9	≥$25.0
	Road Reclamation Costs	Cost (millions)	<$0.025	$0.025 to $0.032	$0.033 to $0.039	$0.040 to $0.047	$0.048 to $0.054	≥$0.055
	Water Management Infrastructure Reclamation Costs	Cost (millions)	<$3.0	$3.0 to $5.9	$6.0 to $8.9	$9.0 to $11.9	$12.0 to $14.9	≥$15.0
	Inspection / Maintenance / Operations / Monitoring Costs	Length of dam to inspect	<5,000 m	5,000 to 5,249 m	5,250 to 5,499 m	5,500 to 5,749 m	5,750 to 5,999 m	≥6,000 m
Socio-economic	Wild Rice Fields	Loss of wild rice fields	0 ha	0.1 to 2.4 ha	2.5 to 4.9 ha	5.0 to 7.4 ha	7.5 to 9.9 ha	≥10.0 ha
	Moose Late Wintering Habitat	Loss of moose late wintering habitat	<200.0 ha	200.0 to 274.9 ha	275.0 to 349.9 ha	350.0 to 424.9 ha	425.0 to 499.9 ha	≥500.0 ha
	Moose Foraging Habitat	Loss of moose foraging habitat	<2.0 ha	2.0 to 8.9 ha	9.0 to 15.9 ha	16.0 to 22.9 ha	23.0 to 29.9 ha	≥30.0 ha
	Loss of Indigenous Land Uses	TMF footprint	<400.0 ha	400.0 to 449.9 ha	450.0 to 499.9 ha	500.0 to 549.9 ha	550.0 to 599.9 ha	≥600.0 ha
	Public Safety Hazard Potential (Runout)	Shortest distance to named receptor	>3.00 km	3.00 to 2.39 km	2.38 to 1.76 km	1.75 to 1.14 km	1.13 to 0.51 km	≤0.50 km
	Public Safety Hazard Potential (Dam Height)	Maximum TMF dam height	<30.0 m	30.0 to 34.9 m	35.0 to 39.9 m	40.0 to 44.9 m	45.0 to 49.9 m	≥50.0 m
	Aesthetics	Maximum elevation of TMF	<390.0 masl	390.0 to 398.7 masl	398.8 to 407.4 masl	407.5 to 416.2 masl	416.3 to 424.9 masl	≥425.0 masl

Table 5-6: TMF Weights and Scores for Multiple Accounts Analysis

Account	Weight	Subaccount	Weight	Indicator	Weight	Alternative E	Alternative G	Alternative H	Alternative I	Alternative J	Alternative O
Environmental	6	Fisheries Resources	6	Loss of Fish Habitat (Waterbodies)	6	2	5	1	6	6	6
				Loss of Fish Habitat (Watercourses)	5	3	3	1	5	6	3
				Number of Watercourse Crossings	4	4	5	3	5	3	5
		Atmospheric Emissions	2	Noise Emissions	1	5	5	1	2	2	6
				GHG Emissions	1	6	3	5	1	1	3
				Fugitive Dust	2	4	5	1	4	6	4
		Terrestrial and Water Resources	3	TMF Footprint	5	6	3	1	1	6	2
				Number of Subcatchment Areas Affected	5	6	3	6	4	5	4
				Haul / Access Road Corridors	2	3	6	1	1	2	5
		Species at Risk	6	Direct Loss of Wolverine Habitat	4	1	6	2	5	6	1
				Direct Loss of Caribou Habitat	3	5	5	5	5	6	1
				Direct Loss of Avian SAR Habitat	2	6	4	1	1	6	4
				Direct Loss of Bat Foraging Habitat	2	3	5	1	5	6	2
				Direct Loss of Maternity Roosting Habitat	2	4	4	1	3	6	4
Technical	3	Design and Construction Factors	6	Storage to Dam Construction Fill Volume Ratio	5	6	2	4	1	1	2
				Total Number of Independent Water and Tailings Management Dams	2	4	4	5	6	6	4
				Total Length of Water and Tailings Management Dams	4	3	1	5	1	3	5
				Complexity of Seepage Collection Pumping System	2	6	1	5	4	6	1
		Technical Considerations	6	Maximum TMF Dam Height	6	6	2	6	4	1	5
				Dam Monitoring and Maintenance Requirements	6	6	2	5	3	1	4
Economics	1.5	Capital Costs	6	Site Preparation and Initial TMF Dam Construction Costs	6	6	3	5	1	2	4
				Road Construction	2	3	5	1	1	2	5
				Habitat Offset / Compensation Costs	4	3	4	1	5	6	3
				Conveyance Costs (Pipeline, Conveyor, Stacker, Trucks)	3	6	6	5	1	4	4
				Seepage Collection Infrastructure Costs	2	6	1	4	4	5	2
		Operating Cost	4	Annual Tailings Operating Costs	4	5	6	4	1	4	4
				Water Treatment Costs	4	5	6	1	5	6	5
		Closure Cost	5	TMF Cover and Reclamation Costs	5	3	4	1	3	5	3
				Road Reclamation Costs	2	3	6	1	1	2	5
				Water Management Infrastructure Reclamation Costs	4	1	3	6	2	4	2
				Inspection / Maintenance / Operations /Monitoring Costs	3	3	1	5	1	3	5
Socio-economic	3	Indigenous Land Uses	4	Wild Rice	2	6	6	6	6	6	6
				Moose Late Wintering Habitat	3	4	4	1	4	6	4
				Moose Foraging Habitat	3	5	6	1	6	6	2
				Loss of Indigenous Land Uses	4	6	4	1	1	6	4
		Potential Adverse Safety and Environmental Consequences	6	Public Safety Hazard Potential (Runout)	6	5	2	3	2	1	5
				Public Safety Hazard Potential (Dam Height)	6	6	2	6	4	1	5
				Aesthetics	1	2	4	6	6	1	6

Table 5-7: TMF Environment Indicator Analysis

Sub-Account	Indicator	Weight	Alternative E		Alternative G		Alternative H		Alternative I		Alternative J		Alternative O	
			Value	Score	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score
Fisheries Resources	Loss of Fish Habitat (Waterbodies)	6	2	12	5	30	1	6	6	36	6	36	6	36
	Loss of Fish Habitat (Watercourses)	5	3	15	3	15	1	5	5	25	6	30	3	15
	Number of Watercourse Crossings	4	4	16	5	20	3	12	5	20	3	12	5	20
	Sub Account Merit Score (S{S x W})		43		65		23		81		78		71	
	Sub Account Merit Rating (Rs = S{S x W}/SW)		*2.9*		*4.3*		*1.5*		*5.4*		*5.2*		*4.7*	
Atmospheric Emissions	Noise Emissions	1	5	5	5	5	1	1	2	2	2	2	6	6
	GHG Emissions	1	6	6	3	3	5	5	1	1	1	1	3	3
	Fugitive Dust	2	4	8	5	10	1	2	4	8	6	12	4	8
	Sub Account Merit Score (S{S x W})		19		18		8		11		15		17	
	Sub Account Merit Rating (Rs = S{S x W}/SW)		*4.8*		*4.5*		*2.0*		*2.8*		*3.8*		*4.3*	
Terrestrial and Water Resources	TMF Footprint	5	6	30	3	15	1	5	1	5	6	30	2	10
	Number of Subcatchment Areas Affected	5	6	30	3	15	6	30	4	20	5	25	4	20
	Haul / Access Road Corridors	2	3	6	6	12	1	2	1	2	2	4	5	10
	Sub Account Merit Score (S{S x W})		66		42		37		27		59		40	
	Sub Account Merit Rating (Rs = S{S x W}/SW)		5.5		3.5		3.1		2.3		4.9		3.3	
Species at Risk	Direct Loss of Wolverine Habitat	4	1	4	6	24	2	8	5	20	6	24	1	4
	Direct Loss of Caribou Habitat	3	5	15	5	15	5	15	5	15	6	18	1	3
	Direct Loss of Avian SAR Habitat	2	6	12	4	8	1	2	1	2	6	12	4	8
	Direct Loss of Bat Foraging Habitat	2	3	6	5	10	1	2	5	10	6	12	2	4
	Direct Loss of Maternity Roosting Habitat	2	4	8	4	8	1	2	3	6	6	12	4	8
	Sub Account Merit Score (S{S x W})		45		65		29		53		78		27	
	Sub Account Merit Rating (Rs = S{S x W}/SW)		*3.5*		*5.0*		*2.2*		*4.1*		*6.0*		*2.1*	

Table 5-8: TMF Technical Indicator Analysis

Sub-Account	Indicator	Weight	Alternative E		Alternative G		Alternative H		Alternative I		Alternative J		Alternative O	
			Value	Score	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score
Design and Construction Factors	Storage to Dam Construction Fill Volume Ratio	5	6	30	2	10	4	20	1	5	1	5	2	10
	Total Number of Independent Water and Tailings Management Dams	2	4	8	4	8	5	10	6	12	6	12	4	8
	Total Length of Water and Tailings Management Dams	4	3	12	1	4	5	20	1	4	3	12	5	20
	Complexity of Seepage Collection Pumping System	2	6	12	1	2	5	10	4	8	6	12	1	2
	Sub Account Merit Score (S{S x W})		62		24		60		29		41		40	
	Sub Account Merit Rating (Rs = S{S x W}/SW)		*4.8*		*1.8*		*4.6*		*2.2*		*3.2*		*3.1*	
Technical Considerations	Maximum TMF Dam Height	6	6	36	2	12	6	36	4	24	1	6	5	30
	Dam Monitoring and Maintenance Requirements	6	6	36	2	12	5	30	3	18	1	6	4	24
	Sub Account Merit Score (S{S x W})		72		24		66		42		12		54	
	Sub Account Merit Rating (Rs = S{S x W}/SW)		*6.0*		*2.0*		*5.5*		*3.5*		*1.0*		*4.5*	

Table 5-9: TMF Project Economics Indicator Analysis

Sub-Account	Indicator	Weight	Alternative E		Alternative G		Alternative H		Alternative I		Alternative J		Alternative O	
			Value	Score	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score
Capital Costs	Site Preparation and Initial TMF Dam Construction Costs	6	6	36	3	18	5	30	1	6	2	12	4	24
	Road Construction	2	3	6	5	10	1	2	1	2	2	4	5	10
	Habitat Offset / Compensation Costs	4	3	12	4	16	1	4	5	20	6	24	3	12
	Conveyance Costs (Pipeline, Conveyor, Stacker, Trucks)	3	6	18	6	18	5	15	1	3	4	12	4	12
	Seepage Collection Infrastructure Costs	2	6	12	1	2	4	8	4	8	5	10	2	4
	Sub Account Merit Score (S{S x W})		84		64		59		39		62		62	
	Sub Account Merit Rating (Rs = S{S x W}/SW)		*4.9*		*3.8*		*3.5*		*2.3*		*3.6*		*3.6*	
Operating Cost	Annual Tailings Operating Costs	4	5	20	6	24	4	16	1	4	4	16	4	16
	Water Treatment Costs	4	5	20	6	24	1	4	5	20	6	24	5	20
	Sub Account Merit Score (S{S x W})		40		48		20		24		40		36	
	Sub Account Merit Rating (Rs = S{S x W}/SW)		*5.0*		*6.0*		*2.5*		*3.0*		*5.0*		*4.5*	
Closure Cost	TMF Cover and Reclamation Costs	5	3	15	4	20	1	5	3	15	5	25	3	15
	Road Reclamation Costs	2	3	6	6	12	1	2	1	2	2	4	5	10
	Water Management Infrastructure Reclamation Costs	4	1	4	3	12	6	24	2	8	4	16	2	8
	Inspection / Maintenance / Operations / Monitoring Costs	3	3	9	1	3	5	15	1	3	3	9	5	15
	Sub Account Merit Score (S{S x W})		34		47		46		28		54		48	
	Sub Account Merit Rating (Rs = S{S x W}/SW)		*2.4*		*3.4*		*3.3*		*2.0*		*3.9*		*3.4*	

Table 5-10: TMF Socio-economic Indicator Analysis

Sub-Account	Indicator	Weight	Alternative E		Alternative G		Alternative H		Alternative I		Alternative J		Alternative O	
			Value	Score	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score
Indigenous Land Use	Wild Rice	2	6	12	6	12	6	12	6	12	6	12	6	12
	Moose Late Wintering Habitat	3	4	12	4	12	1	3	4	12	6	18	4	12
	Moose Foraging Habitat	3	5	15	6	18	1	3	6	18	6	18	2	6
	Loss of Indigenous Land Uses	4	6	24	4	16	1	4	1	4	6	24	4	16
	Sub Account Merit Score (S{S x W})		63		58		22				72		46	
	Sub Account Merit Rating (Rs = S{S x W}/SW)		*5.3*		*4.8*		*1.8*		*3.8*		*6.0*		*3.8*	
Potential Adverse Safety and Environmental Consequences	Public Safety Hazard Potential (Runout)	6	5	30	2	12	3	18	2	12	1	6	5	30
	Public Safety Hazard Potential (Dam Height)	6	6	36	2	12	6	36	4	24	1	6	5	30
	Aesthetics	1	2	2	4	4	6	6	6	6	1	1	5	5
	Sub Account Merit Score (S{S x W})		68		28		60		42		13		66	
	Sub Account Merit Rating (Rs = S{S x W}/SW)		*5.2*		*2.2*		*4.6*		*3.2*		*1.0*		*5.1*	

Table 5-11: TMF Environment Sub-Account Analysis

Sub-Account	Weight	Alternative E		Alternative G		Alternative H		Alternative I		Alternative J		Alternative O	
		Rating	Score	Rating	Score	Rating	Score	Rating	Score	Rating	Score	Rating	Score
Fisheries Resources	6	2.9	17.2	4.3	26.0	1.5	9.2	5.4	32.4	5.2	31.2	4.7	28.4
Atmospheric Emissions	2	4.8	9.5	4.5	9.0	2.0	4.0	2.8	5.5	3.8	7.5	4.3	8.5
Terrestrial and Water Resources	3	5.5	16.5	3.5	10.5	3.1	9.3	2.3	6.8	4.9	14.8	3.3	10.0
Species at Risk	6	3.5	20.8	5.0	30.0	2.2	13.4	4.1	24.5	6.0	36.0	2.1	12.5
Account Merit Score		64.0		75.5		35.8		69.1		89.5		59.4	
Account Merit Rating		*3.8*		*4.4*		*2.1*		*4.1*		*5.3*		*3.5*	

Table 5-12: TMF Technical Sub-Account Analysis

Sub-Account	Weight	Alternative E		Alternative G		Alternative H		Alternative I		Alternative J		Alternative O	
		Rating	Score	Rating	Score	Rating	Score	Rating	Score	Rating	Score	Rating	Score
Design and Construction Factors	6	4.8	28.6	1.8	11.1	4.6	27.7	2.2	13.4	3.2	18.9	3.1	18.5
Technical Considerations	6	6.0	36.0	2.0	12.0	5.5	33.0	3.5	21.0	1.0	6.0	4.5	27.0
Account Merit Score		64.6		23.1		60.7		34.4		24.9		45.5	
Account Merit Rating		*5.4*		*1.9*		*5.1*		*2.9*		*2.1*		*3.8*	

Table 5-13: TMF Project Economics Sub-Account Analysis

Sub-Account	Weight	Alternative E		Alternative G		Alternative H		Alternative I		Alternative J		Alternative O	
		Rating	Score	Rating	Score	Rating	Score	Rating	Score	Rating	Score	Rating	Score
Capital Costs	6	4.9	29.6	3.8	22.6	3.5	20.8	2.3	13.8	3.6	21.9	3.6	21.9
Operating Cost	4	5.0	20.0	6.0	24.0	2.5	10.0	3.0	12.0	5.0	20.0	4.5	18.0
Closure Cost	5	2.4	12.1	3.4	16.8	3.3	16.4	2.0	10.0	3.9	19.3	3.4	17.1
Account Merit Score		61.8		63.4		47.3		35.8		61.2		57.0	
Account Merit Rating		*4.1*		*4.2*		*3.2*		*2.4*		*4.1*		*3.8*	

Table 5-14: TMF Project Socio-economic Sub-Account Analysis

Sub-Account	Weight	Alternative E		Alternative G		Alternative H		Alternative I		Alternative J		Alternative O	
		Rating	Score	Rating	Score	Rating	Score	Rating	Score	Rating	Score	Rating	Score
Indigenous Land Use	4	5.3	21.0	4.8	19.3	1.8	7.3	3.8	15.3	6.0	24.0	3.8	15.3
Potential Adverse Safety and Environmental Consequences	6	5.2	31.4	2.2	12.9	4.6	27.7	3.2	19.4	1.0	6.0	5.1	30.5
Account Merit Score		52.4		32.3		35.0		34.7		30.0		45.8	
Account Merit Rating		*5.2*		*3.2*		*3.5*		*3.5*		*3.0*		*4.6*	

Table 5-15: TMF Multiple Accounts Analysis Summary

Account	Weight	Alternative E		Alternative G		Alternative H		Alternative I		Alternative J		Alternative O	
		Rating	Score	Rating	Score	Rating	Score	Rating	Score	Rating	Score	Rating	Score
Environment	6	3.8	22.6	4.4	26.6	2.1	12.6	4.1	24.4	5.3	31.6	3.5	21.0
Technical	3	5.4	16.2	1.9	5.8	5.1	15.2	2.9	8.6	2.1	6.2	3.8	11.4
Project Economics	1.5	4.1	6.2	4.2	6.3	3.2	4.7	2.4	3.6	4.1	6.1	3.8	5.7
Socio-economic	3	5.2	15.7	3.2	9.7	3.5	10.5	3.5	10.4	3.0	9.0	4.6	13.7
Alternative Merit Score		60.6		48.4		43.1		47.0		52.9		51.8	
Alternative Merit Rating		*4.5*		*3.6*		*3.2*		*3.5*		*3.9*		*3.8*	

Table 5-16: TMF Sensitivity Analysis

	Alternative E	Alternative G	Alternative H	Alternative I	Alternative J	Alternative O
Base Case	**4.5**	3.6	3.2	3.5	3.9	3.8
Case 1	**4.6**	3.5	3.5	3.2	3.6	3.9
Case 2	**4.6**	3.7	3.5	3.3	3.7	4.0
Case 3	**4.6**	3.6	3.1	3.6	3.9	4.0
Case 4	**4.6**	3.5	3.3	3.4	3.9	3.8
Case 5	**4.5**	3.5	3.2	3.6	3.9	3.8

Notes:
***Bold** indicates preferred Alternative*

Table 5-17: Pre-Screening of Alternative Tailings Disposal Technologies

Alternative Tailings Disposal Method	Is the tailings disposal method feasible with the Project mine plan? (yes / no)	Does the tailings disposal method provide a benefit from Thickened technology [base case]? (yes / no)	Does the tailings disposal method reduce risk of Project cost escalation (capital costs and operating costs) over the life of the Project? (yes / no)
ATD #1: Thickened Tailings Slurry	Yes	Base case for comparison	Yes
ATD #2: Thickened Tailings	Yes	No	Yes
ATD #3 :High-Density Thickened Tailings	Yes	Yes	Yes
ATD #4: Paste Tailings	Yes	No	Yes
ATD #5: Filtered Tailings	Yes	No	Yes
ATD #6: Tailings and Mine Rock Co-Disposal	No	Yes	No

MUNICIPALITY OF RED LAKE
RED LAKE
RANGER LAKE
LITTLE TROUT LAKE
TROUT LAKE CONSERVATION RESERVE
SOBEL LAKE
125
RED LAKE - CHUKUNI RIVER
KEG LAKE
MADSEN
WILLANS LAKE
FLAT LAKE
FAULKENHAM LAKE
SULLY LAKE
GULLROCK LAKE
10 KM
TWO ISLAND LAKE
MOOSE CREEK
CHUKUNI RIVER OUTLET
GULLROCK LAKE - CHUKUNI RIVER
105
BUG LAKE
STONE LAKE
D
E
F
INSECT LAKE
GENESSEE LAKE
A
M
CHUKUNI RIVER
SNAIL LAKE
TROUTLAKE RIVER OUTLET
H
J
G
UNNAMED WATERBODY 6
DIXIE CREEK
DIXIE CREEK CATCHMENT
O
C
EAST LAKE
I
DIXIE LAKE
K
BRUCE LAKE
BRUCE LAKE CONSERVATION RESERVE
HIEWALL LAKE
TOTE ROAD LAKE
DIXIE CREEK SOUTH TRIBUTARY SUBCATCHMENT
L
DIXIE CREEK NORTH TRIBUTARY SUBCATCHMENT
B
N
PAKWASH PROVINCIAL PARK
PAKWASH LAKE
BEAUREGARD LAKE
PAKWASH PROVINCIAL PARK
TOWNSHIP OF EAR FALLS
GOOSE LAKE - ENGLISH RIVER
LONGLEGGED LAKE
WILCOX LAKE - ENGLISH RIVER
DETECTOR LAKE
CHUKUNI RIVER
GOOSE LAKE - ENGLISH RIVER

LEGEND

- APPROXIMATE OPEN PIT CENTROID
- OPEN PIT
- OPEN PIT CENTROID BUFFER (LABELED ON MAP)
- PROPERTY BOUNDARY
- TOWN
- PROVINCIAL PARK
- PROVINCIAL PARK 500 M BUFFER
- CONSERVATION RESERVE
- EXISTING TRANSMISSION LINE
- HIGHWAY
- LOCAL ROAD
- LOWER TIER MUNICIPAL BOUNDARY
- WATERCOURSE
- WATERBODY
- CONTOURS (10 M INTERVAL)
- QUATERNARY CATCHMENT
- DIXIE CREEK SUBCATCHMENT

TAILINGS MANAGEMENT FACILITY ALTERNATIVES

- ALTERNATIVE A
- ALTERNATIVE B
- ALTERNATIVE C
- ALTERNATIVE D
- ALTERNATIVE E
- ALTERNATIVE F
- ALTERNATIVE G
- ALTERNATIVE H
- ALTERNATIVE I
- ALTERNATIVE J
- ALTERNATIVE K
- ALTERNATIVE L
- ALTERNATIVE M
- ALTERNATIVE N
- ALTERNATIVE O

0 2.5 5 10
1:170,000 KILOMETRES

NOTE(S)
1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)
1. CONTAINS INFORMATION LICENSED UNDER THE OPEN GOVERNMENT LICENCE - ONTARIO
2. WATERCOURSES AND WATERBODY ACQUIRED FROM LAND INFORMATION ONTARIO (MNRF) AND MODIFIED TO MATCH AERIAL IMAGERY AND LIDAR.
3. ROADS INFORMATION PROVIDED BY GREAT BEAR RESOURCES, AUGUST 2022.
4. PROPERTY BOUNDARY PROVIDED BY GREAT BEAR RESOURCES, AUGUST 2024.
5. COORDINATE SYSTEM: NAD 1983 UTM ZONE 15N

CLIENT
GREAT BEAR RESOURCES

PROJECT
GREAT BEAR PROJECT

TITLE
TAILINGS MANAGEMENT FACILITY ALTERNATIVE SITE LOCATIONS

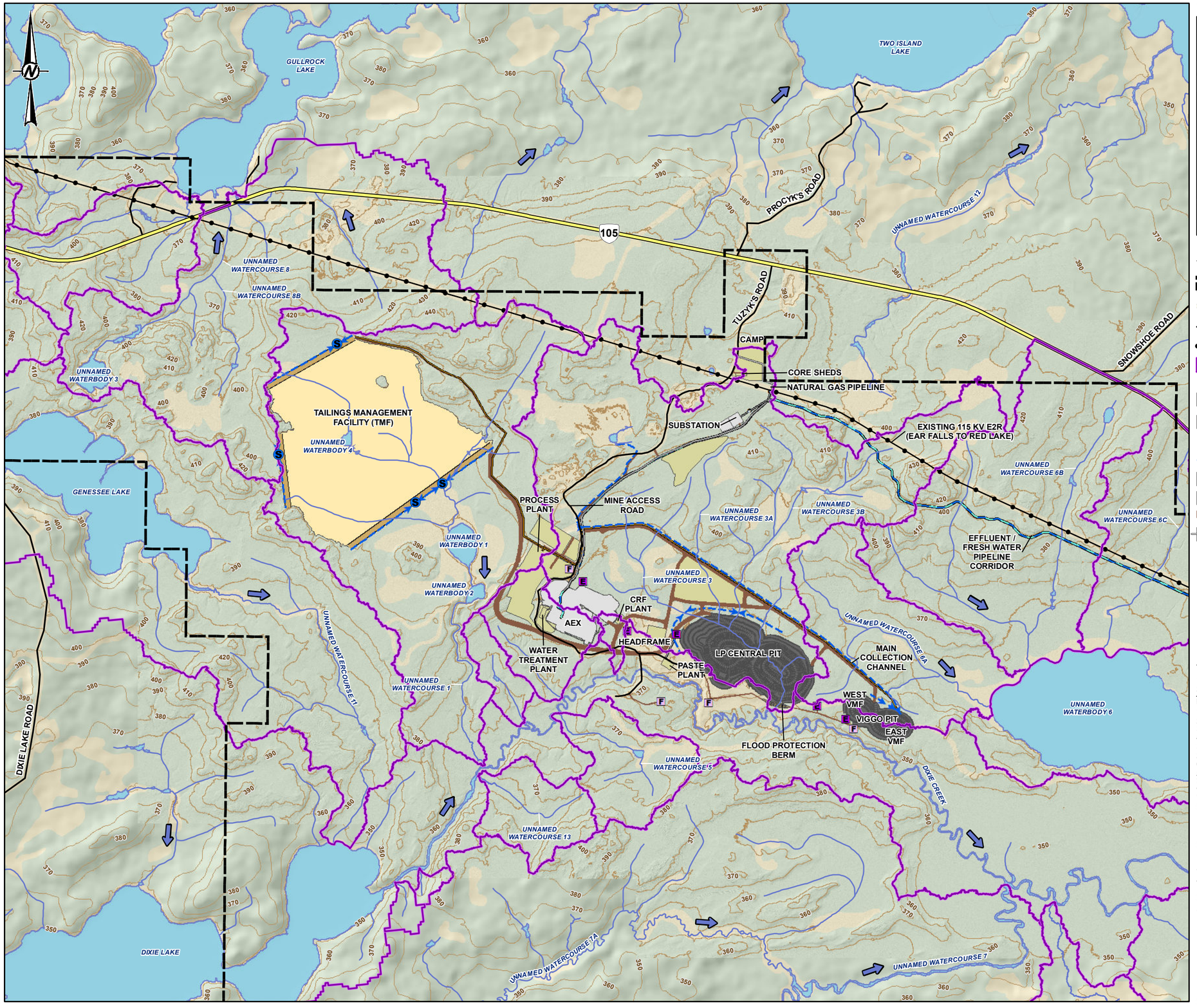
CONSULTANT
wsp

YYYY-MM-DD	2025-07-24
DESIGNED	----
PREPARED	MD
REVIEWED	HL
APPROVED	DR

PROJECT NO.	CONTROL	REV.	FIGURE
CA0031271	0001	A	5-1

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B
25mm
0

PATH: X:\CA\CAOAK300-OAK\MIS-FS1-Project\2023\Projects\OMEMA2303_Kinross_Great_Bear_Env\7_GIS\Alternatives_Assessment\MXD\TMF_Alt_Overview_4.mxd PRINTED ON: 2025-07-24 AT: 3:03:31 PM



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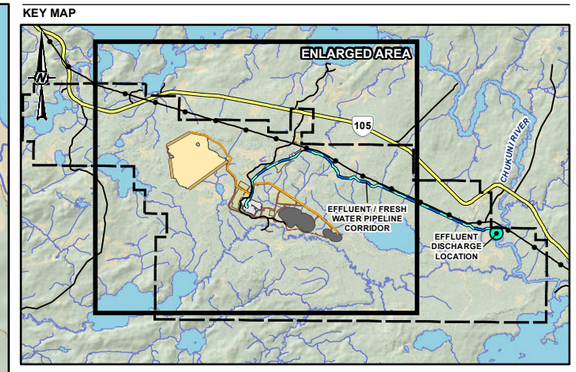

SCALE 1:235,000

LEGEND

- PROPERTY BOUNDARY
- HIGHWAY (INCLUDING NATURAL GAS PIPELINE)
- LOCAL ROAD
- EXISTING TRANSMISSION LINE
- LOCAL SUBCATCHMENT
- WATERCOURSE
- WATERBODY
- CONTOURS (10 M INTERVAL)
- FLOW DIRECTION

PROPOSED MINE FEATURE

- OPEN PIT
- TAILINGS MANAGEMENT FACILITY (TMF)
- SUMP
- COLLECTION DITCH
- MINE FACILITIES / INFRASTRUCTURE
- DAM
- ROAD
- ADVANCED EXPLORATION SITE (AEX)
- EXHAUST VENT RAISE
- FRESH AIR VENT RAISE
- TRANSMISSION LINE
- TAILINGS PIPELINE
- PASTE PLANT PIPELINE
- EFFLUENT / FRESH WATER PIPELINE CORRIDOR
- EFFLUENT DISCHARGE LOCATION

0 0.5 1 2

1:41,000 KILOMETRES

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE
2. VMF: VIGGO MANAGEMENT FACILITY

REFERENCE(S)

1. CONTAINS INFORMATION LICENSED UNDER THE OPEN GOVERNMENT LICENCE - ONTARIO
2. CONTOURS ACQUIRED FROM 2022 LIDAR SURVEY.
3. PROPERTY BOUNDARY PROVIDED BY GREAT BEAR RESOURCES, AUGUST 2024.
4. ROADS INFORMATION PROVIDED BY GREAT BEAR RESOURCES, AUGUST 2022.
5. SITE PLAN BASED ON INFORMATION PROVIDED BY GREAT BEAR RESOURCES, DECEMBER 2024 / JUNE 2025.
6. SUBCATCHMENT BOUNDARIES DELINEATED USING 2022 LIDAR AND THE ONTARIO FLOW ASSESSMENT TOOL (MNRF).
7. COORDINATE SYSTEM: NAD 1983 UTM ZONE 15N

CLIENT
GREAT BEAR RESOURCES

PROJECT
GREAT BEAR PROJECT

TITLE
TAILINGS MANAGEMENT FACILITY ALTERNATIVE E SITE CONFIGURATION

CONSULTANT

wsp

YYYY-MM-DD	2025-07-03
DESIGNED	----
PREPARED	MD
REVIEWED	HL
APPROVED	DR

PROJECT NO.	CONTROL	REV.	FIGURE
CA0031271	0001	A	5-2

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

0 25mm

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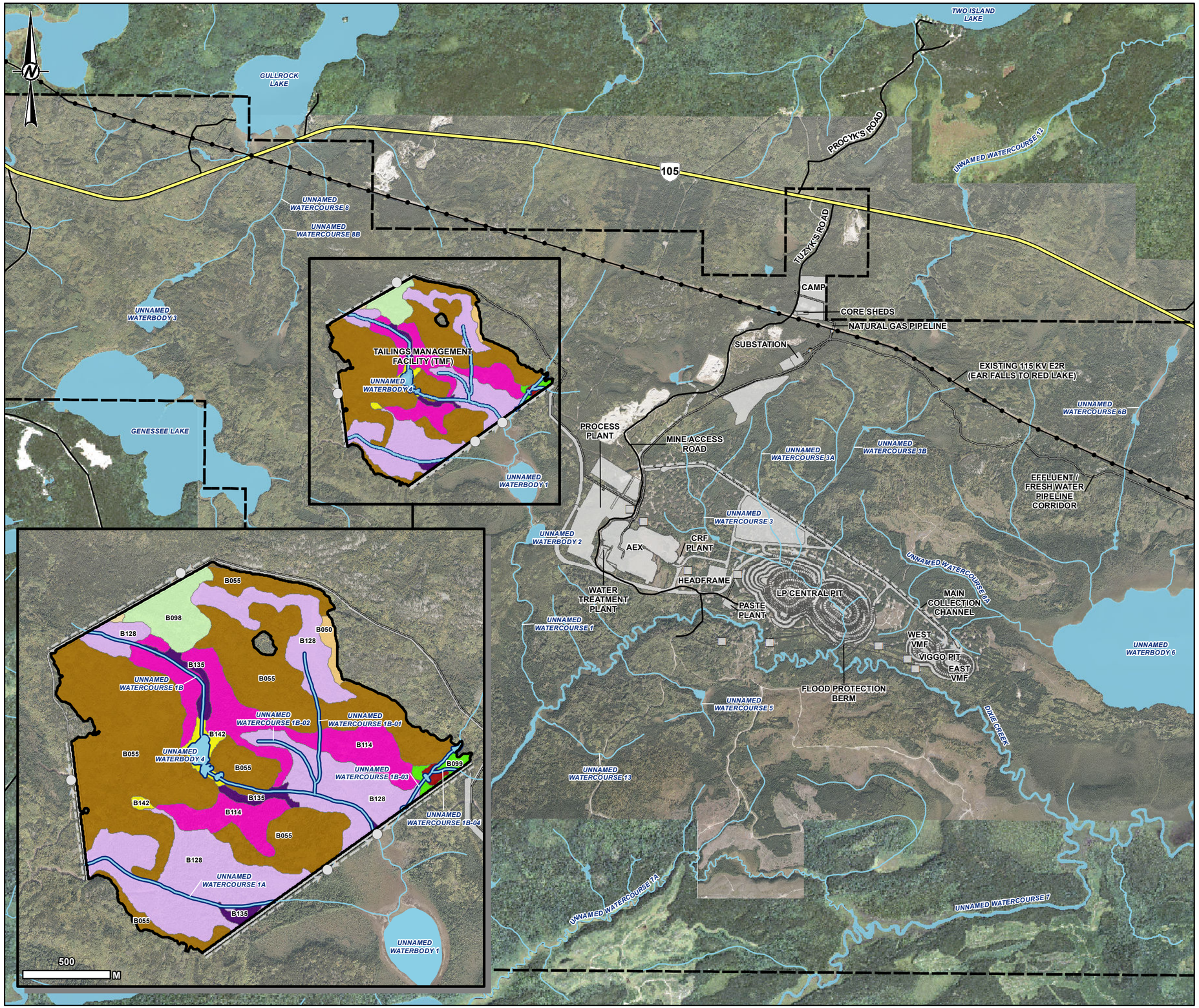

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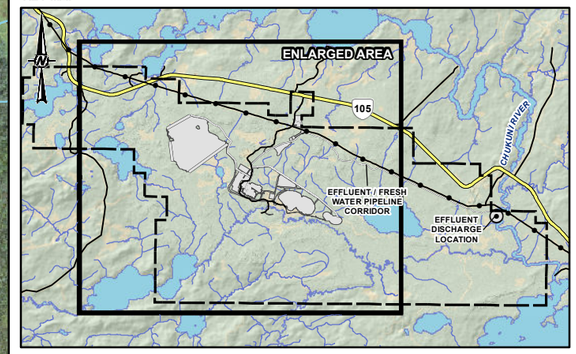

SCALE 1:235,000

LEGEND

- PROPERTY BOUNDARY
- PROPOSED TAILINGS MANAGEMENT FACILITY (TMF)
- OTHER PROPOSED MINE FEATURE
- HIGHWAY (INCLUDING NATURAL GAS PIPELINE)
- LOCAL ROAD
- EXISTING TRANSMISSION LINE
- WATERCOURSE
- WATERBODY
- IMPACTED WATERCOURSE
- IMPACTED WATERBODY

IMPACTED VEGETATION COMMUNITY

- B012: *VERY SHALLOW, DRY TO FRESH: PINE - BLACK SPRUCE CONIFER*
- B049: *DRY TO FRESH, COARSE: JACK PINE - BLACK SPRUCE DOMINATED*
- B050: *DRY TO FRESH, COARSE: PINE - BLACK SPRUCE CONIFER*
- B055: *DRY TO FRESH, COARSE: ASPEN - BIRCH HARDWOOD*
- B098: *FRESH, SILTY TO FINE LOAMY: JACK PINE - BLACK SPRUCE DOMINATED*
- B099: *FRESH, SILTY TO FINE LOAMY: PINE - BLACK SPRUCE CONIFER*
- B114: *MOIST, FINE: PINE - BLACK SPRUCE CONIFER*
- B128: *ORGANIC INTERMEDIATE CONIFER SWAMP*
- B135: *ORGANIC THICKET SWAMP*
- B136: *SPARSE TREED FEN*
- B140: *OPEN MODERATELY RICH FEN*
- B142: *MINERAL MEADOW MARSH*

0 0.5 1 2

1:41,000 KILOMETRES

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE
2. VMF: VIGGO MANAGEMENT FACILITY

REFERENCE(S)

1. CONTAINS INFORMATION LICENSED UNDER THE OPEN GOVERNMENT LICENCE - ONTARIO
2. AERIAL IMAGERY PROVIDED BY GREAT BEAR RESOURCES (SCENE DATE: SEPTEMBER 2022).
3. PROPERTY BOUNDARY PROVIDED BY GREAT BEAR RESOURCES, AUGUST 2024.
4. ROADS INFORMATION PROVIDED BY GREAT BEAR RESOURCES, AUGUST 2022.
5. SITE PLAN BASED ON INFORMATION PROVIDED BY GREAT BEAR RESOURCES, DECEMBER 2024 / JUNE 2025.
6. COORDINATE SYSTEM: NAD 1983 UTM ZONE 15N

CLIENT
GREAT BEAR RESOURCES

PROJECT
GREAT BEAR PROJECT

TITLE
TAILINGS MANAGEMENT FACILITY ALTERNATIVE E VEGETATION COMMUNITIES AND FISHERIES RESOURCES

CONSULTANT

wsp

YYYY-MM-DD	2025-07-03
DESIGNED	----
PREPARED	MD
REVIEWED	HL
APPROVED	DR

PROJECT NO.	CONTROL	REV.	FIGURE
CA0031271	0001	A	5-3

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

0 25mm

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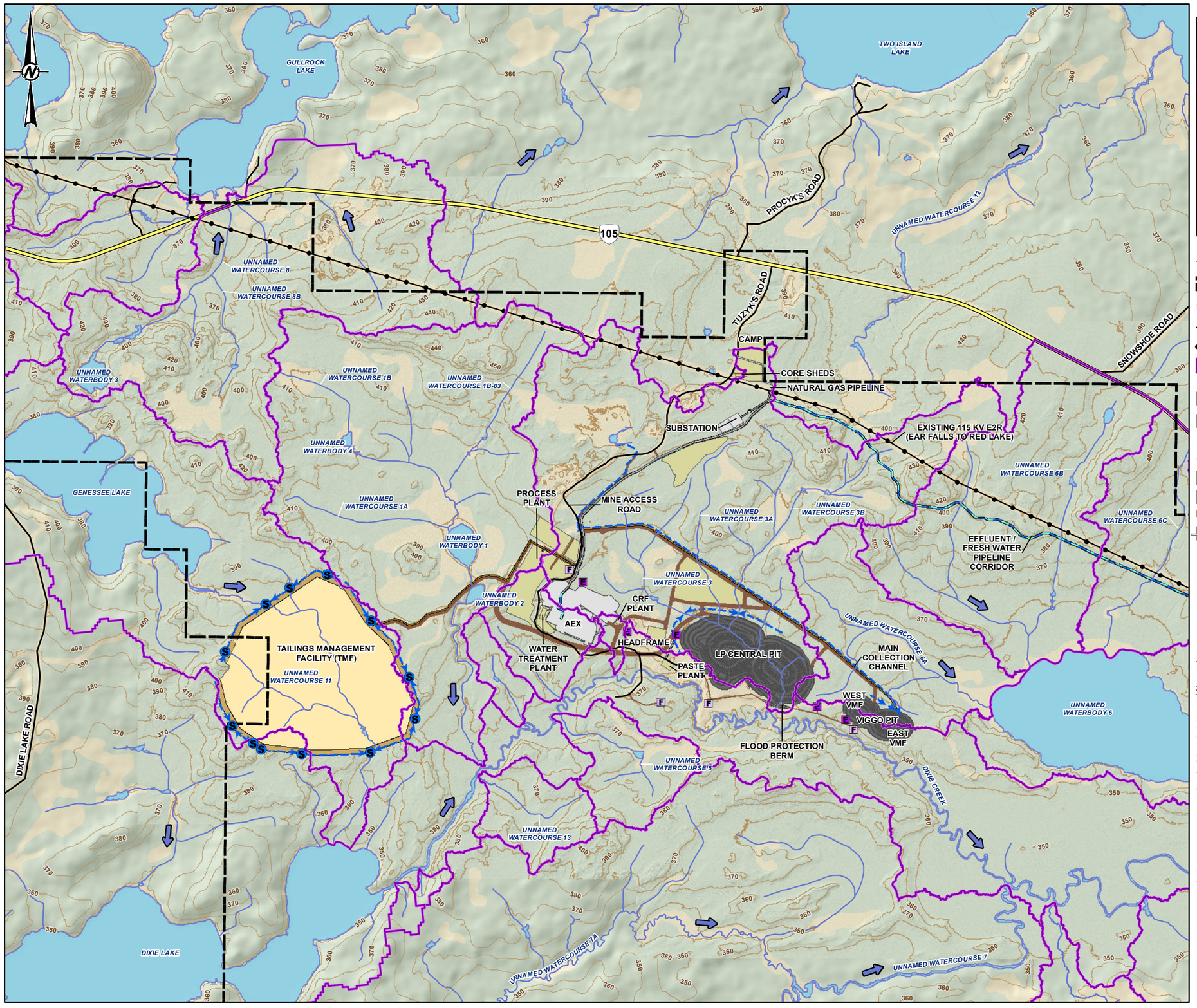

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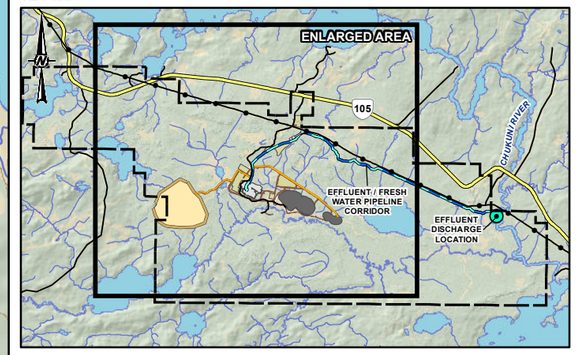

SCALE 1:235,000

LEGEND

- PROPERTY BOUNDARY
- HIGHWAY (INCLUDING NATURAL GAS PIPELINE)
- LOCAL ROAD
- EXISTING TRANSMISSION LINE
- LOCAL SUBCATCHMENT
- WATERCOURSE
- WATERBODY
- CONTOURS (10 M INTERVAL)
- FLOW DIRECTION

PROPOSED MINE FEATURE

- OPEN PIT
- TAILINGS MANAGEMENT FACILITY (TMF)
- SUMP
- COLLECTION DITCH
- MINE FACILITIES / INFRASTRUCTURE
- DAM
- ROAD
- ADVANCED EXPLORATION SITE (AEX)
- E EXHAUST VENT RAISE
- F FRESH AIR VENT RAISE
- TRANSMISSION LINE
- TAILINGS PIPELINE
- PASTE PLANT PIPELINE
- EFFLUENT / FRESH WATER PIPELINE CORRIDOR
- EFFLUENT DISCHARGE LOCATION

0 0.5 1 2

1:41,000 KILOMETRES

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE
2. VMF: VIGGO MANAGEMENT FACILITY

REFERENCE(S)

1. CONTAINS INFORMATION LICENSED UNDER THE OPEN GOVERNMENT LICENCE - ONTARIO
2. CONTOURS ACQUIRED FROM 2022 LIDAR SURVEY.
3. PROPERTY BOUNDARY PROVIDED BY GREAT BEAR RESOURCES, AUGUST 2024.
4. ROADS INFORMATION PROVIDED BY GREAT BEAR RESOURCES, AUGUST 2022.
5. SITE PLAN BASED ON INFORMATION PROVIDED BY GREAT BEAR RESOURCES, DECEMBER 2024 / JUNE 2025.
6. SUBCATCHMENT BOUNDARIES DELINEATED USING 2022 LIDAR AND THE ONTARIO FLOW ASSESSMENT TOOL (MNRF).
7. COORDINATE SYSTEM: NAD 1983 UTM ZONE 15N

CLIENT
GREAT BEAR RESOURCES

PROJECT
GREAT BEAR PROJECT

TITLE
TAILINGS MANAGEMENT FACILITY ALTERNATIVE G SITE CONFIGURATION

CONSULTANT

wsp

YYYY-MM-DD	2025-07-03
DESIGNED	----
PREPARED	MD
REVIEWED	HL
APPROVED	DR

PROJECT NO.	CONTROL	REV.	FIGURE
CA0031271	0001	A	5-4

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

0 25mm

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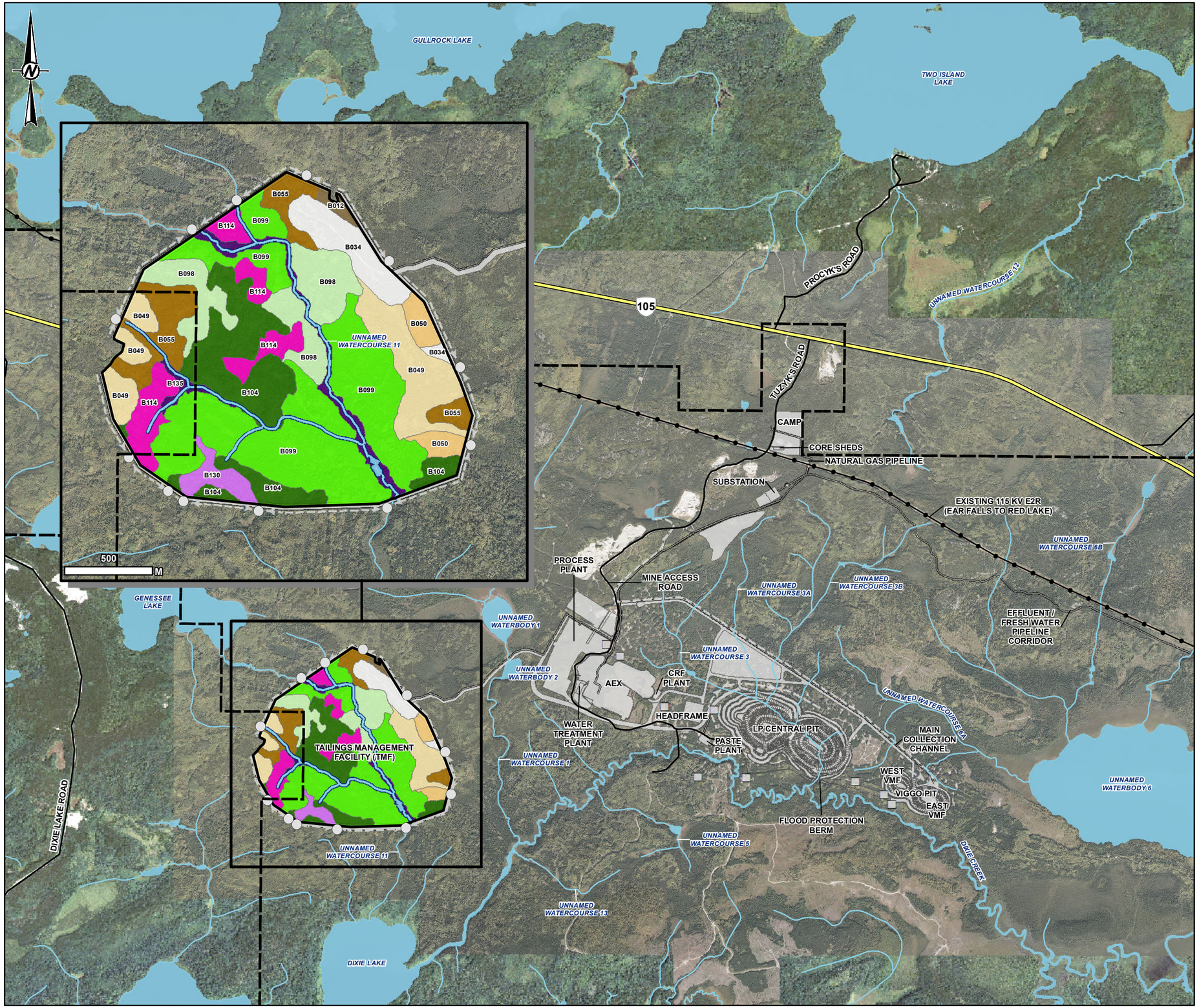

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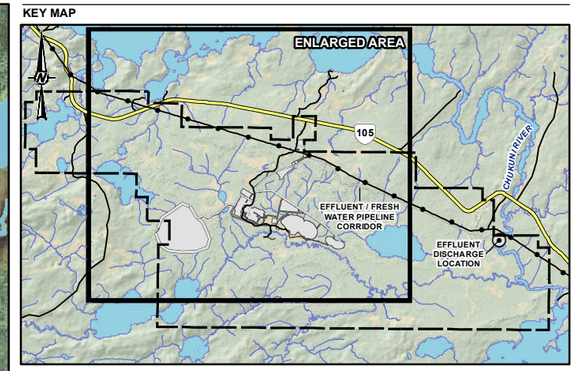


SCALE 1:235,000

LEGEND

- PROPERTY BOUNDARY
- PROPOSED TAILINGS MANAGEMENT FACILITY (TMF)
- OTHER PROPOSED MINE FEATURE
- HIGHWAY (INCLUDING NATURAL GAS PIPELINE)
- LOCAL ROAD
- EXISTING TRANSMISSION LINE
- WATERCOURSE
- WATERBODY
- IMPACTED WATERCOURSE
- IMPACTED WATERBODY

IMPACTED VEGETATION COMMUNITY

- B012: *VERY SHALLOW, DRY TO FRESH: PINE - BLACK SPRUCE CONIFER*
- B034: *DRY, SANDY: JACK PINE – BLACK SPRUCE DOMINATED*
- B049: *DRY TO FRESH, COARSE: JACK PINE - BLACK SPRUCE DOMINATED*
- B050: *DRY TO FRESH, COARSE: PINE - BLACK SPRUCE CONIFER*
- B055: *DRY TO FRESH, COARSE: ASPEN - BIRCH HARDWOOD*
- B098: *FRESH, SILTY TO FINE LOAMY: JACK PINE - BLACK SPRUCE DOMINATED*
- B099: *FRESH, SILTY TO FINE LOAMY: PINE - BLACK SPRUCE CONIFER*
- B104: *FRESH, SILTY TO FINE LOAMY: ASPEN - BIRCH HARDWOOD*
- B114: *MOIST, FINE: PINE - BLACK SPRUCE CONIFER*
- B119: *MOIST, FINE: ASPEN - BIRCH HARDWOOD*
- B130: *INTOLERANT HARDWOOD SWAMP*
- B135: *ORGANIC THICKET SWAMP*

0 0.5 1 2

1:41,000 KILOMETRES

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE
2. VMF: VIGGO MANAGEMENT FACILITY

REFERENCE(S)

1. CONTAINS INFORMATION LICENSED UNDER THE OPEN GOVERNMENT LICENCE - ONTARIO
2. AERIAL IMAGERY PROVIDED BY GREAT BEAR RESOURCES (SCENE DATE: SEPTEMBER 2022).
3. PROPERTY BOUNDARY PROVIDED BY GREAT BEAR RESOURCES, AUGUST 2024.
4. ROADS INFORMATION PROVIDED BY GREAT BEAR RESOURCES, AUGUST 2022.
5. SITE PLAN BASED ON INFORMATION PROVIDED BY GREAT BEAR RESOURCES, DECEMBER 2024 / JUNE 2025.
6. COORDINATE SYSTEM: NAD 1983 UTM ZONE 15N

CLIENT
GREAT BEAR RESOURCES

PROJECT
GREAT BEAR PROJECT

TITLE
TAILINGS MANAGEMENT FACILITY ALTERNATIVE G VEGETATION COMMUNITIES AND FISHERIES RESOURCES

CONSULTANT

wsp

YYYY-MM-DD	2025-07-03
DESIGNED	----
PREPARED	MD
REVIEWED	HL
APPROVED	DR

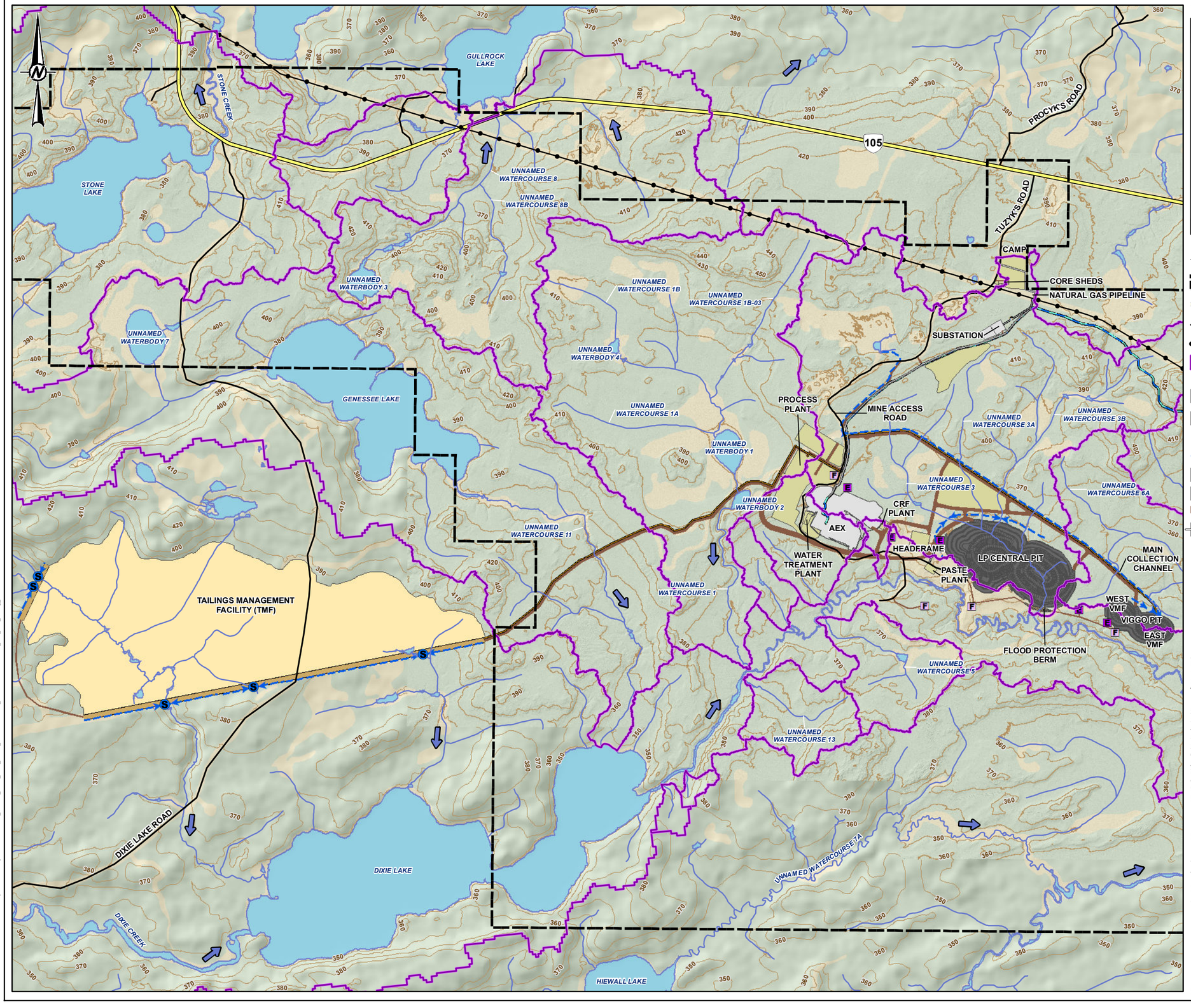
PROJECT NO.	CONTROL	REV.	FIGURE
CA0031271	0001	A	5-5

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

25mm

0

PATH: X:\CA\CAOAK300-OAKMIS-FS1-Project\P\2023Projects\OME\MA2103_Kinross_Great_Bear_Env\7_GIS\Alternatives_Assessment\MXD\TMF_Alt7_Impacts_4.mxd PRINTED ON: 2025-07-03 AT: 3:05:42 PM



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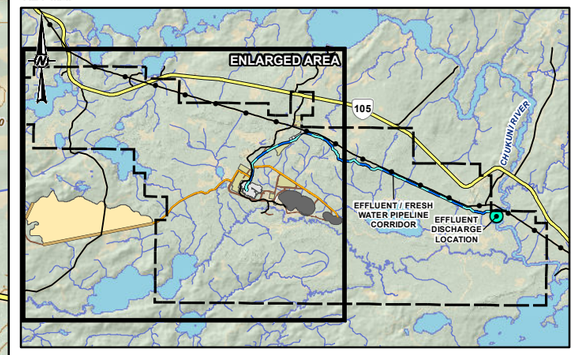

SCALE 1:235,000

LEGEND

- PROPERTY BOUNDARY
- HIGHWAY (INCLUDING NATURAL GAS PIPELINE)
- LOCAL ROAD
- EXISTING TRANSMISSION LINE
- LOCAL SUBCATCHMENT
- WATERCOURSE
- WATERBODY
- CONTOURS (10 M INTERVAL)
- FLOW DIRECTION

PROPOSED MINE FEATURE

- OPEN PIT
- TAILINGS MANAGEMENT FACILITY (TMF)
- SUMP
- COLLECTION DITCH
- MINE FACILITIES / INFRASTRUCTURE
- DAM
- ROAD
- ADVANCED EXPLORATION SITE (AEX)
- EXHAUST VENT RAISE
- FRESH AIR VENT RAISE
- TAILINGS PIPELINE
- TRANSMISSION LINE
- PASTE PLANT PIPELINE
- EFFLUENT / FRESH WATER PIPELINE CORRIDOR
- EFFLUENT DISCHARGE LOCATION

0 0.5 1 2

1:41,000 KILOMETRES

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE
2. VMF: VIGGO MANAGEMENT FACILITY

REFERENCE(S)

1. CONTAINS INFORMATION LICENSED UNDER THE OPEN GOVERNMENT LICENCE - ONTARIO
2. CONTOURS ACQUIRED FROM 2022 LIDAR SURVEY.
3. PROPERTY BOUNDARY PROVIDED BY GREAT BEAR RESOURCES, AUGUST 2024.
4. ROADS INFORMATION PROVIDED BY GREAT BEAR RESOURCES, AUGUST 2022.
5. SITE PLAN BASED ON INFORMATION PROVIDED BY GREAT BEAR RESOURCES, DECEMBER 2024 / JUNE 2025.
6. SUBCATCHMENT BOUNDARIES DELINEATED USING 2022 LIDAR AND THE ONTARIO FLOW ASSESSMENT TOOL (MNRF).
7. COORDINATE SYSTEM: NAD 1983 UTM ZONE 15N

CLIENT
GREAT BEAR RESOURCES

PROJECT
GREAT BEAR PROJECT

TITLE
TAILINGS MANAGEMENT FACILITY ALTERNATIVE H SITE CONFIGURATION

CONSULTANT

YYYY-MM-DD	2025-07-03
DESIGNED	----
PREPARED	MD
REVIEWED	HL
APPROVED	DR

PROJECT NO.	CONTROL	REV.	FIGURE
CA0031271	0001	A	5-6

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

0 25mm

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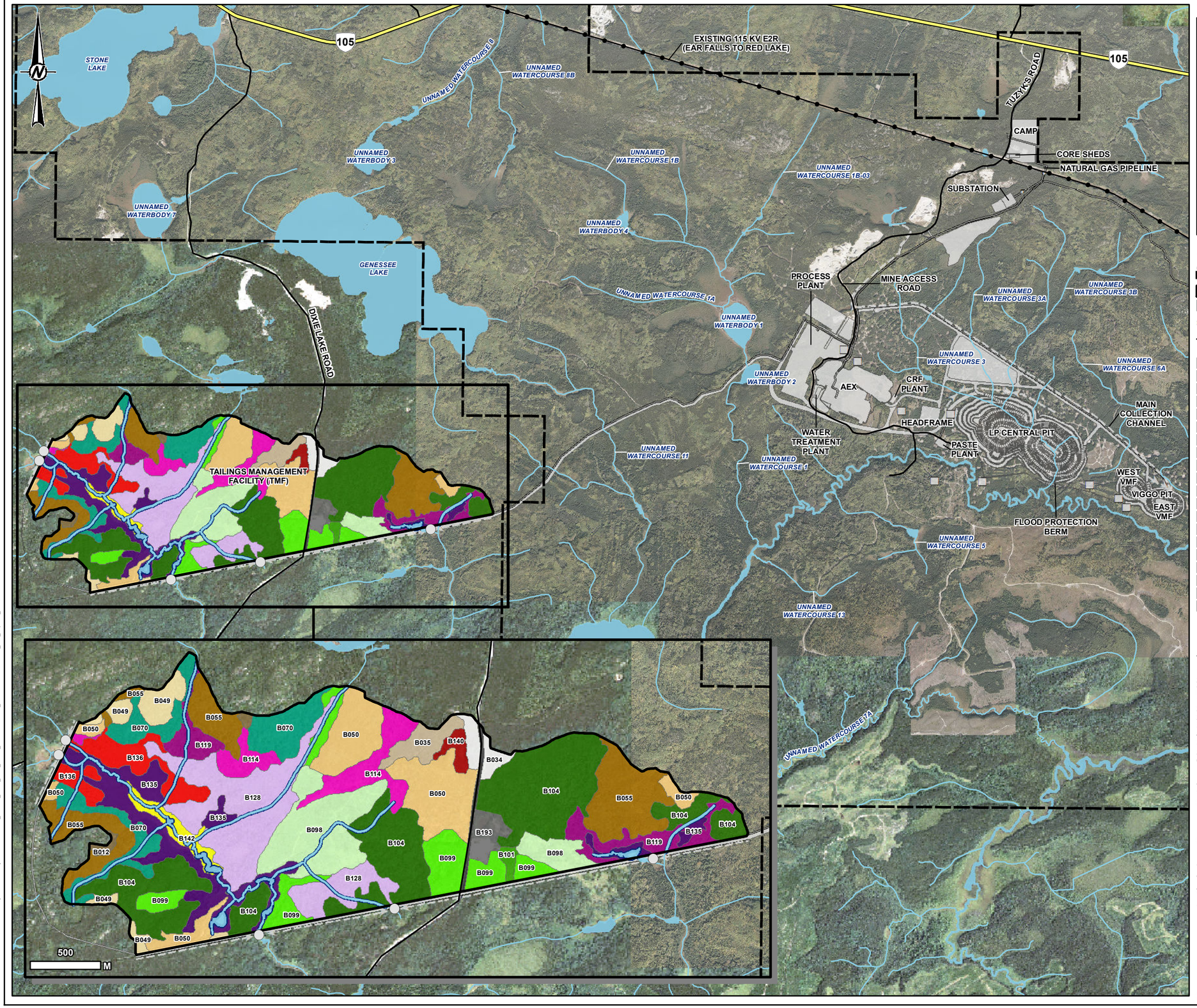

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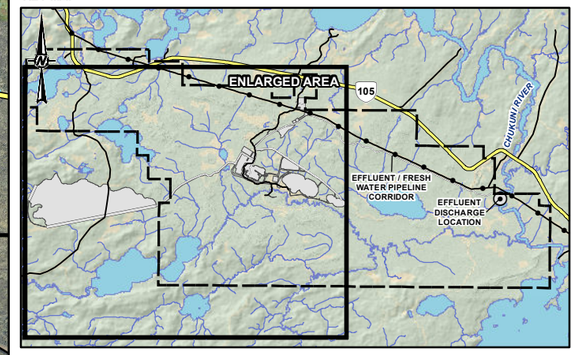

SCALE 1:235,000

LEGEND

- PROPERTY BOUNDARY
- PROPOSED TAILINGS MANAGEMENT FACILITY (TMF)
- OTHER PROPOSED MINE FEATURE
- HIGHWAY (INCLUDING NATURAL GAS PIPELINE)
- LOCAL ROAD
- EXISTING TRANSMISSION LINE
- WATERCOURSE
- WATERBODY
- IMPACTED WATERCOURSE
- IMPACTED WATERBODY

IMPACTED VEGETATION COMMUNITY

- B012: *VERY SHALLOW, DRY TO FRESH: PINE - BLACK SPRUCE CONIFER*
- B034: *DRY, SANDY: JACK PINE – BLACK SPRUCE DOMINATED*
- B035: *DRY, SANDY: PINE - BLACK SPRUCE CONIFER*
- B049: *DRY TO FRESH, COARSE: JACK PINE - BLACK SPRUCE DOMINATED*
- B050: *DRY TO FRESH, COARSE: PINE - BLACK SPRUCE CONIFER*
- B055: *DRY TO FRESH, COARSE: ASPEN - BIRCH HARDWOOD*
- B070: *MOIST, COARSE: ASPEN - BIRCH HARDWOOD*
- B098: *FRESH, SILTY TO FINE LOAMY: JACK PINE - BLACK SPRUCE DOMINATED*
- B099: *FRESH, SILTY TO FINE LOAMY: PINE - BLACK SPRUCE CONIFER*
- B101: *FRESH, SILTY TO FINE LOAMY: SPRUCE - FIR CONIFER*
- B104: *FRESH, SILTY TO FINE LOAMY: ASPEN - BIRCH HARDWOOD*
- B114: *MOIST, FINE: PINE - BLACK SPRUCE CONIFER*
- B119: *MOIST, FINE: ASPEN - BIRCH HARDWOOD*
- B128: *ORGANIC INTERMEDIATE CONIFER SWAMP*
- B135: *ORGANIC THICKET SWAMP*
- B136: *SPARSE TREED FEN*
- B140: *OPEN MODERATELY RICH FEN*
- B142: *MINERAL MEADOW MARSH*
- B193: *ACTIVE COARSE CLEAN FILL*
- B197: *PAVEMENT / CONCRETE*

0 0.5 1 2

1:41,000 KILOMETRES

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE
2. VMF: VIGGO MANAGEMENT FACILITY

REFERENCE(S)

1. CONTAINS INFORMATION LICENSED UNDER THE OPEN GOVERNMENT LICENCE - ONTARIO
2. AERIAL IMAGERY PROVIDED BY GREAT BEAR RESOURCES (SCENE DATE: SEPTEMBER 2022).
3. PROPERTY BOUNDARY PROVIDED BY GREAT BEAR RESOURCES, AUGUST 2024.
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6. COORDINATE SYSTEM: NAD 1983 UTM ZONE 15N

CLIENT
GREAT BEAR RESOURCES

PROJECT
GREAT BEAR PROJECT

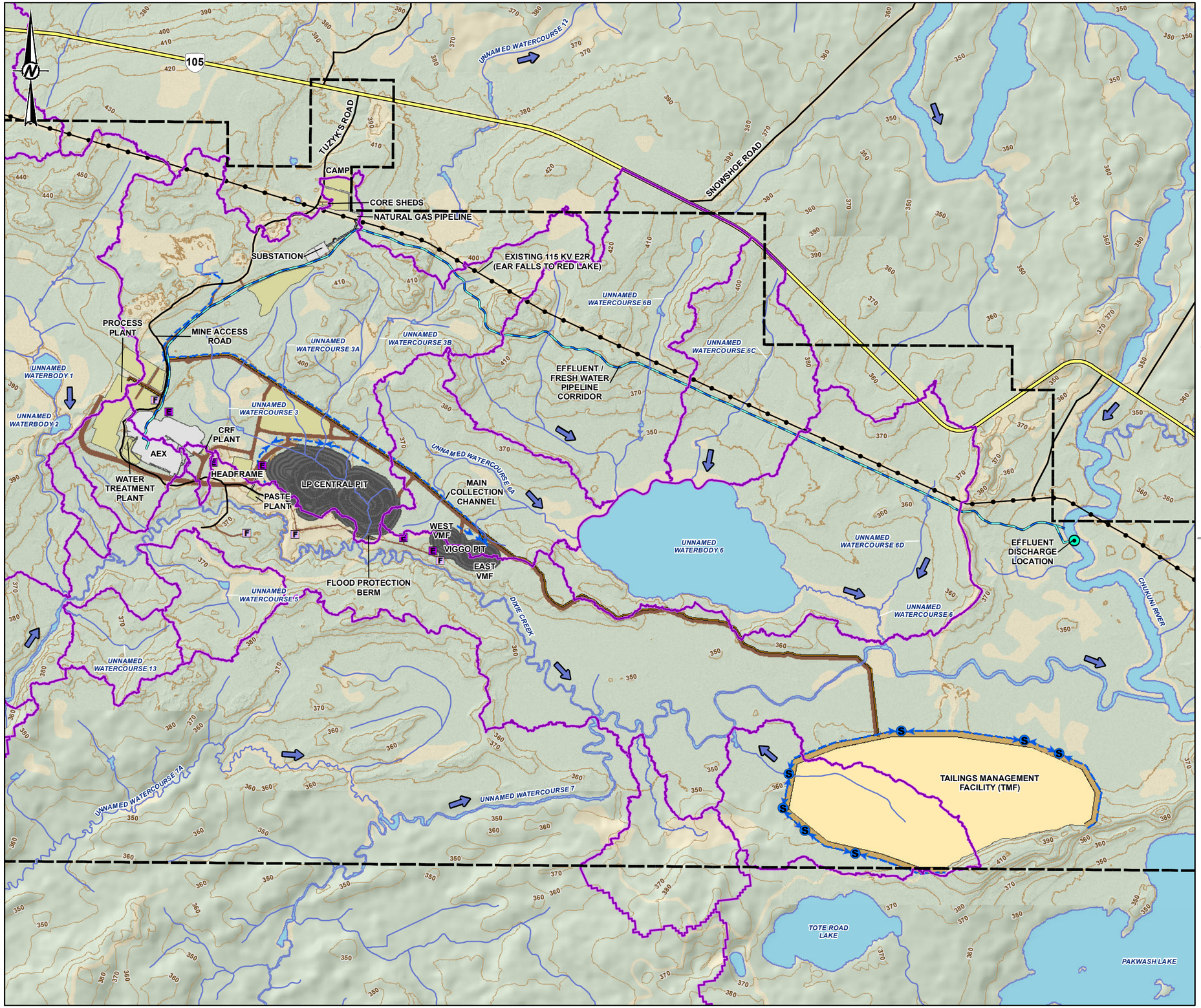
TITLE
TAILINGS MANAGEMENT FACILITY ALTERNATIVE H VEGETATION COMMUNITIES AND FISHERIES RESOURCES

CONSULTANT

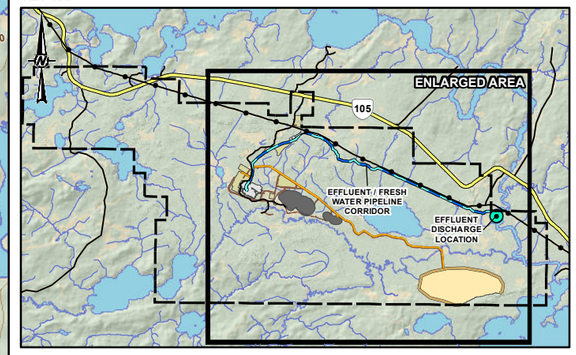
wsp

YYYY-MM-DD	2025-07-03
DESIGNED	----
PREPARED	MD
REVIEWED	HL
APPROVED	DR

PROJECT NO.	CONTROL	REV.	FIGURE
CA0031271	0001	A	5-7



KEY MAP



SCALE 1:235,000

LEGEND

- PROPERTY BOUNDARY
- HIGHWAY (INCLUDING NATURAL GAS PIPELINE)
- LOCAL ROAD
- EXISTING TRANSMISSION LINE
- LOCAL SUBCATCHMENT
- WATERCOURSE
- WATERBODY
- CONTOURS (10 M INTERVAL)
- FLOW DIRECTION

PROPOSED MINE FEATURE

- OPEN PIT
- TAILINGS MANAGEMENT FACILITY (TMF)
- SUMP
- COLLECTION DITCH
- MINE FACILITIES / INFRASTRUCTURE
- DAM
- ROAD
- ADVANCED EXPLORATION SITE (AEX)
- EXHAUST VENT RAISE
- FRESH AIR VENT RAISE
- TRANSMISSION LINE
- TAILINGS PIPELINE
- PASTE PLANT PIPELINE
- EFFLUENT / FRESH WATER PIPELINE CORRIDOR
- EFFLUENT DISCHARGE LOCATION

0 0.5 1 2

1:41,000 KILOMETRES

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE
2. VMF: VIGGO MANAGEMENT FACILITY

REFERENCE(S)

1. CONTAINS INFORMATION LICENSED UNDER THE OPEN GOVERNMENT LICENCE - ONTARIO
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7. COORDINATE SYSTEM: NAD 1983 UTM ZONE 15N

CLIENT
GREAT BEAR RESOURCES

PROJECT
GREAT BEAR PROJECT

TITLE
TAILINGS MANAGEMENT FACILITY ALTERNATIVE I SITE CONFIGURATION

CONSULTANT

wsp

YYYY-MM-DD	2025-07-03
DESIGNED	----
PREPARED	MD
REVIEWED	HL
APPROVED	DR

PROJECT NO.	CONTROL	REV.	FIGURE
CA0031271	0001	A	5-8

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

0 25mm

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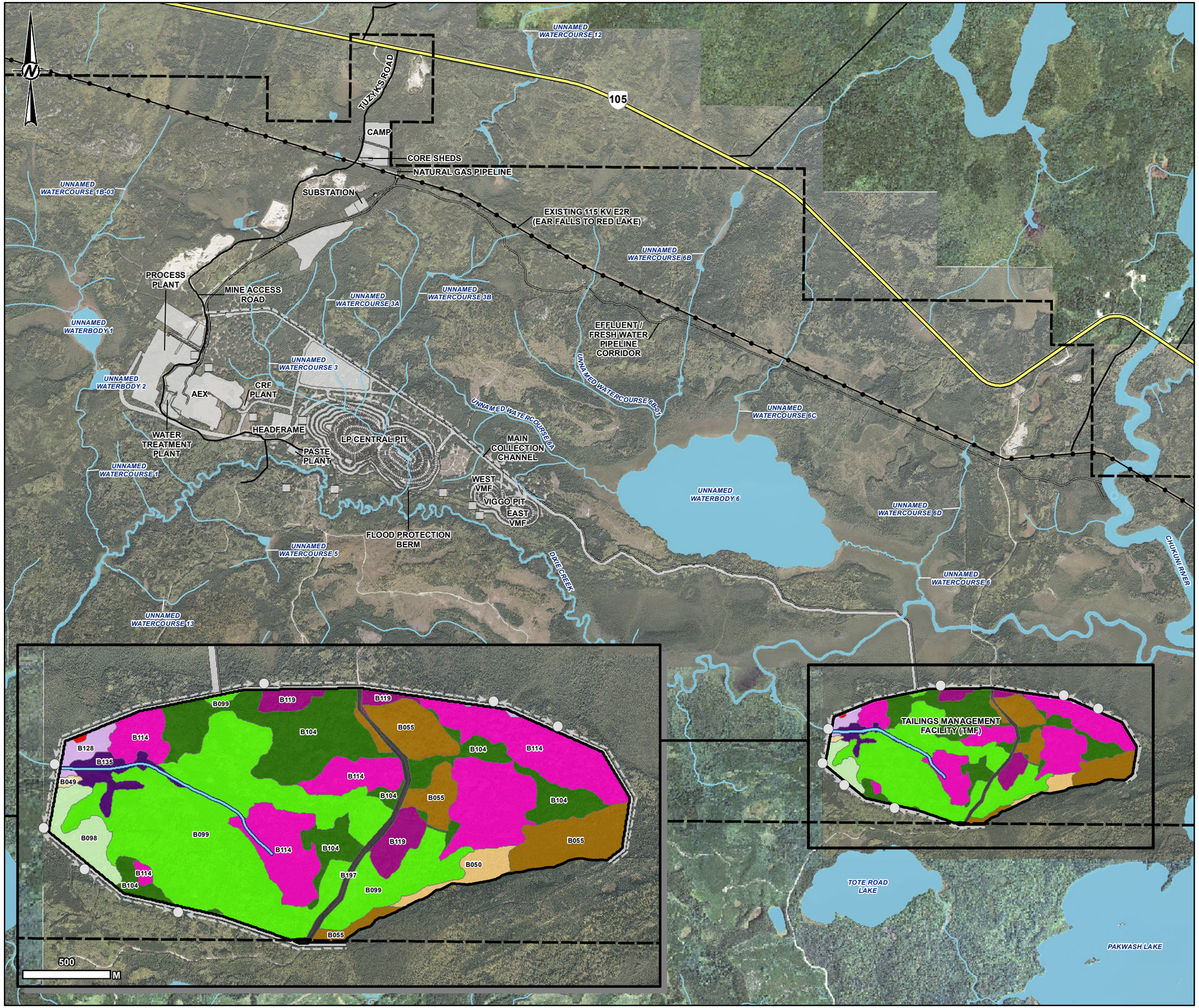

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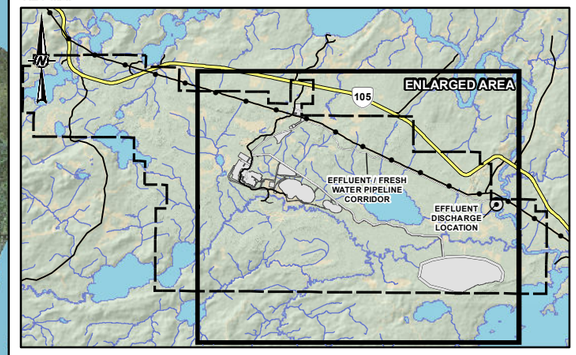

SCALE 1:235,000

LEGEND

- PROPERTY BOUNDARY
- PROPOSED TAILINGS MANAGEMENT FACILITY (TMF)
- OTHER PROPOSED MINE FEATURE
- HIGHWAY (INCLUDING NATURAL GAS PIPELINE)
- LOCAL ROAD
- EXISTING TRANSMISSION LINE
- WATERCOURSE
- WATERBODY
- IMPACTED WATERCOURSE

IMPACTED VEGETATION COMMUNITY

- B049: *DRY TO FRESH, COARSE: JACK PINE - BLACK SPRUCE DOMINATED*
- B050: *DRY TO FRESH, COARSE: PINE - BLACK SPRUCE CONIFER*
- B055: *DRY TO FRESH, COARSE: ASPEN - BIRCH HARDWOOD*
- B098: *FRESH, SILTY TO FINE LOAMY: JACK PINE - BLACK SPRUCE DOMINATED*
- B099: *FRESH, SILTY TO FINE LOAMY: PINE - BLACK SPRUCE CONIFER*
- B104: *FRESH, SILTY TO FINE LOAMY: ASPEN - BIRCH HARDWOOD*
- B114: *MOIST, FINE: PINE - BLACK SPRUCE CONIFER*
- B119: *MOIST, FINE: ASPEN - BIRCH HARDWOOD*
- B128: *ORGANIC INTERMEDIATE CONIFER SWAMP*
- B135: *ORGANIC THICKET SWAMP*
- B136: *SPARSE TREED FEN*
- B197: *PAVEMENT / CONCRETE*

0 0.5 1 2

1:41,000 KILOMETRES

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE
2. VMF: VIGGO MANAGEMENT FACILITY

REFERENCE(S)

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2. AERIAL IMAGERY PROVIDED BY GREAT BEAR RESOURCES (SCENE DATE: SEPTEMBER 2022).
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4. ROADS INFORMATION PROVIDED BY GREAT BEAR RESOURCES, AUGUST 2022.
5. SITE PLAN BASED ON INFORMATION PROVIDED BY GREAT BEAR RESOURCES, DECEMBER 2024 / JUNE 2025.
6. COORDINATE SYSTEM: NAD 1983 UTM ZONE 15N

CLIENT
GREAT BEAR RESOURCES

PROJECT
GREAT BEAR PROJECT

TITLE
TAILINGS MANAGEMENT FACILITY ALTERNATIVE I VEGETATION COMMUNITIES AND FISHERIES RESOURCES

CONSULTANT

wsp

YYYY-MM-DD	2025-07-04
DESIGNED	----
PREPARED	MD
REVIEWED	HL
APPROVED	DR

PROJECT NO.	CONTROL	REV.	FIGURE
CA0031271	0001	A	5-9

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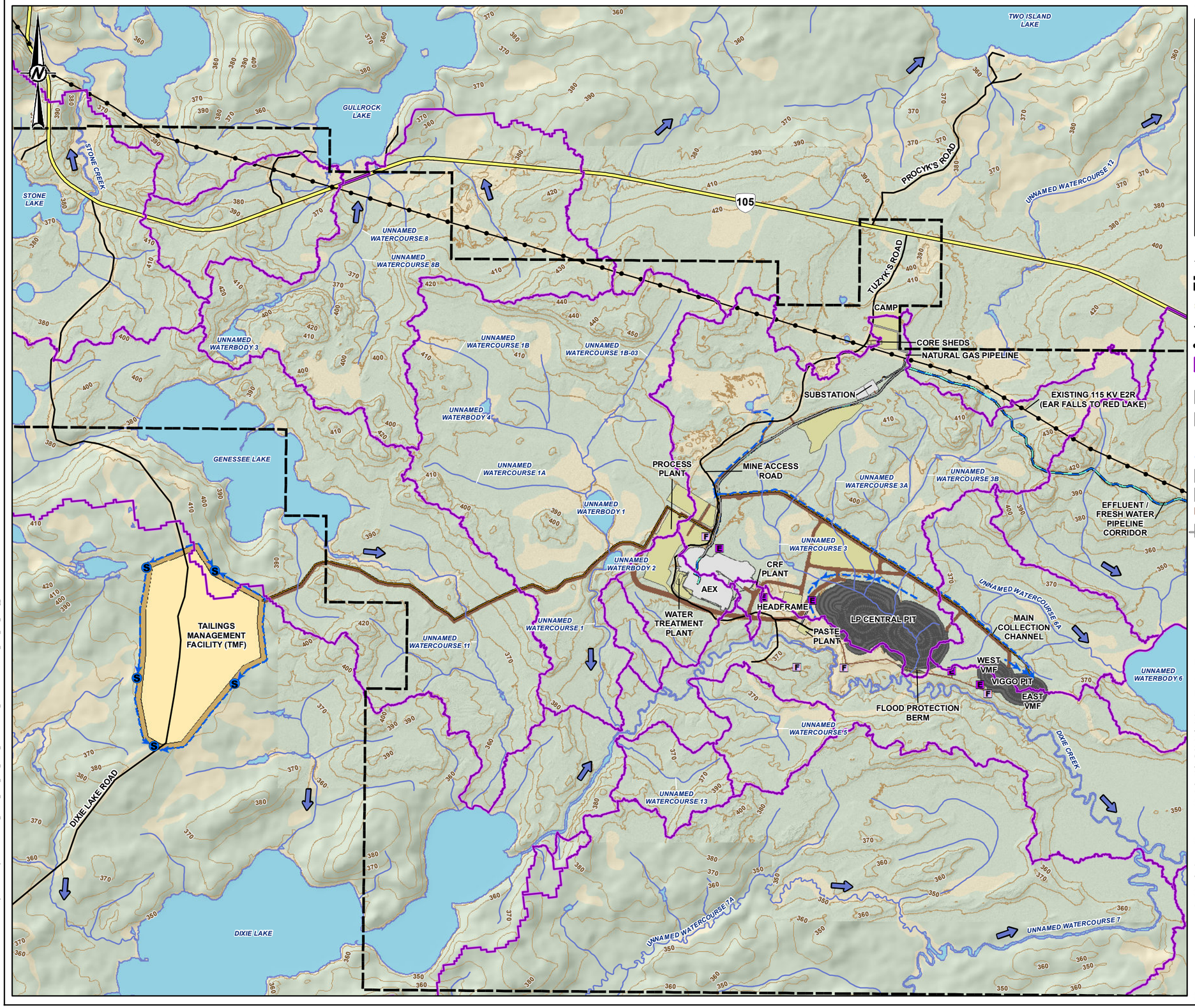

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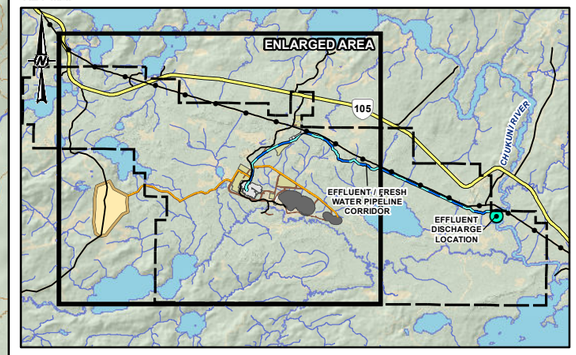

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LEGEND

- PROPERTY BOUNDARY
- HIGHWAY (INCLUDING NATURAL GAS PIPELINE)
- LOCAL ROAD
- EXISTING TRANSMISSION LINE
- LOCAL SUBCATCHMENT
- WATERCOURSE
- WATERBODY
- CONTOURS (10 M INTERVAL)
- FLOW DIRECTION

PROPOSED MINE FEATURE

- OPEN PIT
- TAILINGS MANAGEMENT FACILITY (TMF)
- SUMP
- COLLECTION DITCH
- MINE FACILITIES / INFRASTRUCTURE
- DAM
- ROAD
- ADVANCED EXPLORATION SITE (AEX)
- EXHAUST VENT RAISE
- FRESH AIR VENT RAISE
- TRANSMISSION LINE
- TAILINGS PIPELINE
- PASTE PLANT PIPELINE
- EFFLUENT / FRESH WATER PIPELINE CORRIDOR
- EFFLUENT DISCHARGE LOCATION

0 0.5 1 2

1:41,000 KILOMETRES

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE
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REFERENCE(S)

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6. SUBCATCHMENT BOUNDARIES DELINEATED USING 2022 LIDAR AND THE ONTARIO FLOW ASSESSMENT TOOL (MNRF).
7. COORDINATE SYSTEM: NAD 1983 UTM ZONE 15N

CLIENT
GREAT BEAR RESOURCES

PROJECT
GREAT BEAR PROJECT

TITLE
TAILINGS MANAGEMENT FACILITY ALTERNATIVE J SITE CONFIGURATION

CONSULTANT

wsp

YYYY-MM-DD	2025-07-03
DESIGNED	----
PREPARED	MD
REVIEWED	HL
APPROVED	DR

PROJECT NO.	CONTROL	REV.	FIGURE
CA0031271	0001	A	5-10

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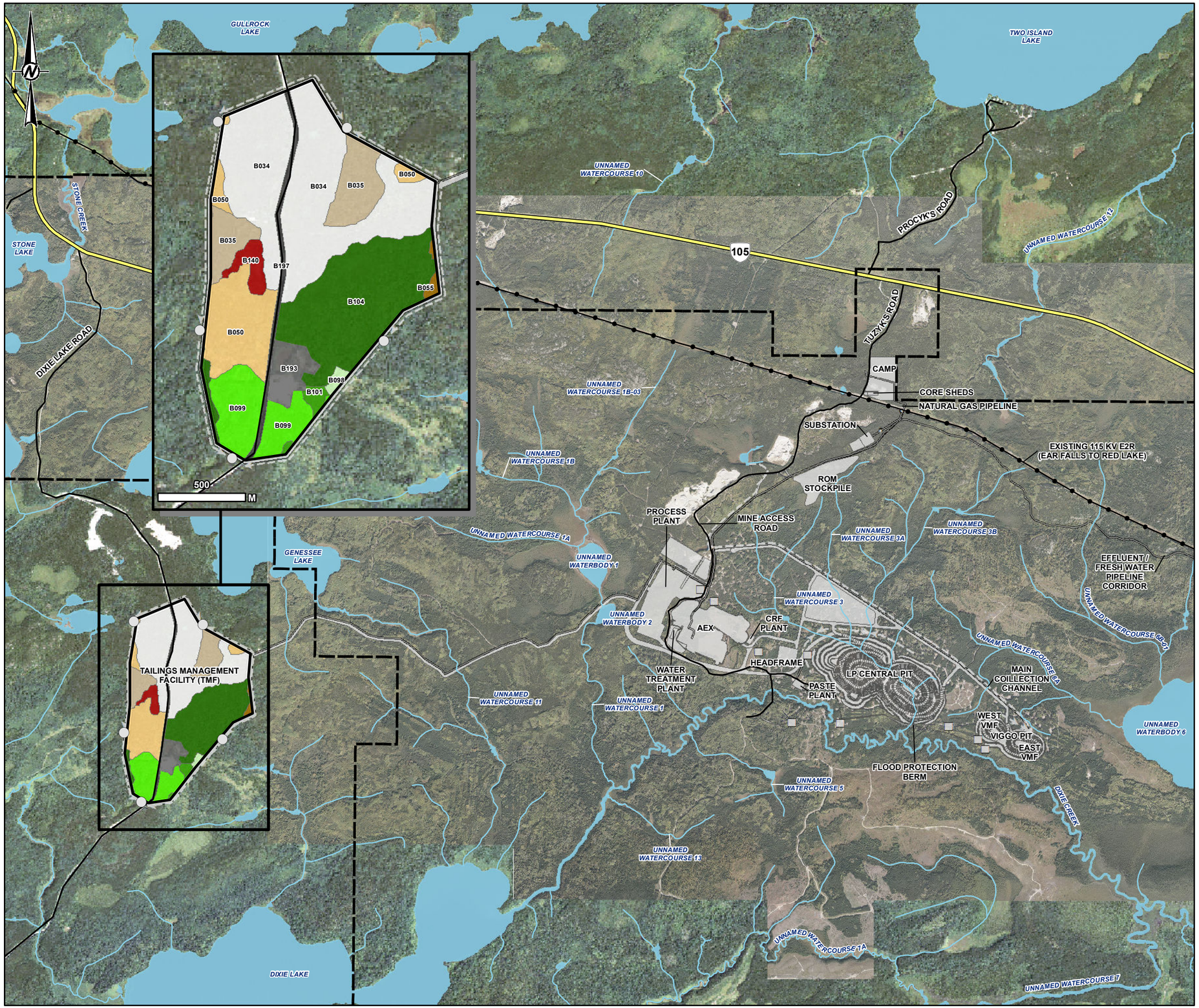

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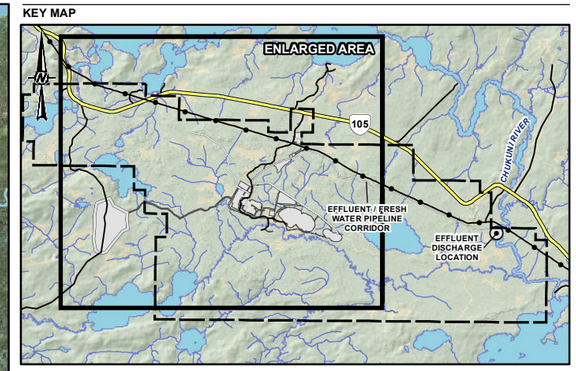

SCALE 1:235,000

LEGEND

- PROPERTY BOUNDARY
- PROPOSED TAILINGS MANAGEMENT FACILITY (TMF)
- OTHER PROPOSED MINE FEATURE
- HIGHWAY (INCLUDING NATURAL GAS PIPELINE)
- LOCAL ROAD
- EXISTING TRANSMISSION LINE
- WATERCOURSE
- WATERBODY

IMPACTED VEGETATION COMMUNITY

- B034: *DRY, SANDY: JACK PINE – BLACK SPRUCE DOMINATED*
- B035: *DRY, SANDY: PINE - BLACK SPRUCE CONIFER*
- B050: *DRY TO FRESH, COARSE: PINE - BLACK SPRUCE CONIFER*
- B055: *DRY TO FRESH, COARSE: ASPEN - BIRCH HARDWOOD*
- B098: *FRESH, SILTY TO FINE LOAMY: JACK PINE - BLACK SPRUCE DOMINATED*
- B099: *FRESH, SILTY TO FINE LOAMY: PINE - BLACK SPRUCE CONIFER*
- B101: *FRESH, SILTY TO FINE LOAMY: SPRUCE - FIR CONIFER*
- B104: *FRESH, SILTY TO FINE LOAMY: ASPEN - BIRCH HARDWOOD*
- B140: *OPEN MODERATELY RICH FEN*
- B193: *ACTIVE COARSE CLEAN FILL*
- B197: *PAVEMENT / CONCRETE*

0 0.5 1 2

1:41,000 KILOMETRES

NOTE(S)

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PROJECT
GREAT BEAR PROJECT

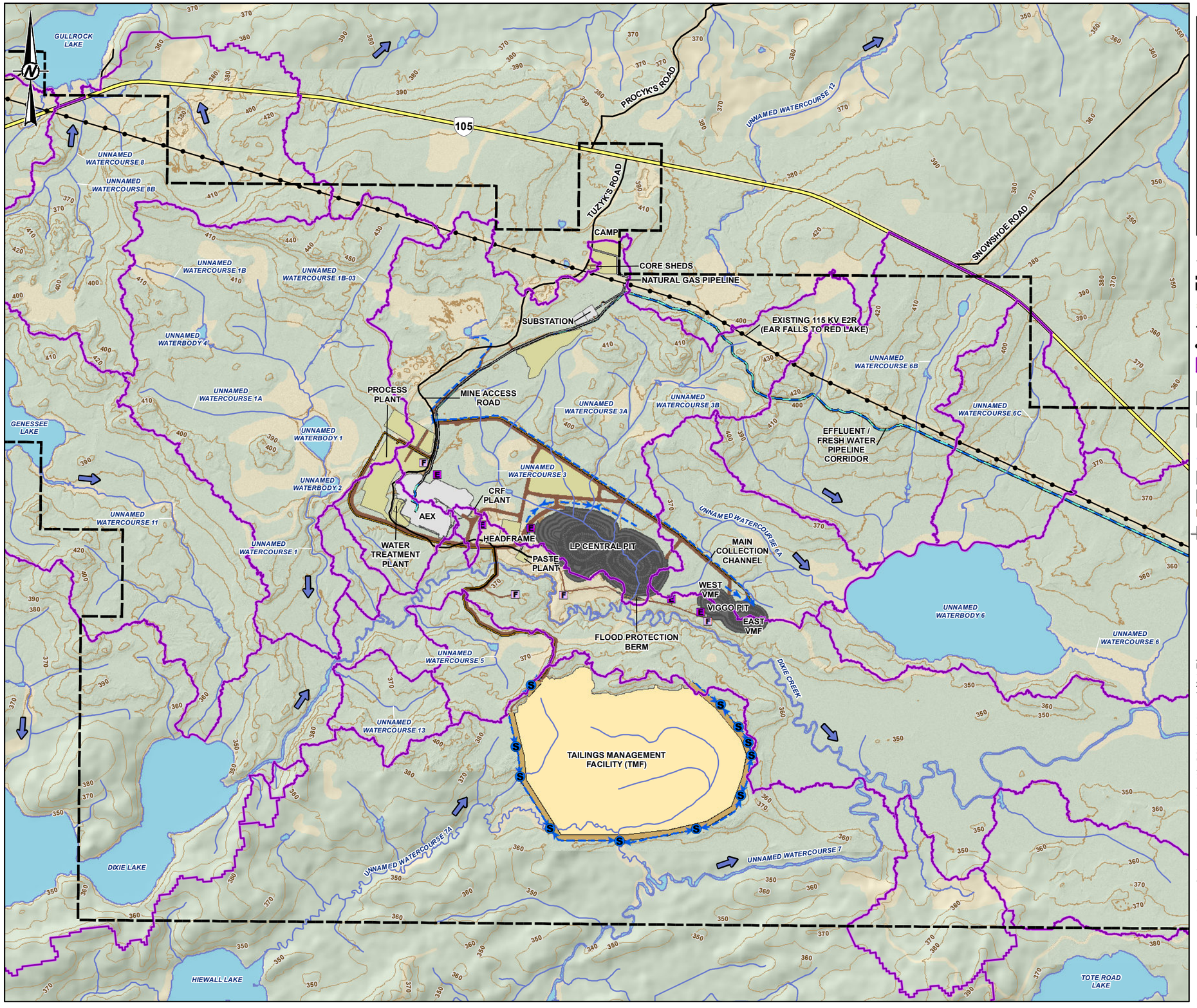
TITLE
TAILINGS MANAGEMENT FACILITY ALTERNATIVE J VEGETATION COMMUNITIES AND FISHERIES RESOURCES

CONSULTANT

wsp

YYYY-MM-DD	2025-07-04
DESIGNED	----
PREPARED	MD
REVIEWED	HL
APPROVED	DR

PROJECT NO.	CONTROL	REV.	FIGURE
CA0031271	0001	A	5-11



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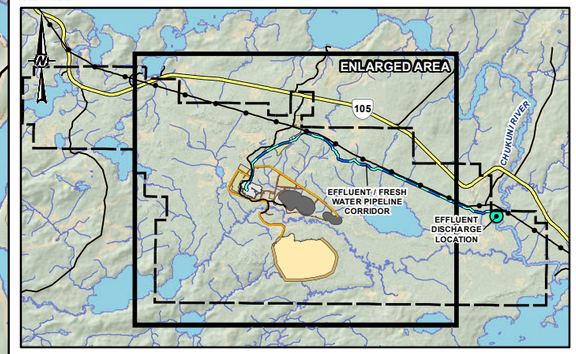

SCALE 1:235,000

LEGEND

- PROPERTY BOUNDARY
- HIGHWAY (INCLUDING NATURAL GAS PIPELINE)
- LOCAL ROAD
- EXISTING TRANSMISSION LINE
- LOCAL SUBCATCHMENT
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- WATERBODY
- CONTOURS (10 M INTERVAL)
- FLOW DIRECTION

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- COLLECTION DITCH
- MINE FACILITIES / INFRASTRUCTURE
- DAM
- ROAD
- ADVANCED EXPLORATION SITE (AEX)
- EXHAUST VENT RAISE
- FRESH AIR VENT RAISE
- TRANSMISSION LINE
- TAILINGS PIPELINE
- PASTE PLANT PIPELINE
- EFFLUENT / FRESH WATER PIPELINE CORRIDOR
- EFFLUENT DISCHARGE LOCATION

0 0.5 1 2

1:41,000 KILOMETRES

NOTE(S)

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7. COORDINATE SYSTEM: NAD 1983 UTM ZONE 15N

CLIENT
GREAT BEAR RESOURCES

PROJECT
GREAT BEAR PROJECT

TITLE
TAILINGS MANAGEMENT FACILITY ALTERNATIVE O SITE CONFIGURATION

CONSULTANT

YYYY-MM-DD	2025-07-03
DESIGNED	----
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REVIEWED	HL
APPROVED	DR

PROJECT NO.	CONTROL	REV.	FIGURE
CA0031271	0001	A	5-12

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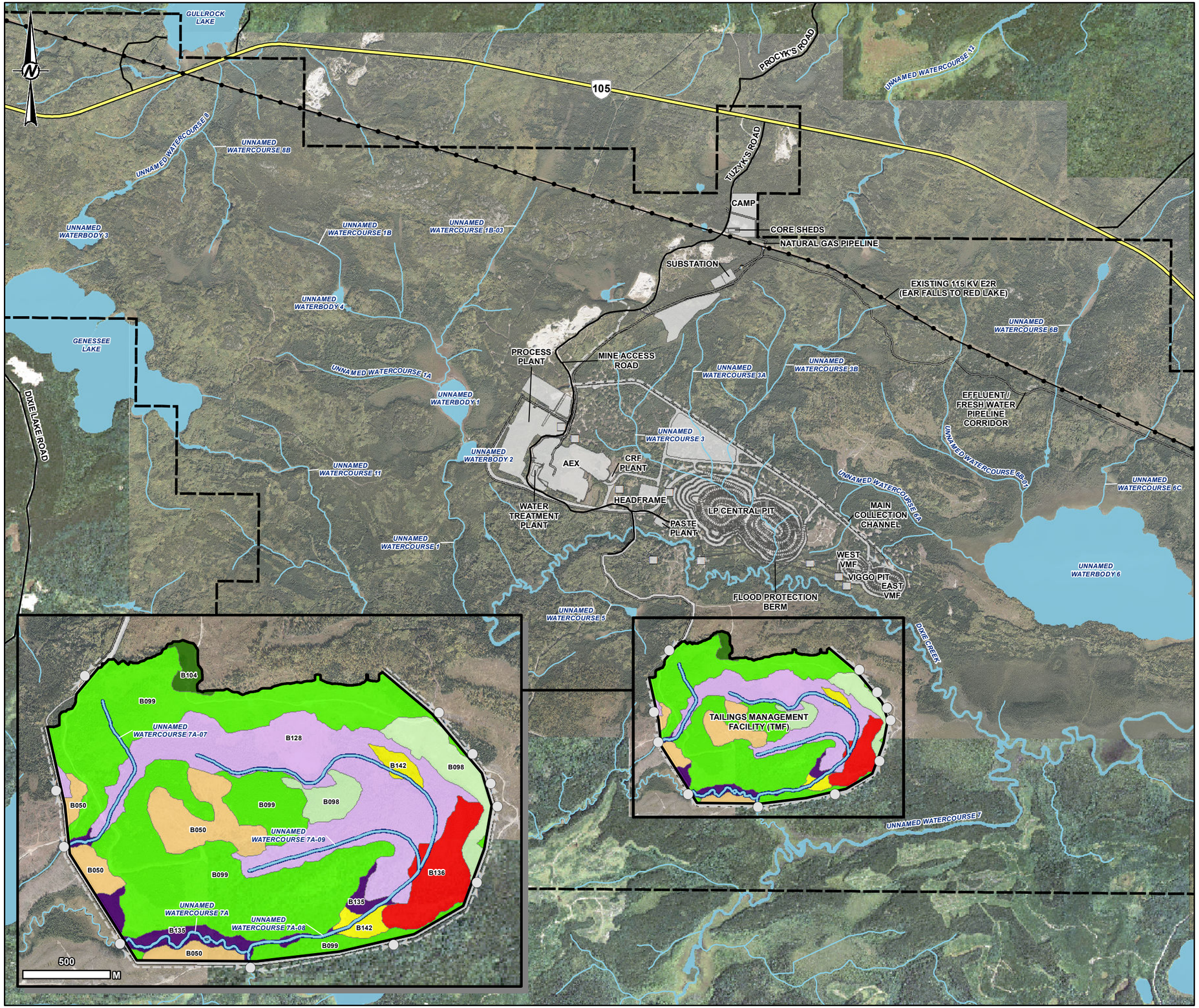

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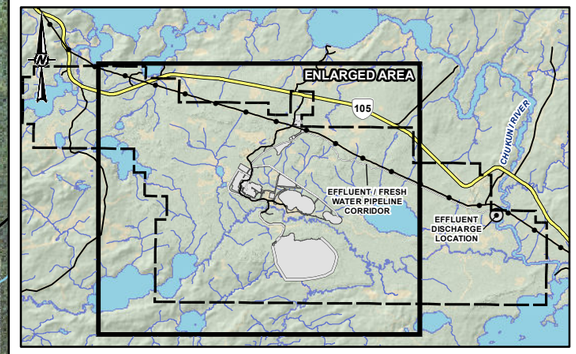

SCALE 1:235,000

LEGEND

- PROPERTY BOUNDARY
- PROPOSED TAILINGS MANAGEMENT FACILITY (TMF)
- OTHER PROPOSED MINE FEATURE
- HIGHWAY (INCLUDING NATURAL GAS PIPELINE)
- LOCAL ROAD
- EXISTING TRANSMISSION LINE
- WATERCOURSE
- WATERBODY
- IMPACTED WATERCOURSE

IMPACTED VEGETATION COMMUNITY

- B050: *DRY TO FRESH, COARSE: PINE - BLACK SPRUCE CONIFER*
- B098: *FRESH, SILTY TO FINE LOAMY: JACK PINE - BLACK SPRUCE DOMINATED*
- B099: *FRESH, SILTY TO FINE LOAMY: PINE - BLACK SPRUCE CONIFER*
- B104: *FRESH, SILTY TO FINE LOAMY: ASPEN - BIRCH HARDWOOD*
- B128: *ORGANIC INTERMEDIATE CONIFER SWAMP*
- B135: *ORGANIC THICKET SWAMP*
- B136: *SPARSE TREED FEN*
- B142: *MINERAL MEADOW MARSH*

0 0.5 1 2

1:41,000 KILOMETRES

NOTE(S)

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REFERENCE(S)

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CLIENT
GREAT BEAR RESOURCES

PROJECT
GREAT BEAR PROJECT

TITLE
TAILINGS MANAGEMENT FACILITY ALTERNATIVE O VEGETATION COMMUNITIES AND FISHERIES RESOURCES

CONSULTANT

wsp

YYYY-MM-DD	2025-07-04
DESIGNED	----
PREPARED	MD
REVIEWED	HL
APPROVED	DR

PROJECT NO.	CONTROL	REV.	FIGURE
CA0031271	0001	A	5-13

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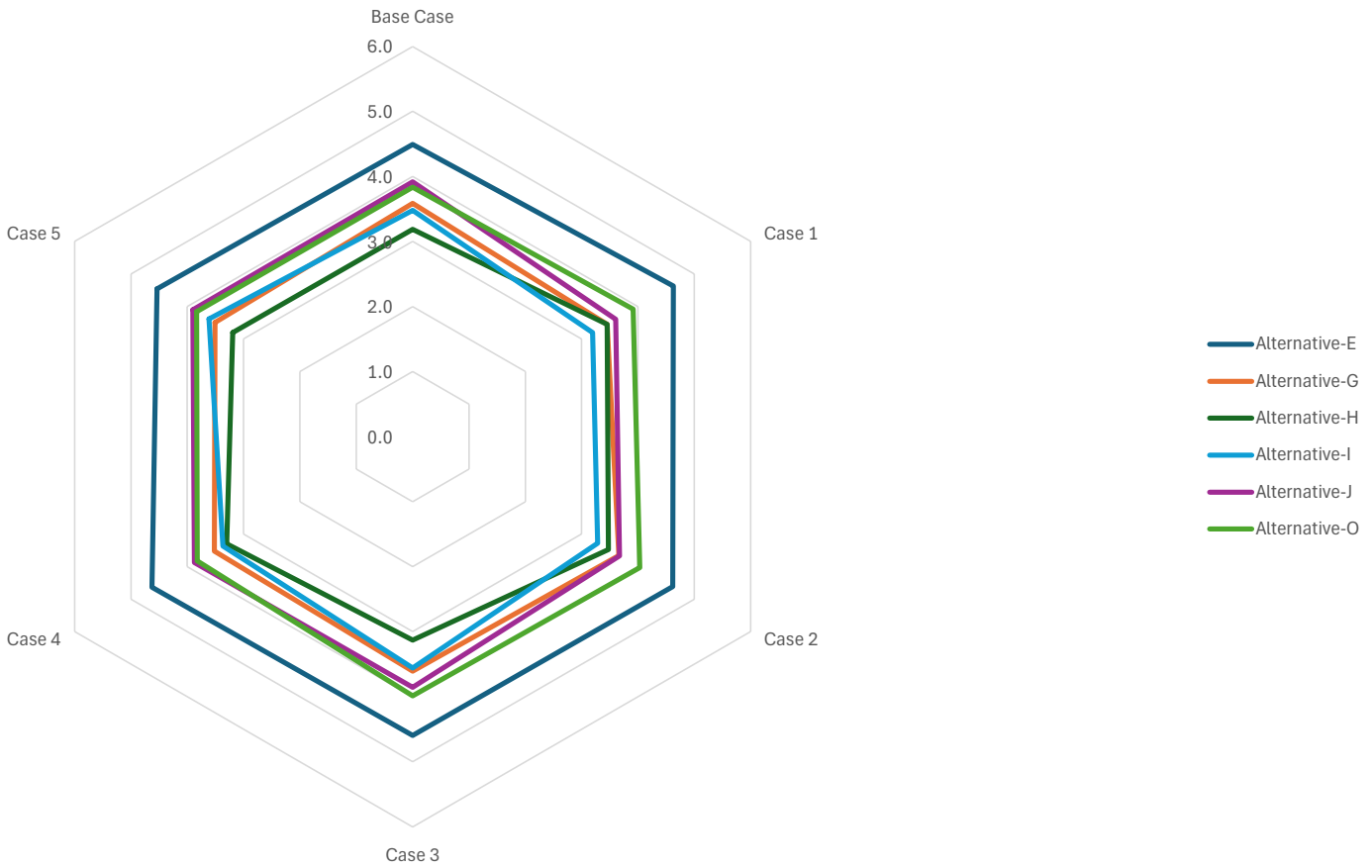


Notes

KINROSS Great Bear

Tailings Management Facility Stockpile Sensitivity Analysi

Great Bear Project Assessment for Alternatives for Storage of Mine Waste

Great Bear Project

Figure Number		5-14	
Project Number		OMEMA2303	
Date		December 2025	
Drawn	HL	Reviewed	DR

6 MINE ROCK STOCKPILE

6.1 STEP 1: CANDIDATE MINE ROCK STOCKPILE ALTERNATIVES

During the construction and operation phases of the Project, mine rock and ore will be extracted from both the LP Central pit and Viggo pit. Mine rock that is suitable for construction will be used for dam construction and dam raises at the TMF, and other site construction to minimize the requirement for dedicated aggregate sources.

Mine rock not suitable for construction will be stored in a designated MRS. The MRS needs to be closer to the source of the rock to minimize the Project footprint, minimize environmental effects (such as greenhouse gas emissions from trucking), and to be economically feasible, as compared to a facility to store tailings which are transferred by pipeline. Over the mine life it is anticipated that up to 76 Mm^3 of mine rock will require storage on the surface.

Six mine rock storage locations (Alternatives A through F) were identified in proximity to the open pits as shown in Figure 6-1. Alternative E was developed to avoid waters frequented by fish. These alternatives are described in the subsequent sections.

6.1.1 ALTERNATIVE A

Alternative A is wholly situated within the Property, about 3 km northwest of the LP Central pit as illustrated in Figure 6-1. Alternative A is located within both the Dixie Creek north tributary subcatchment and the Gullrock Lake – Chukuni River subcatchment, which both ultimately drain to the Chukuni River. As shown on Figure 6-1, the proposed MRS Alternative A footprint overprints the preferred TMF location.

6.1.2 ALTERNATIVE B

Alternative B is located within the Property, about 3 km west of the LP Central pit as shown in Figure 6-1. Alternative B mostly sits within the Dixie Creek north tributary subcatchment and a small portion of the MRS is located in the Gullrock Lake – Chukuni River subcatchment, which both ultimately drain to the Chukuni River. As seen in Figure 6-1, Alternative B overprints a portion of the preferred TMF location.

6.1.3 ALTERNATIVE C

Alternative C is located within the Property approximately 2 km south of the LP Central pit, south of Dixie Creek as shown in Figure 6-1. Alternative C is located within the Dixie Creek north tributary subcatchment and the Dixie Creek south tributary subcatchment, which both ultimately drain to the Chukuni River via Dixie Creek.

6.1.4 ALTERNATIVE D

Alternative D is wholly situated within the Property about 1 km south of the LP Central pit, south of Dixie Creek as illustrated in Figure 6-1. Alternative D is located within the Dixie Creek north tributary subcatchment and the Dixie Creek south tributary subcatchment, which both ultimately drain to the Chukuni River via Dixie Creek.

6.1.5 ALTERNATIVE E

Alternative E is fully within the Property as illustrated in Figure 6-1 and was designed to avoid overprinting waterbodies or watercourses that may be frequented by fish. In order to accommodate the anticipated mine rock quantity, two stockpiles will be required. Both of the stockpiles are located east of the Viggo pit with one sited on the north side of Dixie Creek and the second located south of Dixie Creek near Pakwash Lake.

6.1.6 ALTERNATIVE F

Alternative F is wholly situated within the Property as shown in Figure 6-1 and is located about 1 km north of the LP Central pit north of Dixie Creek. Alternative F is located within the Dixie Creek north tributary subcatchment, which ultimately drains to the Chukuni River via Dixie Creek.

6.2 STEP 2: PRE-SCREENING ASSESSMENT

The pre-screening criterion for the MRS alternatives is:

- Do the alternatives avoid overprinting the preferred TMF location? (yes / no)
- Do the alternatives avoid overprinting existing commercial aggregate operations? (yes / no).

Based on the pre-screening criteria, four MRS alternatives (Alternatives C, D, E and F) were carried forward to the MAA as summarized in Table 6-1. The four progressed MRS candidates are summarized in Table 6-2.

6.3 STEP 3: MINE ROCK STOCKPILE ALTERNATIVES CHARACTERIZATION

At the outset, six alternative sites were reviewed for the MRS. Through the pre-screening process described in Section 6.2, the total number of alternatives carried forward was reduced to four alternatives:

- Alternative C
- Alternative D
- Alternative E
- Alternative F.

The alternatives were developed to support ranking and consideration in the MAA with the purpose of identifying the preferred MRS location. The rationale for the sub-accounts and indicators used in the MAA for the MRS are summarized in Table 6-3.

6.3.1 ALTERNATIVE C

Alternative C is wholly situated within the Property as shown in Figure 6-1 and is about 2 km south of the LP Central pit on the southern side of Dixie Creek situated in both the Dixie Creek north tributary subcatchment and the Dixie Creek south tributary subcatchment.

Alternative C will have a footprint of about 279 ha. The facility will be developed by placing mine rock with overall side slopes of about 7H:1V achieving a maximum stockpile height of 90 m. Prior to placement of mine rock in the MRS, roads will be constructed from the open pits to haul mine rock to the Alternative C location, which will require a crossing over Dixie Creek. It is anticipated that Alternative C will require an additional road network of 2.3 km as is shown in Figure 6-2. Mine rock will be hauled from the open pits

along a portion of the haul road that was in place for the TMF construction. The mine rock will travel an approximate distance of 2.9 km prior to placement in the MRS.

Contact water from the MRS will be collected via gravity drainage ditches and collection sumps located in low lying areas around the MRS. For the purpose of ranking the MRS alternatives in the MAA, it was assumed that the contact water from the MRS would be pumped to the already constructed channel that drains to the VMF. Alternative C will require 6.6 km of perimeter ditching, 11 collection sumps and a water pipeline length of 6.1 km, as shown in Figure 6-2.

Alternative C will overprint both aquatic and terrestrial resources. The overprinted vegetation communities, waterbody and watercourses are shown in Figure 6-3. A small unnamed waterbody and portions of Unnamed Watercourse 7A-03, Unnamed Watercourse 7A-04 and Unnamed Watercourse 7A-6 will be overprinted. It is anticipated that the following quantities of fish habitat will be overprinted by Alternative C:

- Overprinted waterbody surface area: 0.6 ha
- Overprinted watercourse length: 2.6 km.

Preliminary comparative cost estimates were developed for fish compensation resulting from the overprinted watercourse and waterbody footprint. The costs for fish compensation for Alternative C are estimated to be approximately $3.1 million.

The overprinted vegetation communities included but are not limited to pine, black spruce, jack pine, aspen, birch, hardwood, intermediate conifer swamp, thicket swamp and mineral meadow marsh.

During consultation, wild rice fields and moose habitat were identified as being of interest to Indigenous communities, and baseline studies identified SAR species and associated habitat at the Project. Alternative C is anticipated to overprint the following vegetation and habitat types:

- Wild rice fields: 0 ha
- Moose late wintering habitat: 276.3 ha
- Moose foraging habitat: 2.3 ha
- SAR Habitats:
  - Caribou refuge habitat: 189.9 ha
  - Bat maternity roost habitat: 274.1 ha
  - Bat foraging habitat: 62.3 ha
  - Wolverine habitat: 56.9 ha
  - Avian SAR habitat: 279.3 ha.

Comparative cost estimates were developed for the MRS alternatives, with the purposes of differentiating the alternatives in the MAA. Comparative cost estimates were developed based on the alternative quantities and consider the following and details in Table 6-4:

- Footprint clearing: 279 ha
- Perimeter ditching: 6.6 km
- Seepage collection sumps: 11
- Additional road network: 2.3 km
- Pipeline length: 6.1 km.

Based on the comparative construction and closure cost estimate provided in Appendix B, it is anticipated that Alternative C will have a comparative construction cost of about $17.0 million.

During construction and operations, mine rock excavated from the open pits will be segregated using a defined criteria as NPAG or PAG for storage in separate areas of the MRS. It is anticipated that the MRS

will achieve its final contours when the mining of LP Central pit ceases. Once final contours are achieved the MRS will be progressively rehabilitated during operations, where practical. To support evaluation of closure costing in the MAA, it was assumed that the following cover would be placed on the MRS, however, during closure planning different cover profiles may be used for the segregated NPAG and PAG MRS areas:

- Base layer: 0.5 m compacted clay, or similar performing low permeability material
- Middle layer: 1.0 m non-compacted clay layer
- Top layer: growth media (amended overburden; 0.3 m)
- Seeding.

The comparative closure cost for MRS Alternative C is estimated to be about $43 million.

6.3.2 ALTERNATIVE D

Alternative D is wholly situated within the Property as shown in Figure 6-1. It is located about 1 km south of the LP Central pit on the southern side of Dixie Creek and is situated within both the Dixie Creek north tributary subcatchment and the Dixie Creek south tributary subcatchment, which both ultimately drain to the Chukuni River via Dixie Creek.

Alternative D will have a footprint of about 262 ha and the facility will be developed by placing mine rock with side slopes of 7H:1V achieving a maximum stockpile height of about 73 m. Prior to placement of mine rock, haul roads will be constructed from the open pits to the MRS which will require a crossing over Dixie Creek and an additional road network of 2.1 km as shown in Figure 6-4. Mine rock will be hauled from LP Central pit originally using the road network in place for the TMF construction, heading southeast of the AEX Program area, travelling an approximate distance of 2.6 km prior to reaching the MRS.

Contact water from the MRS will be collected via gravity drainage ditches and collection sumps located in low lying areas around the MRS. For the purpose of ranking the mine rock storage alternatives, it was assumed that the contact water from the MRS would be pumped to the gravity drainage ditch to the VMF. Alternative D will require 7.2 km of perimeter ditching, 13 collection sumps and a water pipeline length of 5.5 km, as shown in Figure 6-4.

Alternative D will overprint both aquatic and terrestrial resources, including overprinting 2.2 km of watercourse length (portions of Unnamed Watercourse 7A-07 and Unnamed Watercourse 7A-08). Comparative cost estimates were developed for fish compensation resulting from the overprinted watercourse footprint. The anticipated costs for fish compensation associated with Alternative D are approximately $2.4 million. Overprinted vegetation includes but is not limited to pine, black spruce, jack pine, fir, birch hardwood, intermediate conifer swamp, treed fen and mineral meadow marsh. Further details are provided in Figure 6-5.

During consultation, wild rice fields and moose habitat were identified as being of interest to Indigenous communities, and baseline studies identified SAR species and associated habitat at the Project. Alternative D is anticipated to approximately overprint the following vegetation and habitat types:

- Wild rice fields: 0 ha
- Moose late wintering habitat: 258.9 ha
- Moose foraging habitat: 6.8 ha
- SAR Habitats:
  - Caribou refuge habitat: 137.4 ha
  - Bat maternity roost habitat: 255.3 ha
  - Bat foraging habitat: 67.1 ha
  - Wolverine habitat: 60.2 ha

- Avian SAR habitat: 262.0 ha.

Comparative cost estimates were developed for the MRS alternatives, with the purposes of differentiating the alternatives in the MAA. Comparative cost estimates were developed based the alternative quantities and consider the following and details in Table 6-4:

- Footprint clearing: 262 ha
- Perimeter ditching: 7.2 km
- Seepage collection sumps: 13
- Additional road network: 2.1 km
- Pipeline length: 5.5 km.

Based on the comparative construction and closure cost estimate provided in Appendix B, it is anticipated that Alternative D will have a comparative construction cost of about $17 million.

During construction and operations, mine rock excavated from the open pits will be segregated using a defined criteria as NPAG or PAG for storage in separate areas of the MRS. It is anticipated that the MRS will achieve its final contours when the mining of LP Central pit ceases. Once final contours are achieved the MRS will be progressively rehabilitated during operations, where practical. To support evaluation of closure costing in the MAA, it was assumed that the following cover would be placed on the MRS, however, during closure planning different cover profiles may be used for the segregated NPAG and PAG MRS areas:

- Base layer: 0.5 m compacted clay, or similar performing low permeability material
- Middle layer: 1.0 m non-compacted clay layer
- Top layer: growth media (amended overburden; 0.3 m)
- Seeding.

The comparative closure cost for MRS Alternative D is estimated to be about $40 million.

6.3.3 ALTERNATIVE E

Alternative E is wholly situated within the Property as illustrated in Figure 6-1 and was designed to not overprint waterbodies or watercourses that may be frequented by fish. In order to accommodate the anticipated quantity of mine rock and avoid potential waterbodies and watercourses that may be frequented by fish, two stockpiles will be required. Both of the stockpiles are located east of the Viggo pit / VMF with one located on either side of Dixie Creek. The Alternative E stockpiles are situated in both the Dixie Creek north tributary subcatchment and the Dixie Creek catchment which both ultimately drain to the Chukuni River.

Alternative E will have a combined footprint of about 475 ha and the facility will be developed by placing mine rock with side slopes of 7H:1V achieving a maximum stockpile height of 42 m. Prior to placement of mine rock, roads will be constructed from the open pits to haul mine rock to the two stockpiles which will require a crossing over Dixie Creek and an additional road network of 2.2 km as shown in Figure 6-6. Mine rock from LP Central pit will be transported to the western MRS by using in place roads constructed for TMF construction and development of the drainage channel to the VMF. The mine rock will be transferred via new haul roads to the eastern MRS using internal roads constructed in the western MRS and the haul road connecting the two locations.

Contact water will be collected via gravity drainage ditches and collection sumps located in low lying areas. For the purpose of ranking the mine rock storage alternatives, it was assumed that the contact water would be pumped to the VMF. Alternative E will require 15.1 km of perimeter ditching, 16 collection sumps and a water pipeline length of 1.5 km, as shown in Figure 6-6.

The stockpiles will overprint a number of vegetation communities including but not limited to pine, black spruce, aspen, birch hardwood, fir, low treed bog, organic intermediate conifer swamp and treed fen and are illustrated in Figure 6-7.

During consultation, wild rice fields and moose habitat were identified as being of interest to Indigenous communities, and baseline studies identified SAR species and associated habitat at the Project. Alternative E is anticipated to approximately overprint the following vegetation and habitat types:

- Wild rice fields: 0 ha
- Moose late wintering habitat: 471.5 ha
- Moose foraging habitat: 44.8 ha
- SAR Habitats:
  - Caribou refuge habitat: 286.2 ha
  - Bat maternity roost habitat: 426.7 ha
  - Bat foraging habitat: 155.7 ha
  - Wolverine habitat: 107.4 ha
  - Avian SAR habitat: 475.1 ha.

Comparative cost estimates were developed for the MRS alternatives, with the purposes of differentiating the alternatives in the MAA. Comparative cost estimates were developed based the alternative quantities and consider the following and details in Table 6-4:

- Footprint clearing: 475 ha
- Perimeter ditching: 15.1 km
- Seepage collection sumps: 16
- Additional road network: 2.2 km
- Pipeline length: 1.5 km.

Based on the comparative construction and closure cost estimate provided in Appendix B, it is anticipated that Alternative E will have a comparative construction cost of about $20.1 million.

During construction and operations, mine rock excavated from the open pits will be segregated using a defined criteria as NPAG or PAG for storage in separate areas of the stockpiles. It is anticipated that the stockpiles will achieve their final contours when the mining of LP Central pit ceases. Once final contours are achieved the stockpiles will be progressively rehabilitated during operations, where practical. To support evaluation of closure costing in the MAA, it was assumed that the following cover would be placed on the stockpiles, however, during closure planning different cover profiles may be used for the segregated NPAG and PAG MRS areas:

- Base layer: 0.5 m compacted clay, or similar performing low permeability material
- Middle layer: 1.0 m non-compacted clay layer
- Top layer: growth media (amended overburden; 0.3 m)
- Seeding.

The comparative closure cost for MRS Alternative E is estimated to be about $73 million.

6.3.4 ALTERNATIVE F

Alternative F is wholly situated within the Property as seen in Figure 6-1. It is located about 1 km north of LP Central pit on the northern side of Dixie Creek and is wholly within the Dixie Creek north tributary subcatchment, which ultimately drains to the Chukuni River.

Alternative F will have a footprint of about 165 ha and the facility will be developed by placing mine rock with side slopes of 3H:1V where foundation is acceptable and side slopes of 7H:1V as needed, achieving a maximum stockpile height of 140 m. Prior to placement of mine rock, haul roads will be constructed from the open pits to the Alternative F location, requiring an additional 0.7 km of roads as shown in Figure 6-8. Mine rock is anticipated to travel 1.1 km to Alternative F using the MRS haul roads and roads in place for TMF construction and construction of the VMF drainage channel.

Contact water from the MRS will be collected via gravity drainage ditches and collection sumps located in low lying areas around the MRS. For the purpose of ranking the mine rock storage alternatives, it was assumed that the contact water from the MRS would drain by gravity from the drainage channel reporting to the VMF. Alternative F will require 4.3 km of perimeter ditching in addition to the drainage channel.

The proposed MRS Alternative F will overprint both aquatic and terrestrial resources. As shown in Figure 6-9, Alternative F will overprint 5.1 km of watercourse length including portions of:

- Unnamed Watercourse 3F
- Unnamed Watercourse 3A
- Unnamed Watercourse 3B-05
- Unnamed Watercourse 3B-04
- Unnamed Watercourse 3B-03
- Unnamed Watercourse 3B.

Additionally, Alternative F will overprint a small unnamed waterbody. Comparative cost estimates were developed for fish compensation resulting from the overprinted watercourse and waterbody footprint. The anticipated costs for fish compensation associated with Alternative F are:

- Fish compensation (watercourse): $5.1 million
- Fish compensation (waterbody): $0.05 million.

Alternative F will also overprint a number of vegetation including but not limited to: jack pine, black spruce, pine, aspen, birch hardwood, low treed bog, organic intermediate conifer swamp, organic thicket swamp and mineral meadow marsh. Further details regarding overprinted vegetation are provided in Figure 6-9.

During consultation, wild rice fields and moose habitat were identified as being of interest to Indigenous communities, and baseline studies identified SAR species and associated habitat at the Project. Alternative E is anticipated to approximately overprint the following vegetation and habitat types:

- Wild rice fields: 0 ha
- Moose late wintering habitat: 163.7 ha
- Moose foraging habitat: 1.6 ha
- SAR Habitats:
  - Caribou refuge habitat: 104.6 ha
  - Bat maternity roost habitat: 158.0 ha
  - Bat foraging habitat: 44.8 ha
  - Wolverine habitat: 37.3 ha
  - Avian SAR habitat: 165.0 ha.

Comparative cost estimates were developed for the MRS alternatives, with the purposes of differentiating the alternatives in the MAA. Comparative cost estimates were developed based the alternative quantities and consider the following and the details in Table 6-3:

- Footprint clearing: 165 ha

- Perimeter ditching: 4.3 km
- Additional road network: 0.7 km.

Based on the comparative construction and closure cost estimate provided in Appendix B, it is anticipated that Alternative F will have a comparative construction cost of about $9.3 million.

During construction and operations, mine rock excavated from the open pits will be segregated using a defined criteria as NPAG or PAG for storage in separate areas of the MRS. It is anticipated that the MRS will achieve its final contours when the mining of LP Central pit ceases. Once final contours are achieved the MRS will be progressively rehabilitated during operations, where practical. To support evaluation of closure costing in the MAA, it was assumed that the following cover would be placed on the MRS, however, during closure planning different cover profiles may be used for the segregated NPAG and PAG MRS areas:

- Base layer: 0.5 m compacted clay, or similar performing low permeability material
- Middle layer: 1.0 m non-compacted clay layer
- Top layer: growth media (amended overburden; 0.3 m)
- Seeding.

The comparative closure cost for MRS Alternative F is estimated to be about $25 million.

6.4 STEP 4: IMPACT EVALUATION AND ASSESSMENT PROCESS

6.4.1 ACCOUNTS, SUB-ACCOUNTS AND INDICATORS

Sub-accounts and indicators were chosen based on Project team experience with mine waste storage and assessments of alternatives for other mining projects using the methodology described in Section 4 and in accordance with the ECCC Guidelines (ECCC 2016). The Project Team included both Great Bear Resources staff and their consultants. During the preparation of the report, consultation with Indigenous communities was undertaken and feedback / input was gathered that informed the report. This included the alternatives, accounts, sub-accounts, indicators, measurement parameters and weightings. A complete list of sub-accounts and indicators used to develop the multiple accounts ledger, including the rationale for their selection, is provided in Table 6-3 and the characterization of the MRS Alternatives is summarized in Table 6-4.

6.4.2 VALUATING CRITERIA

Criteria used to calculate values for each of the indicators in the multiple accounts ledger are provided in Table 6-5.

6.5 STEP 5: VALUE-BASED DECISION PROCESS

A multiple accounts ledger was developed for the four alternatives considered through the MAA (Alternatives C, D, E and F). Using the alternatives characterization (Table 6-4) and valuation criteria summarized in Table 6-5, values have been determined for all indicators, which are presented in Table 6-6.

In accordance with the ECCC Guidelines (ECCC 2016), weights have been applied to each account, sub-account and indicator, to reflect the relative importance of the criteria and described in Section 4.5.3.

6.5.1 QUANTITATIVE ANALYSIS – BASE CASE

Using the values and weights provided in Table 6-6, the MAA was conducted for the base case scenario. The analysis of Environmental, Technical, Project Economics and Socio-economic indicators, and calculation of sub-account merit ratings is provided in Table 6-7 through Table 6-10. The analysis of Environmental, Technical, Project Economics, and Socio-economic sub-accounts, and calculation of account merit ratings, is provided in Table 6-11 through Table 6-14.

Overall results of the MAA base case scenario for the MRS, and calculation of alternative merit ratings, are provided in Table 6-15. The results are summarized as follows:

- Alternative F is the overall preferred alternative with a merit rating of 5.1 out of 6.0
- Alternative D is the second overall preferred alternative with a merit ranking of 4.3 out of 6.0
- Alternative C was the third overall preferred alternative with a merit ranking of 3.4 out of 6.0
- Alternative E was the lowest ranking alternative with a merit ranking of 2.6 out of 6.0.

6.6 STEP 6: SENSITIVITY ANALYSIS

A sensitivity analysis was carried out to evaluate the robustness of the analytical process and to determine the degree to which various options are influenced by the choice of weightings.

Four sensitivity analysis scenarios were given consideration, in addition to the base case (weighting shown in brackets):

- Base Case
- Case 1: All accounts weighted equally:
  - Environmental (6)
  - Technical (6)
  - Project Economics (6)
  - Socio-economic (6)
- Case 2: All accounts, sub-accounts and indicators weighted equally:
  - Accounts (6)
  - Sub-accounts (6)
  - Indicators (6)
- Case 3: Prioritize people and environment:
  - Environmental (6)
  - Technical (2)
  - Project Economics (1)
  - Socio-economic (6)
- Case 4: Prioritize water (weight of all criteria related to water received a maximum weight):
  - Terrestrial and water resources (6)
  - Fisheries resources (6)
- Case 5: Project economics has no weight:
  - Environmental (6)

- Technical (3)
- Project Economics (0)
- Socio-economic (3).

The sensitivity analysis found that the MAA is robust with Alternative F being preferred for all scenarios. The results of the sensitivity analyses as described above are presented in Table 6-16 and Figure 6-10.

Table 6-1: Mine Rock Stockpile Alternatives Pre-Screening

Alternative	Do the alternatives avoid overprinting the preferred TMF and potential expansion area? (yes / no)	Do the alternatives avoid overprinting existing commercial aggregate operations? (yes / no)
Alternative A	No	Yes
Alternative B	No	Yes
Alternative C	Yes	Yes
Alternative D	Yes	Yes
Alternative E	Yes	Yes
Alternative F	Yes	Yes

Table 6-2: Summary Table of Candidate Mine Rock Stockpile Alternatives

Mine Rock Stockpile Alternative	Mine Rock Stockpile Construction Approach	Mine Rock Stockpile Operation Approach	Mine Rock Stockpile Closure Approach
Alternative C	Alternative C is situated in both the Dixie Creek north tributary subcatchment and the Dixie Creek south tributary subcatchment. Preparation and construction for Alternative C will include: – Haul roads to Alternative C – Clearing of the footprint for mine rock storage – Perimeter ditching – Collection sumps – Water pipeline. During the construction phase of the Project, mine rock sourced from the Viggo pit that is not designated as ore or used for construction material will be placed in the MRS.	Development of the Viggo pit will be completed prior to the operations phase of the Project. During operations, mine rock will only be hauled from LP Central pit to the MRS. It is anticipated that the MRS will achieve final contours when mining ceases in the LP Central pit. Where practical, the MRS, will be progressively rehabilitated by placement of a clay cover, or suitable low permeability soil material, growth media and seeded for vegetation during the operations phase of the Project.	At the onset of closure, the MRS is anticipated to be fully covered and vegetated. If any cover maintenance and/or repairs are required at closure they will be completed at this time. Once the observed water quality is suitable for discharge, drainage will be restored to Dixie Creek.
Alternative D	Mine rock stockpile Alternative D is situated in both the Dixie Creek north tributary subcatchment and the Dixie Creek south tributary subcatchment. Preparation and construction for Alternative D will include: – Haul roads to Alternative D – Clearing of the footprint for mine rock storage – Perimeter ditching – Collection sumps – Water pipeline. During the construction phase, mine rock sourced from the Viggo pit that is not designated as ore or used for construction material will be placed in the MRS.	Development of the Viggo pit will be completed prior to the operations phase of the Project. During operations, mine rock will only be hauled from LP Central pit to the MRS. It is anticipated that the MRS will achieve final contours when mining ceases in the LP Central pit. Where practical, the MRS, will be progressively rehabilitated by placement of a clay cover, or suitable low permeability soil material, growth media and seeded for vegetation during the operations phase of the Project.	At the onset of closure, the MRS is anticipated to be fully covered and vegetated. If any cover maintenance and/or repairs are required at closure they will be completed at this time. Once the observed water quality is suitable for discharge, drainage will be restored to Dixie Creek.
Alternative E	Alternative E consists of two stockpiles that avoid watercourses and waterbodies frequented by fish. The western MRS is situated directly east of Viggo pit and is located in both the Dixie Creek catchment and the Dixie Creek north tributary subcatchment. The eastern MRS is located south of Unnamed Waterbody 6 and is mainly sited in the Dixie Creek catchment. Preparation and construction for Alternative E will include: – Haul roads to the western Alternative E MRS – Clearing of the footprint for mine rock storage – Perimeter ditching – Collection sumps – Water pipeline. During the construction phase, mine rock sourced from the Viggo pit that is not designated as ore or used for construction material will be placed in the western MRS. Development of the eastern MRS will occur during the operations phase once the western MRS achieves final contours.	Development of the Viggo pit will be completed prior to the operations phase of the Project. During operations, mine rock will only be hauled from LP Central pit to the MRS. It is anticipated that the stockpiles will achieve final contours when mining ceases in the LP Central pit. Where practical, the stockpilesl will be progressively rehabilitated by placement of a clay cover, or suitable low permeability soil material, growth media and seeded for vegetation during the operations phase of the Project. Once the western MRS reaches capacity, mine rock will be placed in the eastern MRS. Construction of the eastern MRS will occur during the operations phase and will include the following preparation: – Haul roads to eastern Alternative E MRS that are not already constructed – Clearing of the footprint for mine rock storage – Perimeter ditching – Collection sumps – Water pipeline.	At the onset of closure, both stockpiles are anticipated to be fully covered and vegetated. If any cover maintenance and/or repairs are required at closure they will be completed at this time. Once the observed water quality is suitable for discharge, drainage will be restored to Dixie Creek from both stockpiles.
Alternative F	Alternative F is located in the Dixie Creek north tributary subcatchment. Preparation and construction for Alternative F will include: – Haul roads to Alternative F – Clearing of the footprint for mine rock storage – Perimeter ditching. During the construction phase, mine rock sourced from the Viggo pit that is not designated as ore or used for construction material will be placed in the MRS.	Development of the Viggo pit will be completed prior to the operations phase of the Project. During operations, mine rock will only be hauled from the LP Central pit to the MRS. It is anticipated that the MRS will achieve final contours when mining ceases in the LP Central pit. Where practical, the MRS, will be progressively rehabilitated by placement of a clay cover, or suitable low permeability soil material, growth media and seeded for vegetation during the operations phase of the Project.	At the onset of closure, the MRS is anticipated to be fully covered and vegetated. If any cover maintenance and/or repairs are required at closure they will be completed at this time. Once the observed water quality is suitable for discharge, drainage will be restored to Dixie Creek via the LP Central pit lake.

Table 6-3: Mine Rock Stockpile Accounts, Sub-Accounts and Indicators

Account	Subaccount	Subaccount Rationale	Indicator	Indicator Rationale
Environmental	Fisheries Resources	During the alternatives assessment, the MRS was sited to avoid large lakes and large rivers where possible. However, several of the alternatives that were evaluated would overprint smaller waters frequented by fish. Overprinting of waters frequented by fish will result in a change to fish habitat that would require fish habitat offset in accordance with the *Fisheries Act* and the MDMER.	Loss of Fish Habitat (Waterbodies)	There are numerous waterbodies surrounding the Great Bear Project that are known to be frequented by fish. The MRS alternative locations have generally avoided large waterbodies, however, some of the alternatives would overprint smaller waterbodies (ponds / small lakes). The alternatives that overprint waterbodies would require new fish habitat to be constructed under the *Fisheries Act* to avoid adverse impacts to fish and fish habitat. Alternatives that avoid or minimize overprinting waterbodies are preferred.
			Loss of Fish Habitat (Watercourses)	There are watercourses (intermittent, and/or permanently flowing) around the Great Bear Project. Baseline studies are currently on-going, and it was assumed that these creeks are fish bearing or are potentially frequented by fish and overprinting these watercourses would affect fish and fish habitat, which would require new offsetting habitat to be constructed under the *Fisheries Act*. Alternatives that avoid or minimize overprinting watercourses are preferred.
			Number of Watercourse Crossings	Haul roads that cross watercourses have the potential to affect fish habitat by altering the watercourse embankments, channel and substrate characteristics. Vehicle traffic over crossings can further affect the quality of fish habitat. MRS alternatives that do not require water crossings are preferred.
	Atmospheric Emissions	Air and noise emissions resulting from construction and operation of the MRS could affect the ambient air, noise and light environments.	Noise Emissions	Construction and operation of the MRS will result in noise emissions that can increase ambient sound levels that could affect wildlife. MRS alternatives located in proximity to the open pits will generally limit noise to areas also affected by acoustic emissions from the open pit and are preferred.
			GHG Emissions	Emissions from the Project may add to global GHG emissions and ultimately contribute to climate change. MRS alternatives with reduced hauling requirements were assumed to emit less GHGs and are therefore preferred. GHG emissions were assumed to be proportional to the distance that the mine rock will be hauled, therefore GHG emissions will be evaluated based on haul distance, with shorter haul distances being preferred.
	Terrestrial and Water Resources	Habitat will be lost from MRS overprinting of the land, although some habitat can be restored at closure. The Great Bear Project terrestrial ecosystems vary within the general area. Alternatives with a more compact MRS footprint would have less of an impact on the terrestrial ecosystem and were preferred. Additionally, direct overprinting of the MRS to drainage channels or changes to the local flows and water levels can alter the localized hydrology in the area. These alterations may result in water quality that could harm aquatic species and other animals using the water and may potentially affect the traditional land use of the water.	MRS Footprint	The MRS will overprint the terrestrial ecosystems. The total footprint of the MRS is a good metric for estimating impacts to terrestrial ecosystems. In general, a smaller MRS footprint would have fewer effects on the terrestrial environment and is considered preferred.
			Number of Subcatchment Areas Affected	Great Bear Resources prefers to keep the majority of the MRS footprint within the minimum number of subcatchment areas to limit the potential extent of environmental effects, to the extent practicable. Alternatives that are located in a single subcatchment area are preferred to alternatives that overprint multiple subcatchment areas. Overprinting of multiple subcatchment areas could result in effects to the surface water and groundwater quantities. Subcatchments will be evaluated to major tributaries such as, Dixie Creek (North / South), Troutlake River, Chukuni River, etc.
			Haul / Access Road Corridor Footprint	MRS alternatives that are located further from the open pit increase the segregation of habitat areas and corridors used by wildlife. Road networks increase the likelihood of vehicle collisions with wildlife through and create physical barriers for wildlife. MRS Alternatives that are located closer to the process plant with smaller roads lengths are preferred and assumed to reduce these effects.
	Species at Risk	Some species are sensitive or at risk of disappearing in Ontario or in Canada and have been afforded special protections. During Baseline studies SAR were identified in the area of the Project. Alternatives that have greater potential to harm these species (caribou, wolverine, bat and avian SAR) should be avoided.	Direct Loss of Wolverine Habitat	During baseline studies, wolverine or evidence of wolverine were observed on the Property, with wolverine sightings captured on trail cameras. Wolverine that disperse across the landscape could be negatively affected by the proposed Project. Therefore, the loss wolverine habitat should be minimized. Alternatives that avoid the avoid potential wolverine habitat are preferred.
			Direct Loss of Caribou Habitat	The Project area is located in the Sydney Range for caribou which is federally and provincially regulated habitat for caribou. Provincial habitat mapping for Sydney Range has the Property classified as Category 3 habitat. Category 3 areas are defined as having a high tolerance to alteration before the function is compromised. These areas indirectly support boreal caribou by maintaining (buffering) the overall predator refuge function within their range. They are comprised of currently young vegetation communities such as regenerating burn areas that are less than 40 years old. These areas are not generally occupied for long periods of time; however, boreal caribou may travel through them. Consistent with this Category 3 classification, baseline studies did not observe evidence of caribou on the Property. The loss of potential caribou habitat should be minimized with smaller TMF footprints, or footprints that avoid potential caribou habitat being preferred.
			Direct Loss of Avian SAR Habitat	During baseline studies a number of avian SAR were observed at the Property. Breeding habitat for avian SAR species should be avoided. The ecosites with confirmation of avian SAR habitat included marsh wetlands and shorelines, alternatives avoiding these areas are preferred.
			Direct Loss of Bat Foraging Habitat	The wetland, riparian and forest habitat in the Project area provides forage and maternity roosting habitat for SAR bats. The overprinting of these ecosites by the MRS will reduce / remove suitable habitat. The loss of SAR bat habitat should be minimized with alternatives that avoid bat habitat being preferred.
			Direct Loss of Maternity Roosting Habitat	

Table 6-3: Mine Rock Stockpile Accounts, Sub-Accounts and Indicators

Account	Subaccount	Subaccount Rationale	Indicator	Indicator Rationale
Technical	Design and Construction Factors	Engineering design factors for the MRS include some of the key contributions to the technical complexity of MRS alternatives. Alternatives that are less technically challenging, are likely to be characterized as lower risk are generally preferred.	Haul Distance	Long haul distance between the open pits/portal and MRS will result in increased Project footprint, the potential for increased dust/particulate emissions, long haul roads, and increased operational complexity. Locations closer to the open pits are preferred.
			Length of Perimeter Ditching	MRS alternatives that require less perimeter ditching will be preferred as they will require less construction effort and on-going maintenance. Alternatives with smaller ditch lengths are preferred.
	Technical Considerations	Great Bear Resources knows that safety is a primary concern when designing the MRS and as such, each alternative considered can be constructed to the minimum factor of safety. However, some technical factors have the potential to increase the risk or have a potential higher consequence of failure and should therefore be avoided. Technical considerations for water management presents a potential operational complexity for the MRS. Alternatives requiring reduced water management infrastructure (i.e., collection basins, pipelines, pumps, etc.) being preferred.	Stockpile Height	It was generally assumed that there is a proportional increase in potential consequence of MRS failure with an increase in stockpile height. It was assumed that taller facilities have greater potential energy to move materials. Therefore, stockpiles with smaller maximum heights are considered to incur less risk and are the preferred.
			Complexity of Facility Water Management	MRS alternatives with simpler water management are preferred. An increased number of seepage collection sumps (runoff and seepage) basins can increase the cost and complexity of water management of an alternative. MRSs that minimize the number of catch basins are preferred.
Economics	Capital Costs	Capital costs required for the MRS are considered as part of the Project economics. Costs may include site access and costing associated with aquatic habitat offset / compensation.	Habitat Offset / Compensation Costs	Capital costs for the construction of aquatic habitat offset / compensation features can be substantial. These features are normally required to be constructed early in the project life, generally as the construction impacts are implemented.
			Haul / Access Road Construction Costs	During the construction phase, haul roads will be constructed from the open pit area to the MRS to allow for hauling mine rock during operations. Alternatives that are located closer to the open pits result in lower construction costs and are preferred.
	Operating Cost	Operational costs associated with operating the MRS will affect Project economics and may include transportation of mine rock and water management.	Transportation of Mine Rock to the MRS	The cost of transporting mine rock to the MRS is proportional to the distance from the MRS to the open pits. Alternatives in close proximity to the open pit are preferred.
			Water Management	Water collection system alternatives with reduced requirements for active water management (e.g. reduced pumping requirements) will have lower operating costs and are preferred.
			Water Treatment Costs	MRS contact water will require treatment prior to discharge to the environment. Water treatment costs are assumed to be proportional to the volume of MRS contact water requiring treatment, with smaller quantities requiring treatment being preferred.
	Closure Cost	Following cessation of operations, the MRS will be decommissioned and rehabilitated to a stable and more ecologically productive state, in accordance with the regulatory requirements. Higher closure costs associated with the MRS will increase the requirement for closure bonding and will ultimately affect overall Project economics.	MRS Cover and Reclamation Costs	At closure, the MRS will require management for the potential generation of ML/ARD which varies for the alternatives. Alternatives with lower reclamation costs are preferred.
			Road Reclamation Costs	Haul and access road infrastructure will need to be closed and reclaimed at closure. Alternatives with lower associated reclamation costs being preferred.
			Inspection / Maintenance / Operations / Monitoring Costs	Post closure costs will be approximately proportional to the footprint of the MRS. Smaller MRS footprints will likely result in lower cost and are preferred.
Socio-economic	Indigenous Land Use	Great Bear Resources recognizes that Indigenous engagement is an integral part of the process through the permitting / approval and design phases which are influenced by Indigenous values and Indigenous knowledge. Great Bear Resources continues to engage with Indigenous communities to better understand these values in order to design the Project such that avoids or minimizes related effects to Indigenous Peoples.	Wild Rice Fields	During consultation for the Project, wild rice fields were identified as being of interest to Indigenous communities. However, wild rice fields observed in the Project area have not been confirmed to be used by Indigenous Peoples. Alternatives that avoid wild rice fields are generally preferred.
			Moose Late Wintering Habitat	During consultation for the Project, moose were identified as being of special importance to Indigenous communities. On the Property moose have been found to use the habitat for both late wintering and foraging. Both habitat types were considered, with alternatives that avoid moose habitat being preferred.
			Moose Foraging Habitat	
			Loss of Indigenous Land Uses	The lands around the Project may be used by Indigenous communities to support trapping, hunting and harvesting of traditional foods. MRS alternatives with larger terrestrial footprints will remove a greater footprint of land that may have been used for hunting and harvesting of traditional foods. Alternatives that affect less potential undisturbed areas that may support Indigenous land uses including fishing, hunting areas (moose) and potential plant (berry) harvesting areas are preferred.

Table 6-4: Mine Rock Stockpile Alternative Characterization

Account	Indicator	Parameter	Unit	Alternative C	Alternative D	Alternative E	Alternative F
Environmental	Loss of Fish Habitat (Waterbodies)	Area of waterbodies overprinted	ha	0.6	0.0	0.0	0.1
	Loss of Fish Habitat (Watercourses)	Length of stream loss of potential fish habitat	km	2.6	2.2	0.0	5.1
	Number of Watercourse Crossings	Number of watercourse crossings	#	2	1	1	0
	Noise Emissions	Max haul distance open pit to MRS	km	1.5	1.0	5.0	1.0
	GHG Emissions	Haul distance	km	2.9	2.6	6.4	1.1
	MRS Footprint	MRS footprint	ha	279.3	262.0	475.1	165.0
	Number of Subcatchment Areas Affected	Number of Subcatchments	#	4	3	4	1
	Haul / Access Road Corridor Footprint	Road footprint	ha	4.6	4.1	4.4	1.5
	Direct Loss of Wolverine Habitat	Loss of wolverine habitat	ha	56.9	60.2	107.4	37.3
	Direct Loss of Caribou Habitat	Loss of caribou habitat	ha	189.9	137.4	286.2	104.6
	Direct Loss of Avian SAR Habitat	Loss of avian SAR breeding habitat	ha	279.3	262.0	475.1	165.0
	Direct Loss of Bat Foraging Habitat	Loss of bat foraging habitat	ha	62.3	67.1	155.7	44.8
	Direct Loss of Maternity Roosting Habitat	Loss of bat maternity roosting habitat	ha	274.1	255.3	426.7	158.0
Technical	Haul Distance	Haul distance	km	2.9	2.6	6.4	1.1
	Length of Perimeter Ditching	Ditch length	km	6.6	7.2	15.1	4.3
	Stockpile Height	Height of the MRS	m	90.0	72.9	41.6	140.0
	Complexity of Facility Water Management	Number of collection basins	#	11	13	16	0
Economics	Habitat Offset / Compensation Costs	Cost (millions)	$	$3.1	$2.4	$0.0	$5.7
	Haul / Access Road Construction Costs	Cost (millions)	$	$3.8	$3.6	$6.3	$2.2
	Transportation of Mine Rock to the MRS	Haul distance	km	2.9	2.6	6.4	1.1
	Water Management	Cost (millions)	$	$9.2	$10.1	$11.6	$0.6
	Water Treatment Costs	Annual Cost (millions)	$/year	$1.3	$1.2	$2.1	$0.7
	MRS Cover and Reclamation Costs	Cost (millions)	$	$42.8	$40.2	$72.8	$25.3
	Inspection / Maintenance / Operations / Monitoring Costs	MRS footprint	ha	279.3	262.0	475.1	165.0
	Road Reclamation Costs	Cost (millions)	$	$0.046	$0.041	$0.044	$0.015
Socio-economic	Wild Rice	Loss of wild rice fields	ha	0.0	0.0	0.0	0.0
	Moose Late Wintering Habitat	Loss of moose late wintering habitat	ha	276.3	258.9	471.5	163.7
	Moose Foraging Habitat	Loss of moose foraging habitat	ha	2.3	6.8	44.8	1.6
	Loss of Indigenous Land Uses	MRS footprint	ha	279.3	262.0	475.1	165.0

Table 6-5: Mine Rock Stockpile Valuating Criteria

Account	Indicator	Parameter	Indicator Value					
			6 (Best)	5	4	3	2	1 (Worst)
Environmental	Loss of Fish Habitat (Waterbodies)	Area of waterbodies overprinted	0 ha	0.01 to 0.14 ha	0.15 to 0.29 ha	0.30 to 0.44 ha	0.45 to 0.59 ha	≥0.60 ha
	Loss of Fish Habitat (Watercourses)	Length of stream loss of potential fish habitat	<0.8 km	0.8 to 1.5 km	1.6 to 2.3 km	2.4 to 3.1 km	3.2 to 3.9 km	≥4.0 km
	Number of Watercourse Crossings	Number of watercourse crossings	0	1	2	3	4	5
	Noise Emissions	Max haul distance open pit to MRS	<1.5 km	1.5 to 2.3 km	2.4 to 3.2 km	3.3 to 4.0 km	4.1 to 4.9 km	≥5.0 km
	GHG Emissions	Haul distance	<2.0 km	2.0 to 2.2 km	2.3 to 2.4 km	2.5 to 2.7 km	2.8 to 2.9 km	≥3.0 km
	MRS Footprint	MRS footprint	<200.0 ha	200.0 to 262.4 ha	262.5 to 324.9 ha	325.0 to 387.4 ha	387.5 to 449.9 ha	≥450.0 ha
	Number of Subcatchment Areas Affected	Number of subcatchments	1	2	3	4	5	6
	Haul / Access Road Corridor Footprint	Road footprint	<1.0 ha	1.0 to 1.8 ha	1.9 to 2.7 ha	2.8 to 3.5 ha	3.6 to 4.4 ha	≥4.5 ha
	Direct Loss of Wolverine Habitat	Loss of wolverine habitat	<50.0 ha	50.0 to 62.4 ha	62.5 to 74.9 ha	75.0 to 87.4 ha	87.5 to 99.9 ha	≥100.0 ha
	Direct Loss of Caribou Habitat	Loss of caribou habitat	<110.0 ha	110.0 to 147.4 ha	147.5 to 184.9 ha	185.0 to 222.4 ha	222.5 to 259.9 ha	≥260.0 ha
	Direct Loss of Avian SAR Habitat	Loss of avian SAR breeding habitat	<200.0 ha	200.0 to 262.4 ha	262.5 to 324.9 ha	325.0 to 387.4 ha	387.5 to 449.9 ha	≥450.0 ha
	Direct Loss of Bat Foraging Habitat	Loss of bat foraging habitat	<50.0 ha	50.0 to 74.9 ha	75.0 to 99.9 ha	100.0 to 124.9 ha	125.0 to 149.9 ha	≥150.0 ha
	Direct Loss of Maternity Roosting Habitat	Loss of bat maternity roosting habitat	<200.0 ha	200.0 to 249.9 ha	250.0 to 299.9 ha	300.0 to 349.9 ha	350.0 to 399.9 ha	≥400.0 ha
Technical	Haul Distance	Haul distance	<2.0 km	2.0 to 2.2 km	2.3 to 2.4 km	2.5 to 2.7 km	2.8 to 2.9 km	≥3.0 km
	Length of Perimeter Ditching	Ditch length	<5.0 km	5.0 to 6.2 km	6.3 to 7.4 km	7.5 to 8.7 km	8.8 to 9.9 km	≥10.0 km
	Stockpile Height	Height of the MRS	<50.0 m	50.0 to 62.4 m	62.5 to 74.9 m	75.0 to 87.4 m	87.5 to 99.9 m	≥100.0 m
	Complexity of Facility Water Management	Number of collection basins	≤9	10	11	12	13	≥14
Economics	Habitat Offset / Compensation Costs	Cost (millions)	<$1.0	$1.0 to $1.9	$2.0 to $2.9	$3.0 to $3.9	$4.0 to $4.9	≥$5.0
	Haul / Access Road Construction Costs	Cost (millions)	<$3.0	$3.0 to $3.7	$3.8 to $4.4	$4.5 to $5.2	$5.3 to $5.9	≥$6.0
	Transportation of Mine Rock to the MRS	Haul distance	<2.0 km	2.0 to 2.2 km	2.3 to 2.4 km	2.5 to 2.7 km	2.8 to 2.9 km	≥3.0 km
	Water Management	Cost (millions)	<$1.0	$1.0 to $3.4	$3.5 to $5.9	$6.0 to $8.4	$8.5 to $10.9	≥$11.0
	Water Treatment Costs	Annual Cost (millions)	<$0.5	$0.5 to $0.8	$0.9 to $1.2	$1.3 to $1.5	$1.6 to $1.9	≥$2.0
	MRS Cover and Reclamation Costs	Cost (millions)	<$25.0	$25.0 to $36.2	$36.3 to $47.4	$47.5 to $58.7	$58.8 to $69.9	≥$70.0
	Inspection / Maintenance / Operations / Monitoring Costs	MRS footprint	<200.0 ha	200.0 to 262.4 ha	262.5 to 324.9 ha	325.0 to 387.4 ha	387.5 to 449.9 ha	≥450.0 ha
	Road Reclamation Costs	Cost	<$0.020	$0.020 to $0.025	$0.026 to $0.032	$0.033 to $0.038	$0.039 to $0.044	≥$0.045
Socio-economic	Wild Rice	Loss of wild rice fields	<0.4 ha	0.4 to 0.7 ha	0.8 to 1.1 ha	1.2 to 1.5 ha	1.6 to 1.9 ha	≥2.0 ha
	Moose Late Wintering Habitat	Loss of moose late wintering habitat	<200.0 ha	200.0 to 249.9 ha	250.0 to 299.9 ha	300.0 to 349.9 ha	350.0 to 399.9 ha	≥400.0 ha
	Moose Foraging Habitat	Loss of moose foraging habitat	<2.0 ha	2.0 to 11.4 ha	11.5 to 20.9 ha	21.0 to 30.4 ha	30.5 to 39.9 ha	≥40.0 ha
	Loss of Indigenous Land Uses	MRS footprint	<200.0 ha	200.0 to 262.4 ha	262.5 to 324.9 ha	325.0 to 387.4 ha	387.5 to 449.9 ha	≥450.0 ha

Table 6-6: Mine Rock Stockpile Weights and Scores for Multiple Accounts Analysis

Account	Weight	Subaccount	Weight	Indicator	Weight	Alternative C	Alternative D	Alternative E	Alternative F
Environmental	6	Fisheries Resources	6	Loss of Fish Habitat (Waterbodies)	6	1	6	6	5
				Loss of Fish Habitat (Watercourses)	6	3	4	6	1
				Number of Watercourse Crossings	2	4	5	5	6
		Atmospheric Emissions	3	Noise Emissions	2	5	6	1	6
				GHG Emissions	3	2	3	1	6
		Terrestrial and Water Resources	3	MRS Footprint	5	4	5	1	6
				Number of Subcatchment Areas Affected	6	3	4	3	6
				Haul / Access Road Corridor Footprint	2	1	2	2	5
		Species at Risk	3	Direct Loss of Wolverine Habitat	4	5	5	1	6
				Direct Loss of Caribou Habitat	3	3	5	1	6
				Direct Loss of Avian SAR Habitat	2	4	5	1	6
				Direct Loss of Bat Foraging Habitat	2	5	5	1	6
				Direct Loss of Maternity Roosting Habitat	2	4	4	1	6
Technical	3	Design and Construction Factors	6	Haul Distance	2	2	3	1	6
				Length of Perimeter Ditching	4	4	4	1	6
		Technical Considerations	4	Stockpile Height	4	2	4	6	1
				Complexity of Facility Water Management	3	4	2	1	6
Economics	1.5	Capital Costs	3	Habitat Offset / Compensation Costs	4	3	4	6	1
				Haul / Access Road Construction Costs	2	4	5	1	6
		Operating Cost	6	Transportation of Mine Rock to the MRS	6	2	3	5	6
				Water Management	4	2	2	1	6
				Water Treatment Costs	4	3	4	1	5
		Closure Cost	5	MRS Cover and Reclamation Costs	5	4	4	1	5
				Road Reclamation Costs	2	4	5	1	6
				Inspection / Maintenance / Operations / Monitoring Costs	3	1	2	2	6
Socio-economic	3	Indigenous Land Use	4	Loss of wild rice fields	2	6	6	6	6
				Loss of moose late wintering habitat	3	4	4	1	6
				Loss of moose foraging habitat	3	5	5	1	6
				Loss of Indigenous Land Uses	4	4	5	1	6

Table 6-7: Mine Rock Stockpile Environment Indicators

Sub-Account	Indicator	Weight	Alternative C		Alternative D		Alternative E		Alternative F	
			Value	Score	Value	Score	Value	Score	Value	Score
Fisheries Resources	Loss of Fish Habitat (Waterbodies)	6	1	6	6	36	6	36	5	30
	Loss of Fish Habitat (Watercourses)	6	3	18	4	24	6	36	1	6
	Number of Watercourse Crossings	2	4	8	5	10	5	10	6	12
	Sub Account Merit Score (S{S x W})		32		70		82		48	
	Sub Account Merit Rating (Rs = S{S x W}/SW)		*2.3*		*5.0*		*5.9*		*3.4*	
Atmospheric Emissions	Noise Emissions	2	5	10	6	12	1	2	6	12
	GHG Emissions	3	2	6	3	9	1	3	6	18
	Sub Account Merit Score (S{S x W})		16		21		5		30	
	Sub Account Merit Rating (Rs = S{S x W}/SW)		*3.2*		*4.2*		*1.0*		*6.0*	
Terrestrial and Water Resources	MRS Footprint	5	4	20	5	25	1	5	6	30
	Number of Subcatchment Areas Affected	6	3	18	4	24	3	18	6	36
	Haul / Access Road Corridor Footprint	2	1	2	2	4	2	4	5	10
	Sub Account Merit Score (S{S x W})		40		53		27		76	
	Sub Account Merit Rating (Rs = S{S x W}/SW)		3.1		4.1		2.1		5.8	
Species at Risk	Direct Loss of Wolverine Habitat	4	5	20	5	20	1	4	6	24
	Direct Loss of Caribou Habitat	3	3	9	5	15	1	3	6	18
	Direct Loss of Avian SAR Habitat	2	4	8	5	10	1	2	6	12
	Direct Loss of Bat Foraging Habitat	2	5	10	5	10	1	2	6	12
	Direct Loss of Maternity Roosting Habitat	2	4	8	4	8	1	2	6	12
	Sub Account Merit Score (S{S x W})		55		63		13		78	
	Sub Account Merit Rating (Rs = S{S x W}/SW)		*4.2*		*4.8*		*1.0*		*6.0*	

Table 6-8: Mine Rock Stockpile Technical Indicators

Sub-Account	Indicator	Weight	Alternative C		Alternative D		Alternative E		Alternative F	
			Value	Score	Value	Score	Value	Score	Value	Score
Design and Construction Factors	Haul Distance	2	2	4	3	6	1	2	6	12
	Length of Perimeter Ditching	4	4	16	4	16	1	4	6	24
	Sub Account Merit Score (S{S x W})		20		22		6		36	
	Sub Account Merit Rating (Rs = S{S x W}/SW)		*3.3*		*3.7*		*1.0*		*6.0*	
Safety Factors	Stockpile Height	4	2	8	4	16	6	24	1	4
	Complexity of Facility Water Management	3	4	12	2	6	1	3	6	18
	Sub Account Merit Score (S{S x W})		20		22		27		22	
	Sub Account Merit Rating (Rs = S{S x W}/SW)		*2.9*		*3.1*		*3.9*		*3.1*	

Table 6-9: Mine Rock Stockpile Project Economic Indicators

Sub-Account	Indicator	Weight	Alternative C		Alternative D		Alternative E		Alternative F	
			Value	Score	Value	Score	Value	Score	Value	Score
Capital Costs	Habitat Offset / Compensation Costs	4	3	12	4	16	6	24	1	4
	Haul / Access Road Construction Costs	2	4	8	5	10	1	2	6	12
	Sub Account Merit Score (S{S x W})		20		26		26		16	
	Sub Account Merit Rating (Rs = S{S x W}/SW)		*3.3*		*4.3*		*4.3*		*2.7*	
Operating Cost	Transportation of Mine Rock to the MRS	6	2	12	3	18	5	30	6	36
	Water Management	4	2	8	2	8	1	4	6	24
	Water Treatment Costs	4	3	12	4	16	1	4	5	20
	Sub Account Merit Score (S{S x W})		32		42		38		80	
	Sub Account Merit Rating (Rs = S{S x W}/SW)		*2.3*		*3.0*		*2.7*		*5.7*	
Closure Cost	MRS Cover and Reclamation Costs	5	4	20	4	20	1	5	5	25
	Inspection / Maintenance / Operations / Monitoring Costs	3	4	12	5	15	1	3	6	18
	Road Reclamation Costs	2	1	2	2	4	2	4	6	12
	Sub Account Merit Score (S{S x W})		34		39		12		55	
	Sub Account Merit Rating (Rs = S{S x W}/SW)		*3.4*		*3.9*		*1.2*		*5.5*	

Table 6-10: Mine Rock Stockpile Socio-economic Indicators

Sub-Account	Indicator	Weight	Alternative C		Alternative D		Alternative E		Alternative F	
			Value	Score	Value	Score	Value	Score	Value	Score
Indigenous Land Use	Wild Rice	2	6	12	6	12	6	12	6	12
	Moose Late Wintering Habitat	3	4	12	4	12	1	3	6	18
	Moose Foraging Habitat	3	5	15	5	15	1	3	6	18
	Loss of Indigenous Land Uses	4	4	16	5	20	1	4	6	24
	Sub Account Merit Score (S{S x W})		55		59		22		72	
	Sub Account Merit Rating (Rs = S{S x W}/SW)		4.6		4.9		1.8		6.0	

Table 6-11: Mine Rock Stockpile Environment Sub-Account Analysis

Sub-Account	Weight	Alternative C		Alternative D		Alternative E		Alternative F	
		Rating	Score	Rating	Score	Rating	Score	Rating	Score
Fisheries Resources	6	2.3	13.7	5.0	30.0	5.9	35.1	3.4	20.6
Atmospheric Emissions	3	3.2	9.6	4.2	12.6	1.0	3.0	6.0	18.0
Terrestrial and Water Resources	3	3.1	9.2	4.1	12.2	2.1	6.2	5.8	17.5
Species at Risk	3	4.2	12.7	4.8	14.5	1.0	3.0	6.0	18.0
Account Merit Score		45.2		69.4		47.4		74.1	
Account Merit Rating		*3.0*		*4.6*		*3.2*		*4.9*	

Table 6-12: Mine Rock Stockpile Technical Sub-Account Analysis

Sub-Account	Weight	Alternative C		Alternative D		Alternative E		Alternative F	
		Rating	Score	Rating	Score	Rating	Score	Rating	Score
Design and Construction Factors	6	3.3	20.0	3.7	22.0	1.0	6.0	6.0	36.0
Technical Considerations	4	2.9	11.4	3.1	12.6	3.9	15.4	3.1	12.6
Account Merit Score		31.4		34.6		21.4		48.6	
Account Merit Rating		*3.1*		*3.5*		*2.1*		*4.9*	

Table 6-13: Mine Rock Stockpile Project Economic Sub-Account Analysis

Sub-Account	Weight	Alternative C		Alternative D		Alternative E		Alternative F	
		Rating	Score	Rating	Score	Rating	Score	Rating	Score
Capital Costs	3	3.3	10.0	4.3	13.0	4.3	13.0	2.7	8.0
Operating Cost	6	2.3	13.7	3.0	18.0	2.7	16.3	5.7	34.3
Closure Cost	5	3.4	17.0	3.9	19.5	1.2	6.0	5.5	27.5
Account Merit Score		40.7		50.5		35.3		69.8	
Account Merit Rating		*2.9*		*3.6*		*2.5*		*5.0*	

Table 6-14: Mine Rock Stockpile Socio-economic Sub-Account Analysis

Sub-Account	Weight	Alternative C		Alternative D		Alternative E		Alternative F	
		Rating	Score	Rating	Score	Rating	Score	Rating	Score
Indigenous Land Use	4	4.6	18.3	4.9	19.7	1.8	7.3	6.0	24.0
Account Merit Score		18.3		19.7		7.3		24.0	
Account Merit Rating		*4.6*		*4.9*		*1.8*		*6.0*	

Table 6-15: Mine Rock Stockpile Multiple Accounts Analysis Summary

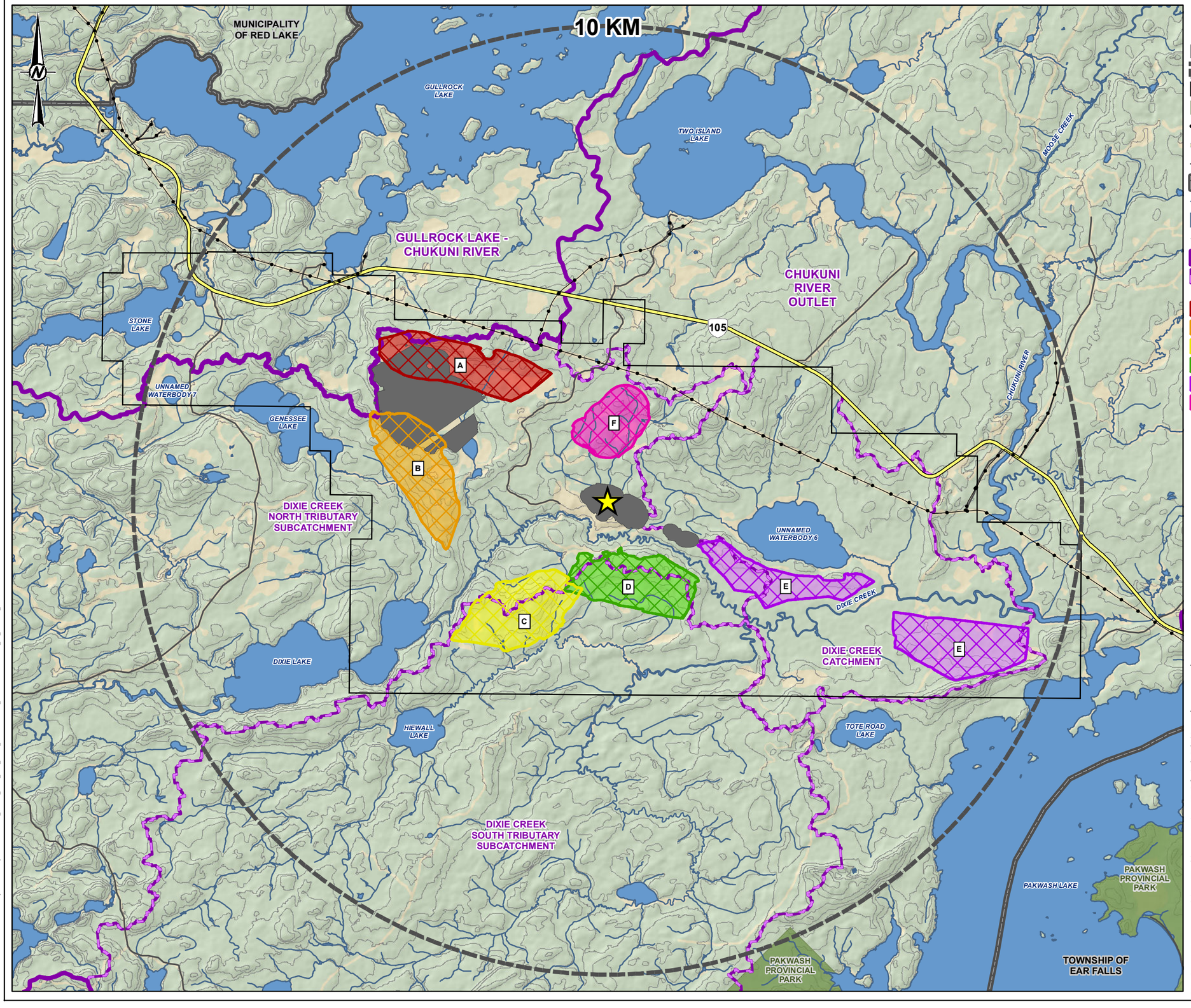
Account	Weight	Alternative C		Alternative D		Alternative E		Alternative F	
		Rating	Score	Rating	Score	Rating	Score	Rating	Score
Environment	6	3.0	18.1	4.6	27.7	3.2	18.9	4.9	29.6
Technical	3	3.1	9.4	3.5	10.4	2.1	6.4	4.9	14.6
Project Economics	1.5	2.9	4.4	3.6	5.4	2.5	3.8	5.0	7.5
Socio-economic	3	4.6	13.8	4.9	14.8	1.8	5.5	6.0	18.0
Alternative Merit Score		45.6		58.3		34.7		69.7	
Alternative Merit Rating		*3.4*		*4.3*		*2.6*		*5.2*	

Table 6-16: Mine Rock Stockpile Sensitivity Analysis

	Alternative C	Alternative D	Alternative E	Alternative F
Base Case	3.4	4.3	2.6	**5.2**
Case 1	3.4	4.2	2.4	**5.2**
Case 2	3.5	4.1	2.3	**5.3**
Case 3	3.7	4.5	2.5	**5.4**
Case 4	3.4	4.3	2.5	**5.3**
Case 5	3.4	4.4	2.6	**5.2**

Notes:

***Bold** indicates preferred Alternative*



LEGEND

- APPROXIMATE OPEN PIT CENTROID
- KEY MINE FEATURE (OPEN PIT AND TAILINGS MANAGEMENT FACILITY)
- OPEN PIT CENTROID BUFFER (LABELED ON MAP)
- PROPERTY BOUNDARY
- PROVINCIAL PARK
- EXISTING TRANSMISSION LINE
- HIGHWAY
- LOCAL ROAD
- LOWER TIER MUNICIPAL BOUNDARY
- WATERCOURSE
- WATERBODY
- CONTOURS (10 M INTERVAL)
- QUATERNARY CATCHMENT
- DIXIE CREEK SUBCATCHMENT

MINE ROCK STOCKPILE ALTERNATIVES

- ALTERNATIVE A
- ALTERNATIVE B
- ALTERNATIVE C
- ALTERNATIVE D
- ALTERNATIVE E
- ALTERNATIVE F

0 1 2 4
1:80,000 KILOMETRES

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)

1. CONTAINS INFORMATION LICENSED UNDER THE OPEN GOVERNMENT LICENCE - ONTARIO
2. WATERCOURSES AND WATERBODY ACQUIRED FROM LAND INFORMATION ONTARIO (MNRF) AND MODIFIED TO MATCH AERIAL IMAGERY AND LIDAR.
3. ROADS INFORMATION PROVIDED BY GREAT BEAR RESOURCES, AUGUST 2022.
4. PROPERTY BOUNDARY PROVIDED BY GREAT BEAR RESOURCES, AUGUST 2024.
5. COORDINATE SYSTEM: NAD 1983 UTM ZONE 15N

CLIENT
GREAT BEAR RESOURCES

PROJECT
GREAT BEAR PROJECT

TITLE
MINE ROCK STOCKPILE ALTERNATIVE SITE LOCATIONS

CONSULTANT

YYYY-MM-DD	2025-07-24
DESIGNED	----
PREPARED	MD
REVIEWED	HL
APPROVED	DR

PROJECT NO.	CONTROL	REV.	FIGURE
CA0031271	0001	A	6-1

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

0 25mm

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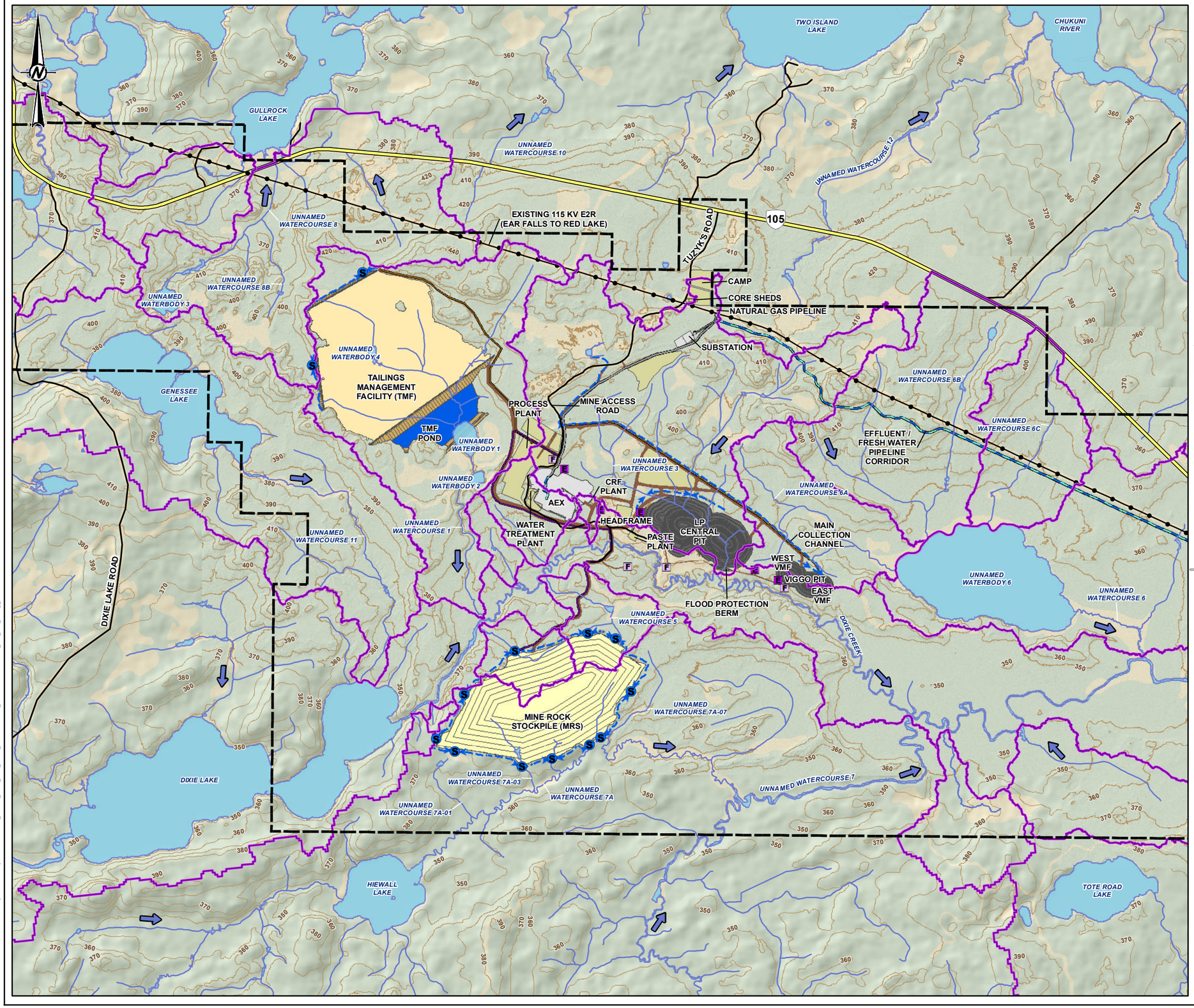
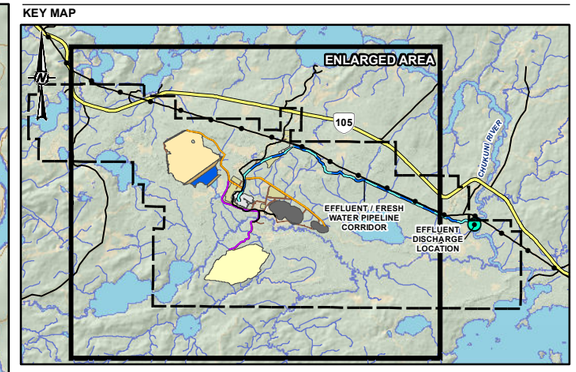


KEY MAP



SCALE 1:250,000

LEGEND

- PROPERTY BOUNDARY
- HIGHWAY (INCLUDING NATURAL GAS PIPELINE)
- LOCAL ROAD
- EXISTING TRANSMISSION LINE
- LOCAL SUBCATCHMENT
- WATERCOURSE
- WATERBODY
- CONTOURS (10 M INTERVAL)
- FLOW DIRECTION

PROPOSED MINE FEATURE

- OPEN PIT
- MINE ROCK STOCKPILE (MRS)
- TAILINGS MANAGEMENT FACILITY (TMF)
- SUMP
- COLLECTION DITCH
- MINE FACILITIES / INFRASTRUCTURE
- DAM
- POND
- ROAD
- ADVANCED EXPLORATION SITE (AEX)
- EXHAUST VENT RAISE
- FRESH AIR VENT RAISE
- TRANSMISSION LINE
- CONTACT WATER PIPELINE
- TAILINGS PIPELINE
- PASTE PLANT PIPELINE
- EFFLUENT / FRESH WATER PIPELINE CORRIDOR
- EFFLUENT DISCHARGE LOCATION

0 0.5 1 2

1:50,000 KILOMETRES

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE
2. VMF: VIGGO MANAGEMENT FACILITY

REFERENCE(S)

1. CONTAINS INFORMATION LICENSED UNDER THE OPEN GOVERNMENT LICENCE - ONTARIO
2. CONTOURS ACQUIRED FROM 2022 LIDAR SURVEY.
3. PROPERTY BOUNDARY PROVIDED BY GREAT BEAR RESOURCES, AUGUST 2024.
4. ROADS INFORMATION PROVIDED BY GREAT BEAR RESOURCES, AUGUST 2022.
5. SITE PLAN BASED ON INFORMATION PROVIDED BY GREAT BEAR RESOURCES, DECEMBER 2024 / JUNE 2025.
6. SUBCATCHMENT BOUNDARIES DELINEATED USING 2022 LIDAR AND THE ONTARIO FLOW ASSESSMENT TOOL (MNRF).
7. COORDINATE SYSTEM: NAD 1983 UTM ZONE 15N

CLIENT
GREAT BEAR RESOURCES

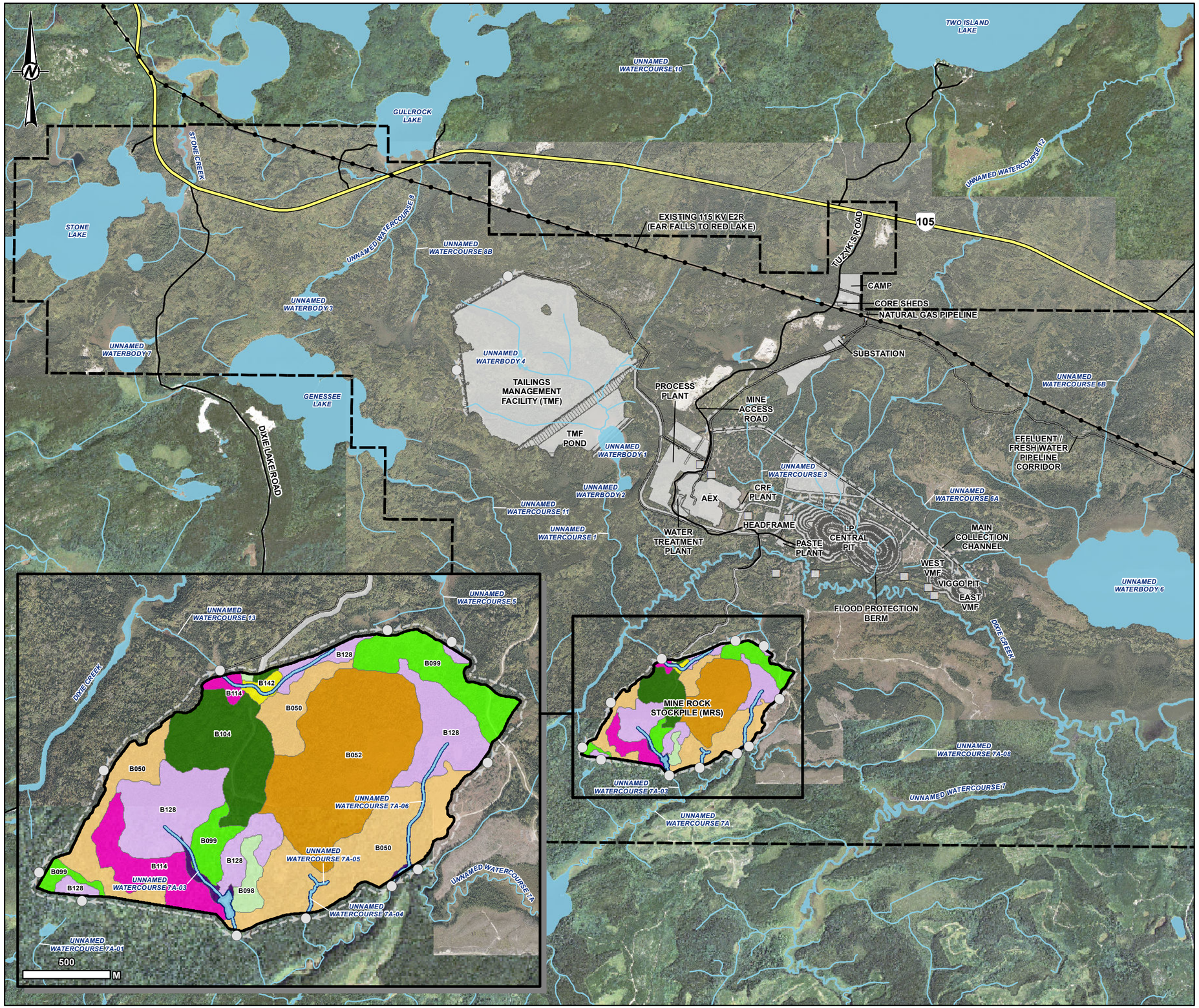
PROJECT
GREAT BEAR PROJECT

TITLE
MINE ROCK STOCKPILE ALTERNATIVE C CONFIGURATION

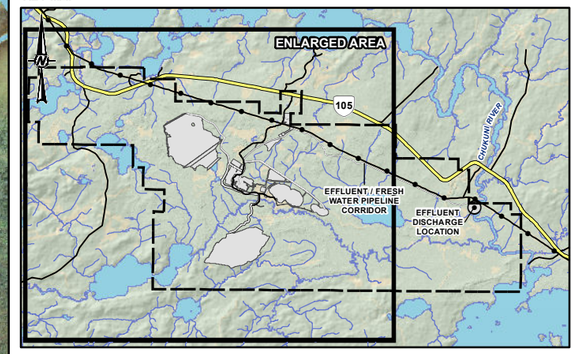
CONSULTANT

YYYY-MM-DD	2025-07-07
DESIGNED	----
PREPARED	MD
REVIEWED	HL
APPROVED	DR

PROJECT NO.	CONTROL	REV.	FIGURE
CA0031271	0001	A	6-2



KEY MAP



SCALE 1:250,000

LEGEND

- PROPERTY BOUNDARY
- PROPOSED MINE ROCK STOCKPILE (MRS)
- OTHER PROPOSED MINE FEATURE
- HIGHWAY (INCLUDING NATURAL GAS PIPELINE)
- LOCAL ROAD
- EXISTING TRANSMISSION LINE
- WATERCOURSE
- WATERBODY
- IMPACTED WATERCOURSE
- IMPACTED WATERBODY

IMPACTED VEGETATION COMMUNITY

- B050: *DRY TO FRESH, COARSE: PINE - BLACK SPRUCE CONIFER*
- B052: *DRY TO FRESH, COARSE: SPRUCE - FIR CONIFER*
- B098: *FRESH, SILTY TO FINE LOAMY: JACK PINE - BLACK SPRUCE DOMINATED*
- B099: *FRESH, SILTY TO FINE LOAMY: PINE - BLACK SPRUCE CONIFER*
- B104: *FRESH, SILTY TO FINE LOAMY: ASPEN - BIRCH HARDWOOD*
- B114: *MOIST, FINE: PINE - BLACK SPRUCE CONIFER*
- B128: *ORGANIC INTERMEDIATE CONIFER SWAMP*
- B135: *ORGANIC THICKET SWAMP*
- B142: *MINERAL MEADOW MARSH*

0 0.5 1 2

1:50,000 KILOMETRES

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE
2. VMF: VIGGO MANAGEMENT FACILITY

REFERENCE(S)

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5. SITE PLAN BASED ON INFORMATION PROVIDED BY GREAT BEAR RESOURCES, DECEMBER 2024 / JUNE 2025.
6. COORDINATE SYSTEM: NAD 1983 UTM ZONE 15N

CLIENT
GREAT BEAR RESOURCES

PROJECT
GREAT BEAR PROJECT

TITLE
MINE ROCK STOCKPILE ALTERNATIVE C VEGETATION COMMUNITIES AND FISHERIES RESOURCES

CONSULTANT

wsp

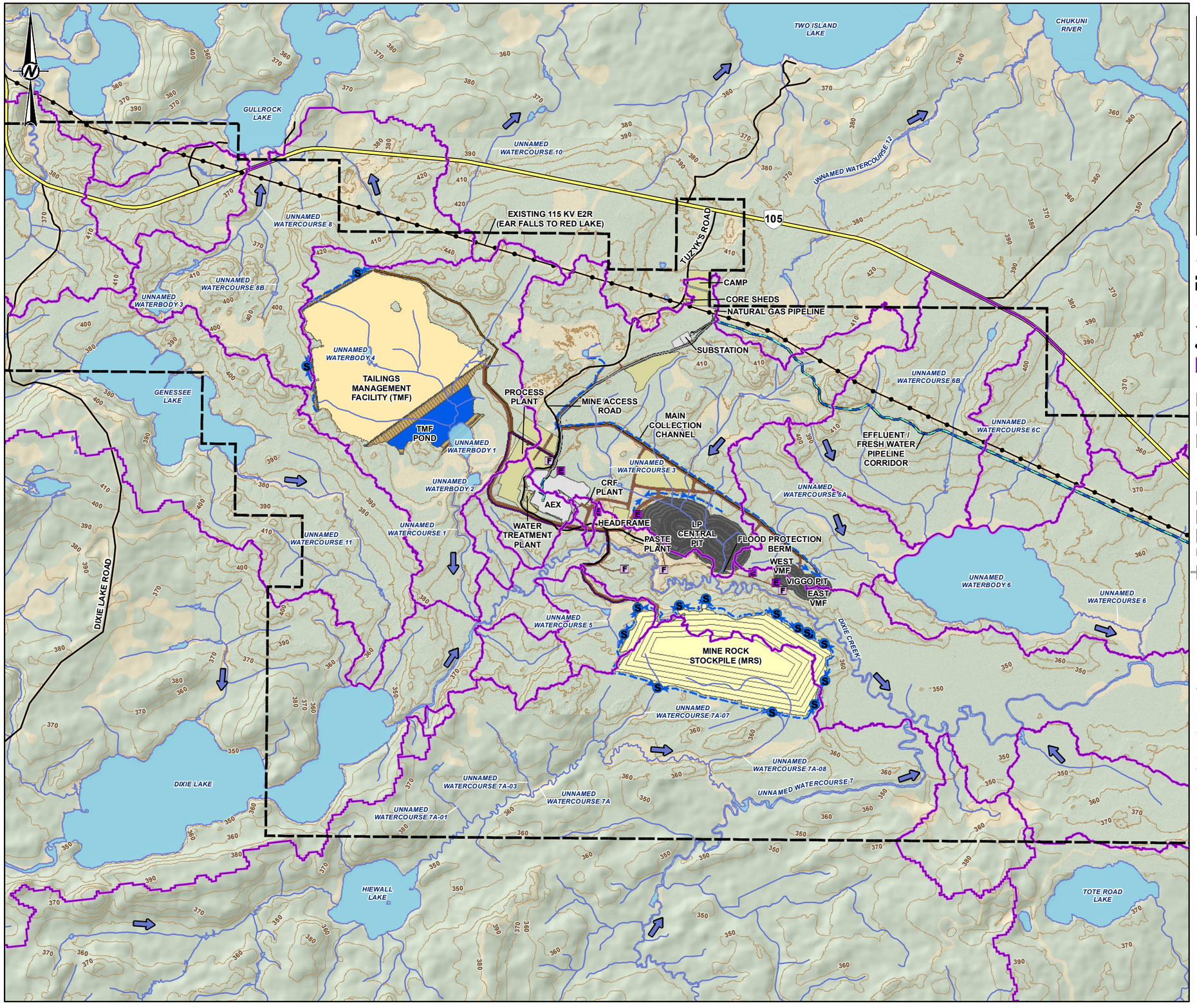
YYYY-MM-DD	2025-07-07
DESIGNED	----
PREPARED	MD
REVIEWED	HL
APPROVED	DR

PROJECT NO.	CONTROL	REV.	FIGURE
CA0031271	0001	A	6-3

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

0 25mm

PATH: X:\CA\CAOAK30\i-OAKMIS-FS1-Project\P2023\Projects\GME\MA23\03_Kinross_Great_Bear_Env\7_GIS\Alternatives_Assessment\MXD\MRS_A3_Impacts_6.mxd PRINTED ON: 2025-07-07 AT: 11:10:23 AM



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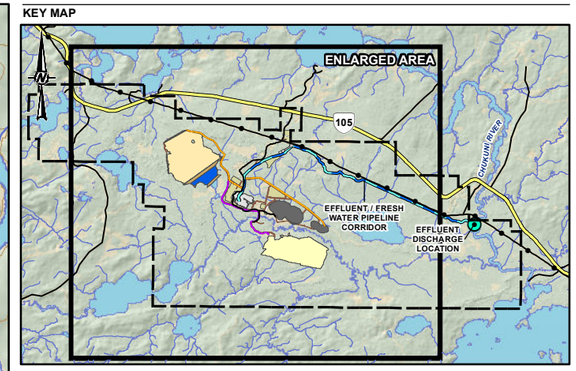

SCALE 1:250,000

LEGEND

- PROPERTY BOUNDARY
- HIGHWAY (INCLUDING NATURAL GAS PIPELINE)
- LOCAL ROAD
- EXISTING TRANSMISSION LINE
- LOCAL SUBCATCHMENT
- WATERCOURSE
- WATERBODY
- CONTOURS (10 M INTERVAL)
- FLOW DIRECTION

PROPOSED MINE FEATURE

- OPEN PIT
- MINE ROCK STOCKPILE (MRS)
- TAILINGS MANAGEMENT FACILITY (TMF)
- SUMP
- COLLECTION DITCH
- MINE FACILITIES / INFRASTRUCTURE
- DAM
- POND
- ROAD
- ADVANCED EXPLORATION SITE (AEX)
- EXHAUST VENT RAISE
- FRESH AIR VENT RAISE
- TRANSMISSION LINE
- CONTACT WATER PIPELINE
- TAILINGS PIPELINE
- PASTE PLANT PIPELINE
- EFFLUENT / FRESH WATER PIPELINE CORRIDOR
- EFFLUENT DISCHARGE LOCATION

0 0.5 1 2

1:50,000 KILOMETRES

NOTE(S)

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7. COORDINATE SYSTEM: NAD 1983 UTM ZONE 15N

CLIENT
GREAT BEAR RESOURCES

PROJECT
GREAT BEAR PROJECT

TITLE
MINE ROCK STOCKPILE ALTERNATIVE D CONFIGURATION

CONSULTANT

wsp

YYYY-MM-DD	2025-07-07
DESIGNED	----
PREPARED	MD
REVIEWED	HL
APPROVED	DR

PROJECT NO.	CONTROL	REV.	FIGURE
CA0031271	0001	A	6-4

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

0 25mm

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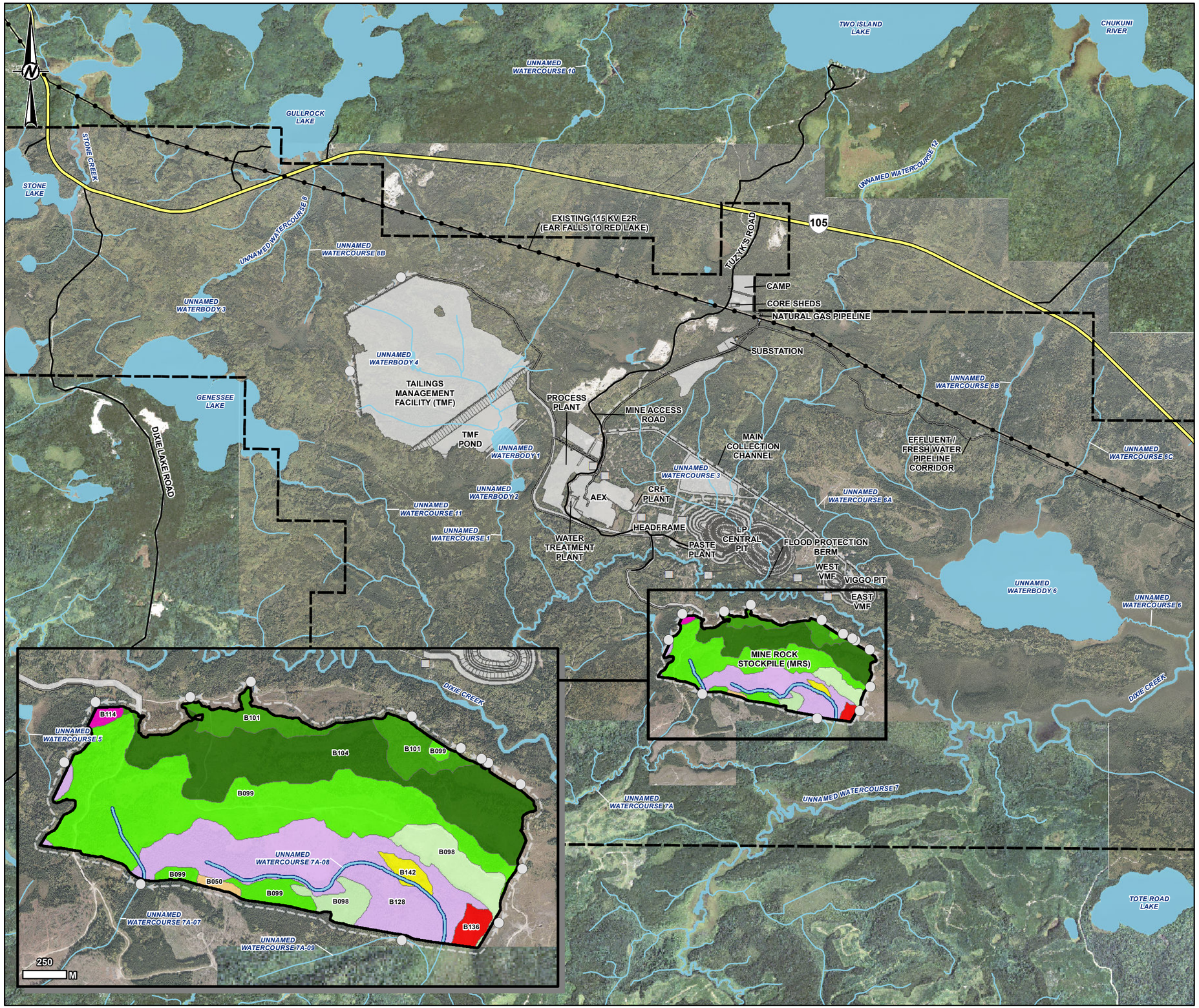

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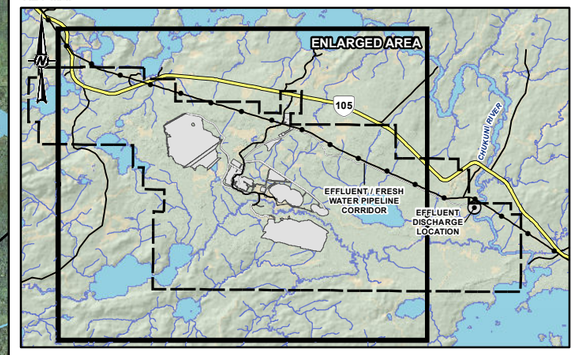

SCALE 1:250,000

LEGEND

- PROPERTY BOUNDARY
- PROPOSED MINE ROCK STOCKPILE (MRS)
- OTHER PROPOSED MINE FEATURE
- HIGHWAY (INCLUDING NATURAL GAS PIPELINE)
- LOCAL ROAD
- EXISTING TRANSMISSION LINE
- WATERCOURSE
- WATERBODY
- IMPACTED WATERCOURSE

IMPACTED VEGETATION COMMUNITY

- B050: *DRY TO FRESH, COARSE: PINE - BLACK SPRUCE CONIFER*
- B098: *FRESH, SILTY TO FINE LOAMY: JACK PINE - BLACK SPRUCE DOMINATED*
- B099: *FRESH, SILTY TO FINE LOAMY: PINE - BLACK SPRUCE CONIFER*
- B101: *FRESH, SILTY TO FINE LOAMY: SPRUCE - FIR CONIFER*
- B104: *FRESH, SILTY TO FINE LOAMY: ASPEN - BIRCH HARDWOOD*
- B114: *MOIST, FINE: PINE - BLACK SPRUCE CONIFER*
- B128: *ORGANIC INTERMEDIATE CONIFER SWAMP*
- B136: *SPARSE TREED FEN*
- B142: *MINERAL MEADOW MARSH*

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1:50,000 KILOMETRES

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6. COORDINATE SYSTEM: NAD 1983 UTM ZONE 15N

CLIENT
GREAT BEAR RESOURCES

PROJECT
GREAT BEAR PROJECT

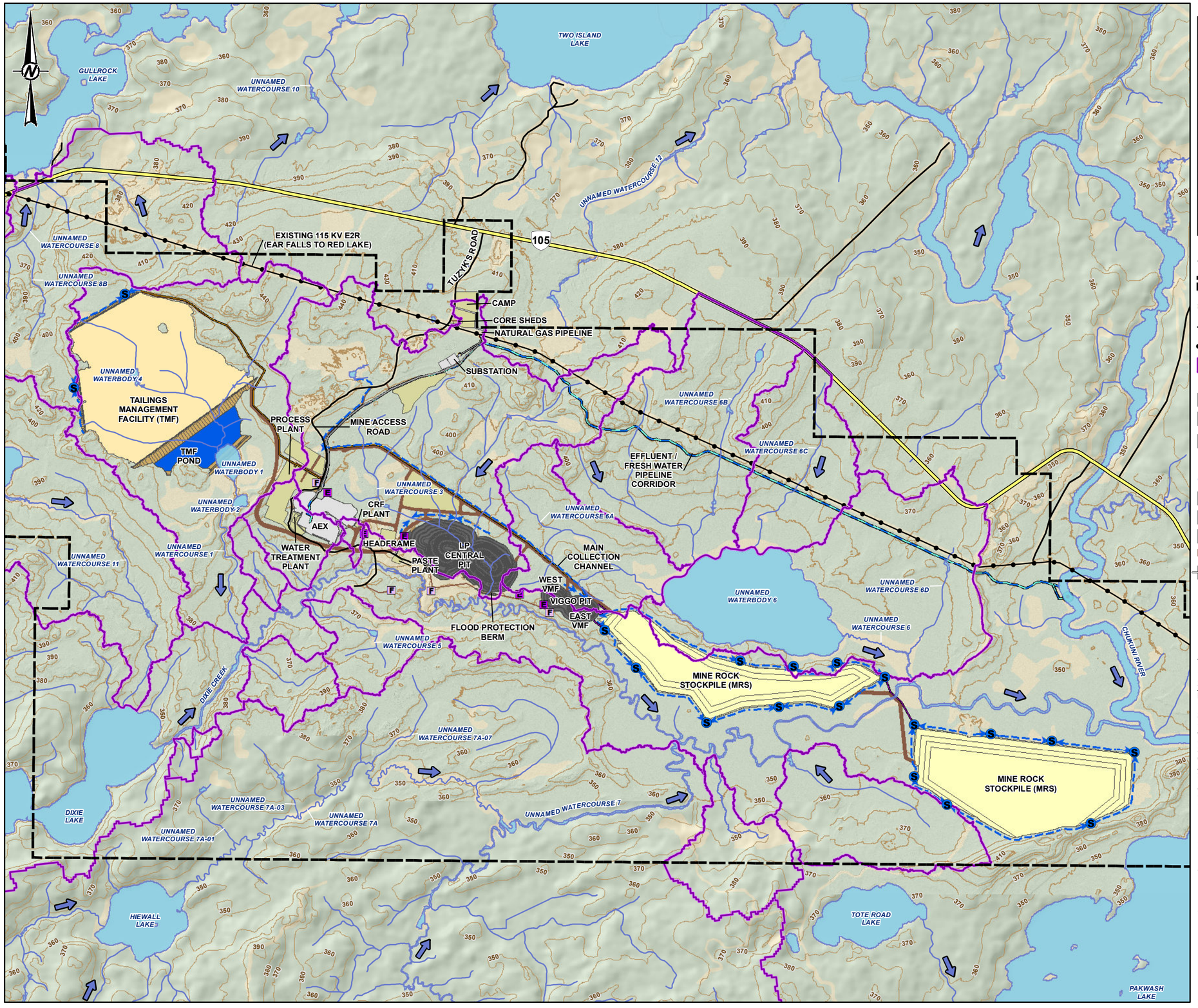
TITLE
MINE ROCK STOCKPILE ALTERNATIVE D VEGETATION COMMUNITIES AND FISHERIES RESOURCES

CONSULTANT

wsp

YYYY-MM-DD	2025-07-07
DESIGNED	----
PREPARED	MD
REVIEWED	HL
APPROVED	DR

PROJECT NO.	CONTROL	REV.	FIGURE
CA0031271	0001	A	6-5



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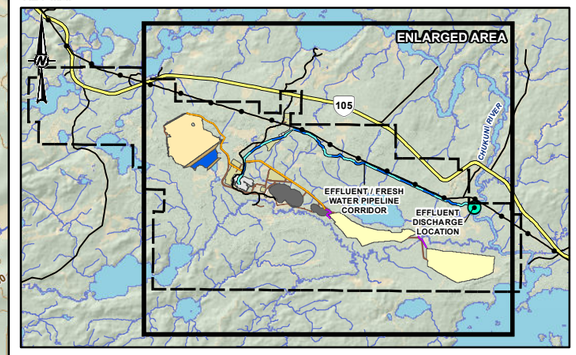

SCALE 1:250,000

LEGEND

- PROPERTY BOUNDARY
- HIGHWAY (INCLUDING NATURAL GAS PIPELINE)
- LOCAL ROAD
- EXISTING TRANSMISSION LINE
- LOCAL SUBCATCHMENT
- WATERCOURSE
- WATERBODY
- CONTOURS (10 M INTERVAL)
- FLOW DIRECTION

PROPOSED MINE FEATURE

- OPEN PIT
- MINE ROCK STOCKPILE (MRS)
- TAILINGS MANAGEMENT FACILITY (TMF)
- SUMP
- COLLECTION DITCH
- MINE FACILITIES / INFRASTRUCTURE
- DAM
- POND
- ROAD
- ADVANCED EXPLORATION SITE (AEX)
- EXHAUST VENT RAISE
- FRESH AIR VENT RAISE
- TRANSMISSION LINE
- CONTACT WATER PIPELINE
- TAILINGS PIPELINE
- PASTE PLANT PIPELINE
- EFFLUENT / FRESH WATER PIPELINE CORRIDOR
- EFFLUENT DISCHARGE LOCATION

0 0.5 1 2
1:50,000 KILOMETRES

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7. COORDINATE SYSTEM: NAD 1983 UTM ZONE 15N

CLIENT
GREAT BEAR RESOURCES

PROJECT
GREAT BEAR PROJECT

TITLE
MINE ROCK STOCKPILE ALTERNATIVE E CONFIGURATION

CONSULTANT

YYYY-MM-DD	2025-07-07
DESIGNED	----
PREPARED	MD
REVIEWED	HL
APPROVED	DR

PROJECT NO.	CONTROL	REV.	FIGURE
CA0031271	0001	A	6-6

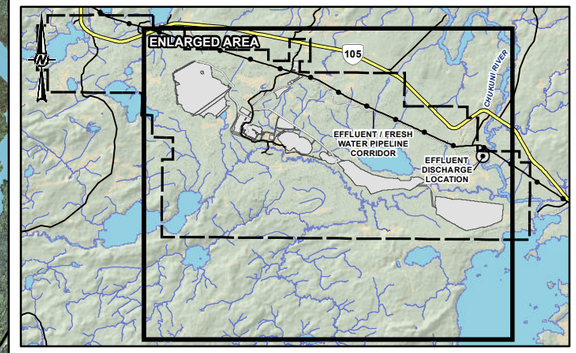
IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B

0 25mm

PATH: X:\CA\CAOAK300-OAK\MIS-FS1-Project\P-2023\Projects\OME.MA.23\03_Kinross_Great_Bear_Env\7_GIS\Alternatives_Assessment\MXD\MRS_Alt5_Site_Config_5.mxd PRINTED ON: 2025-07-07 AT: 10:18:44 AM

EXISTING 115 KV E2R (EAR FALLS TO RED LAKE)
TUZYK'S ROAD
105
UNNAMED WATERCOURSE 12
UNNAMED WATERCOURSE 8B
CAMP
CORE SHEDS
NATURAL GAS PIPELINE
SUBSTATION
UNNAMED WATERBODY 4
TAILINGS MANAGEMENT FACILITY (TMF)
PROCESS PLANT
MINE ACCESS ROAD
UNNAMED WATERCOURSE 6B
GENESSEE LAKE
TMF POND
UNNAMED WATERBODY 1
EFFLUENT / FRESH WATER PIPELINE CORRIDOR
UNNAMED WATERCOURSE 6C
UNNAMED WATERCOURSE 3
MAIN COLLECTION CHANNEL
UNNAMED WATERBODY 2
AEX
CRF PLANT
UNNAMED WATERCOURSE 6A
UNNAMED WATERCOURSE 1
HEADFRAME
LP CENTRAL PIT
WATER TREATMENT PLANT
PASTE PLANT
UNNAMED WATERCOURSE 11
WEST VMF
VIGGO PIT
EAST VMF
FLOOD PROTECTION BERM
UNNAMED WATERCOURSE 5
UNNAMED WATERBODY 6
UNNAMED WATERCOURSE 6
UNNAMED WATERCOURSE 6D
CHUKUNI RIVER
DIXIE CREEK
MINE ROCK STOCKPILE (MRS)
UNNAMED WATERCOURSE 13
UNNAMED WATERCOURSE 7A-08
UNNAMED WATERCOURSE 7
DIXIE LAKE
UNNAMED WATERCOURSE 7A-03
UNNAMED WATERCOURSE 7A-01
UNNAMED WATERCOURSE 7A
MINE ROCK STOCKPILE (MRS)
UNNAMED WATERBODY 6
UNNAMED WATERCOURSE 6
B099
B104
B114
B128
B136
B126
B101
B128
B104
B114
B128
B099
B128
500 M
DIXIE CREEK
B114
B128
B114
B119
B119
B128
B126
B055
B099
B104
B104
B114
B114
B197
B104
B055
B104
B099
B119
B055
B099
B050
CHUKUNI RIVER
DIXIE CREEK
500 M
PAKWASH LAKE

KEY MAP



SCALE 1:250,000

LEGEND

- PROPERTY BOUNDARY
- PROPOSED MINE ROCK STOCKPILE (MRS)
- OTHER PROPOSED MINE FEATURE
- HIGHWAY (INCLUDING NATURAL GAS PIPELINE)
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- EXISTING TRANSMISSION LINE
- WATERCOURSE
- WATERBODY

IMPACTED VEGETATION COMMUNITY

- B050: *DRY TO FRESH, COARSE: PINE - BLACK SPRUCE CONIFER*
- B055: *DRY TO FRESH, COARSE: ASPEN - BIRCH HARDWOOD*
- B099: *FRESH, SILTY TO FINE LOAMY: PINE - BLACK SPRUCE CONIFER*
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- B114: *MOIST, FINE: PINE - BLACK SPRUCE CONIFER*
- B119: *MOIST, FINE: ASPEN - BIRCH HARDWOOD*
- B126: *LOW TREED BOG*
- B128: *ORGANIC INTERMEDIATE CONIFER SWAMP*
- B136: *SPARSE TREED FEN*
- B197: *PAVEMENT / CONCRETE*

0 0.5 1 2
1:50,000 KILOMETRES

NOTE(S)
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CLIENT
GREAT BEAR RESOURCES

PROJECT
GREAT BEAR PROJECT

TITLE
MINE ROCK STOCKPILE ALTERNATIVE E VEGETATION COMMUNITIES AND FISHERIES RESOURCES

CONSULTANT

YYYY-MM-DD	2025-07-07
DESIGNED	----
PREPARED	MD
REVIEWED	HL
APPROVED	DR

PROJECT NO.	CONTROL	REV.	FIGURE
CA0031271	0001	A	6-7

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

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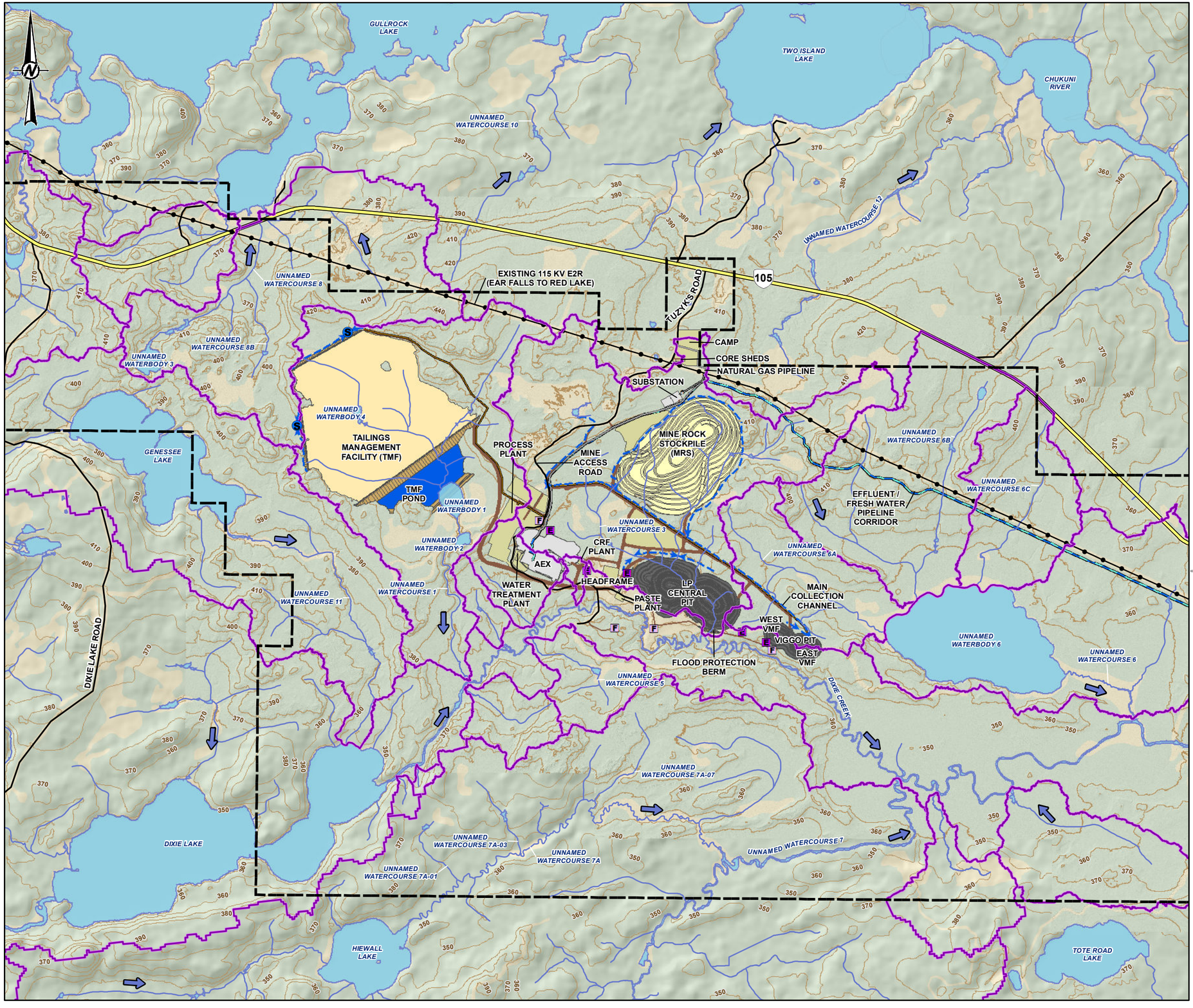
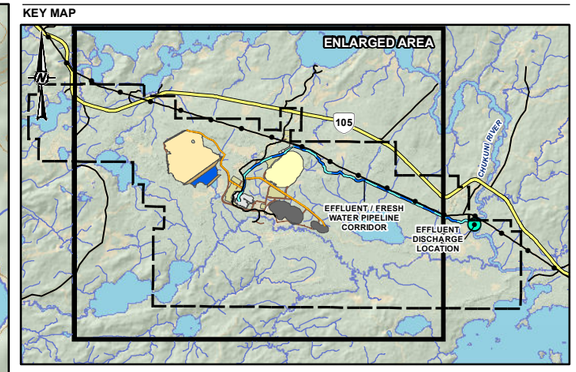


KEY MAP



SCALE 1:250,000

LEGEND

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0 0.5 1 2
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CLIENT
GREAT BEAR RESOURCES

PROJECT
GREAT BEAR PROJECT

TITLE
MINE ROCK STOCKPILE ALTERNATIVE F CONFIGURATION

CONSULTANT
wsp

YYYY-MM-DD	2025-07-07
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PREPARED	MD
REVIEWED	HL
APPROVED	DR

PROJECT NO.	CONTROL	REV.	FIGURE
CA0031271	0001	A	6-8

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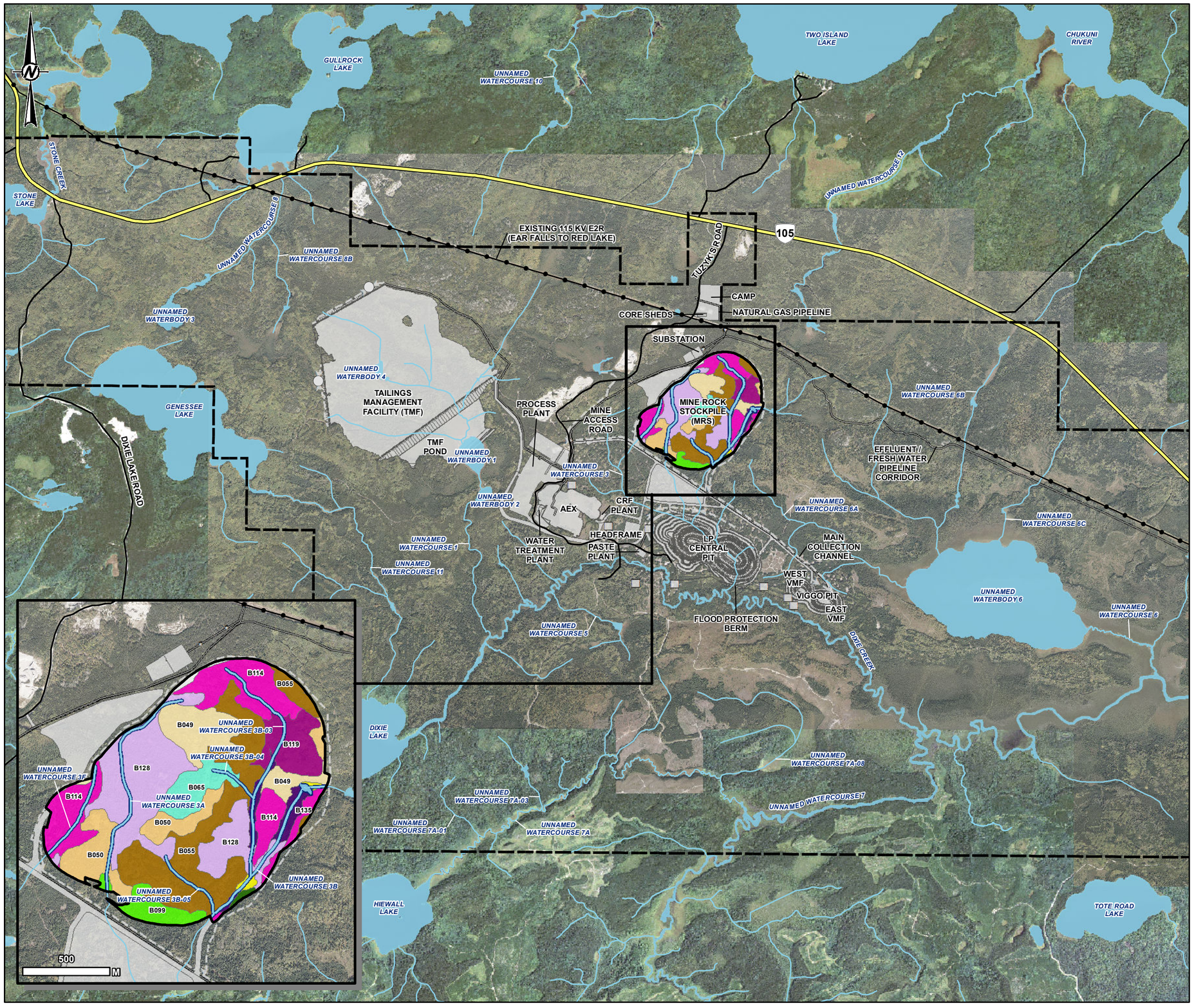
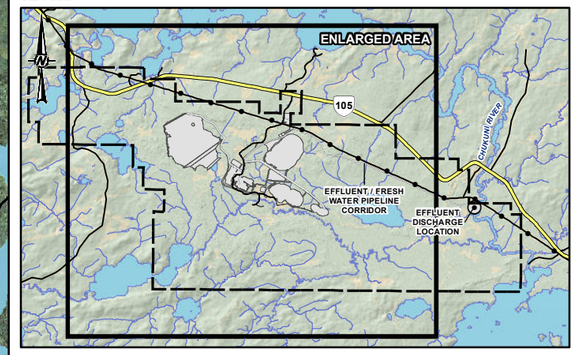
PATH: X:\CA\C\AOAK300-OAKMI\6-FS1-Project\P120\23-Projects\OME\MA2303_Kinross_Great_Bear_Env\7_GIS\Alternatives_Assessment\MXD\MRS_Alt6_Site_Config_5.mxd PRINTED ON: 2025-07-07 AT: 10:15:44 AM



KEY MAP



SCALE 1:250,000

LEGEND

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- IMPACTED WATERBODY

IMPACTED VEGETATION COMMUNITY

- B034: *DRY, SANDY: JACK PINE – BLACK SPRUCE DOMINATED*
- B049: *DRY TO FRESH, COARSE: JACK PINE - BLACK SPRUCE DOMINATED*
- B050: *DRY TO FRESH, COARSE: PINE - BLACK SPRUCE CONIFER*
- B055: *DRY TO FRESH, COARSE: ASPEN - BIRCH HARDWOOD*
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- B128: *ORGANIC INTERMEDIATE CONIFER SWAMP*
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2. AERIAL IMAGERY PROVIDED BY GREAT BEAR RESOURCES (SCENE DATE: SEPTEMBER 2022).
3. PROPERTY BOUNDARY PROVIDED BY GREAT BEAR RESOURCES, AUGUST 2024.
4. ROADS INFORMATION PROVIDED BY GREAT BEAR RESOURCES, AUGUST 2022.
5. SITE PLAN BASED ON INFORMATION PROVIDED BY GREAT BEAR RESOURCES, DECEMBER 2024 / JUNE 2025.
6. COORDINATE SYSTEM: NAD 1983 UTM ZONE 15N

CLIENT
GREAT BEAR RESOURCES

PROJECT
GREAT BEAR PROJECT

TITLE
MINE ROCK STOCKPILE ALTERNATIVE F VEGETATION COMMUNITIES AND FISHERIES RESOURCES

CONSULTANT
wsp

YYYY-MM-DD	2025-07-07
DESIGNED	----
PREPARED	MD
REVIEWED	HL
APPROVED	DR

PROJECT NO.	CONTROL	REV.	FIGURE
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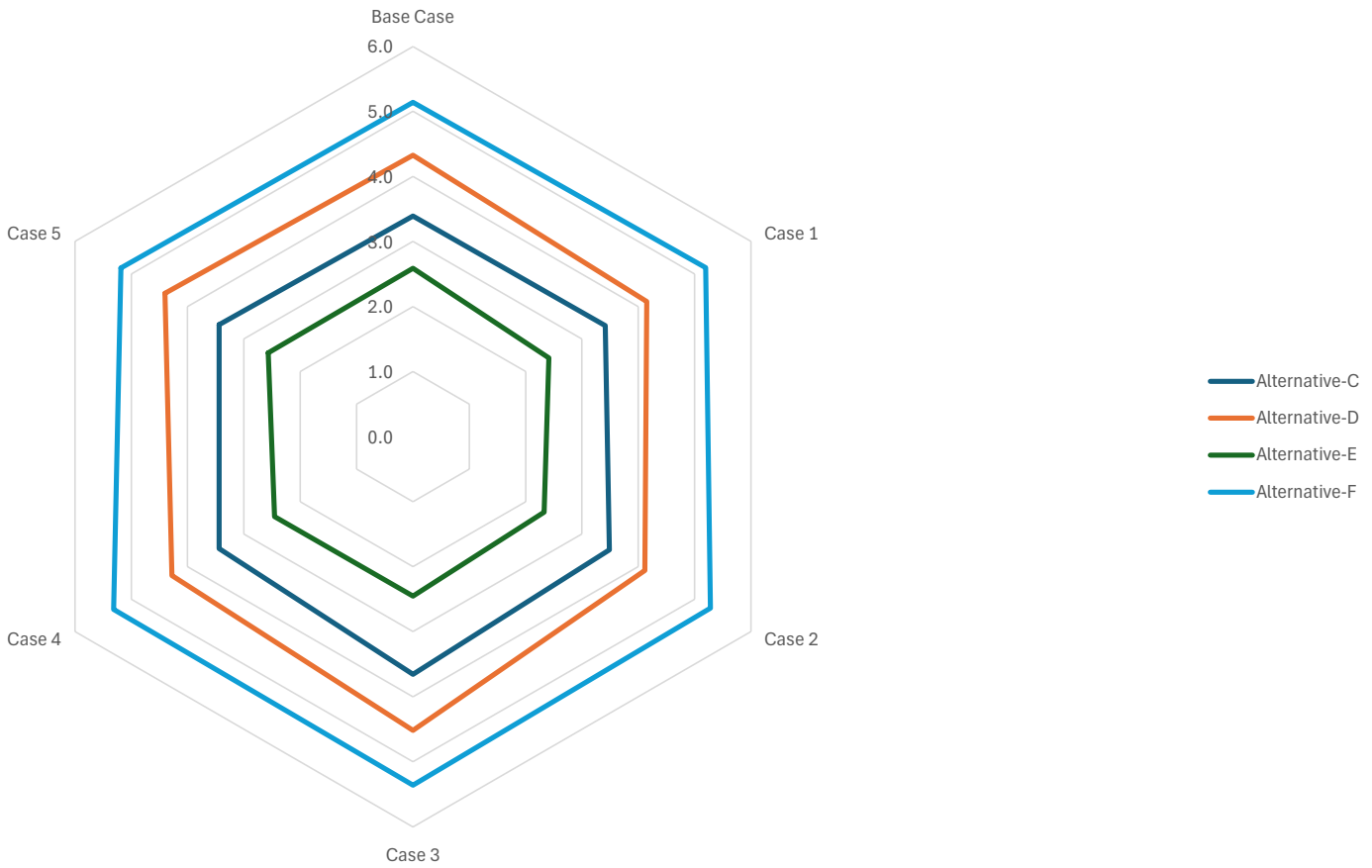


Notes

KINROSS Great Bear

Mine Rock Ore Stockpile Sensitivity Analysis

Great Bear Project Assessment for Alternatives for Storage of Mine Waste

Great Bear Project

Figure Number		6-10	
Project Number		OMEMA2303	
Date		December 2025	
Drawn	HL	Reviewed	DR

7 LOW GRADE ORE STOCKPILES

7.1 STEP 1: CANDIDATE LOW GRADE ORE STOCKPILE ALTERNATIVES

During the construction and operations phases of the Project, mine rock and ore will be extracted from the underground workings, LP Central pit and Viggo pit. Mined low grade ore extracted during mining will be placed in the LGO if not sent directly for processing. The LGO will need to be proximal to the process plant to avoid the high costs associated with double handling. The amount of material in the LGO will vary over the life of the mine up to approximately 14 Mm^3 of low grade ore.

Four LGO locations were identified for the Project as shown in Figure 7-1. Alternatives A and C avoid waterbodies and watercourses that are frequented by fish.

7.1.1 ALTERNATIVE A

Alternative A is wholly situated within the Property (Figure 7-1) and is located about 3 km northwest of the LP Central pit, north of the process plant, between the preferred TMF and MRS locations. Alternative A is located within the Dixie Creek north tributary subcatchment which ultimately drains to the Chukuni River via Dixie Creek. Alternative A does not overprint waterbodies and / or watercourses frequented by fish.

7.1.2 ALTERNATIVE B

Alternative B is located within the Property as illustrated in Figure 7-1, about 2 km west of the LP Central pit and is south of the preferred TMF location. Alternative B is within the Dixie Creek north tributary subcatchment which ultimately drains to the Chukuni River.

7.1.3 ALTERNATIVE C

Alternative C is fully within the Property (Figure 7-1) and is located about 3 km west of LP Central pit and is south of the preferred TMF location. Alternative B sits the Dixie Creek north tributary subcatchment which ultimately drains to the Chukuni River. Alternative C does not overprint waterbodies and/or watercourses frequented by fish.

7.1.4 ALTERNATIVE D

Alternative D is wholly situated within the Property as illustrated in Figure 7-1 and is located about 1 km northwest of LP Central pit, east of the process plant, south of the preferred MRS and sited in the Dixie Creek north tributary subcatchment which ultimately drains to the Chukuni River.

7.2 STEP 2: PRE-SCREENING ASSESSMENT

The pre-screening criteria for the alternatives were developed to consider preferred alternative LGO locations for the Project. As ore stored in the LGO will need to be picked up again and transferred to the process plant for processing, proximity to the process plant is critical both to reduce emissions and improve Project economics. Based on these considerations, the pre-screening criteria for the LGO alternatives are:

- Do the alternatives avoid overprinting the preferred TMF and potential expansion area? (yes / no)
- Do the alternatives avoid overprinting the preferred MRS? (yes / no)
- Are the alternatives sited within a 5 km radius of the process plant? (yes / no)
- Do the alternatives avoid overprinting existing commercial aggregate operations? (yes / no).

A 5 km radius was used in the pre-screening criteria for the LGO alternatives to provide viable options, including an LGO alternative that avoids waterbodies and watercourses frequented by fish. It is operationally and economically preferable to have the LGO located within a radius of less than 2 km as the material stored in the LGO will need to be double handled (haul: open pits to LGO; haul: LGO to process plant). Based on the pre-screening criteria, all four LGO candidate alternatives were carried forward as summarized in Table 7-1. The four LGO stockpiles are briefly summarized in Table 7-2.

7.3 STEP 3: LOW GRADE ORE STOCKPILE ALTERNATIVES CHARACTERIZATION

Through the pre-screening process described in Section 7.2, no alternatives were removed from consideration, and all are carried forward for consideration in the MAA. The four LGO alternatives are detailed in the following subsections. The alternatives were developed to support ranking and consideration in the MAA with the purpose of identifying the preferred LGO location. The rationale for the sub-accounts and indicators used in the MAA for the LGO are summarized in Table 7-3.

7.3.1 ALTERNATIVE A

Alternative A is wholly situated within the Property as illustrated in Figure 7-2 and is located about 3 km northwest of LP Central pit, situated between the preferred alternatives for the TMF and MRS. During operations low grade ore will be stored in the LGO in lifts with an overall side slope of about 2H:1V. The low grade ore from the LGO will be processed in the process plant during the operations phase and the quantity of material stored in the LGO will vary over the life of mine. It is anticipated that the maximum extents of the LGO will be:

- Total footprint: 45.8 ha
- Maximum height: 28 m
- Maximum elevation: 400 masl.

Low grade ore will be transferred to the LGO via the haul road in place to support construction of the TMF. An existing trail will be expanded connecting Alternative A to the haul road west of the process plant. An additional road network of 1 km will be required. The total haul length from LP Central pit is anticipated to be about 5 km, with ore being hauled from the LP Central pit, south of the process plant and then north to the LGO.

Contact water will be collected from the LGO via gravity draining perimeter ditches and collection sumps located in low lying areas around the LGO. Contact water from the LGO will be transferred by a pipeline to the collection channel to the VMF. Alternative A will need approximately 2.6 km of perimeter ditching, two collection sumps and 2.8 km of pipeline to transfer the contact water as shown schematically in Figure 7-2.

Alternative A was designed to avoid overprinting waterbodies and watercourses that are frequented by fish and therefore there are no impacts to aquatic habitats. Construction of Alternative A will result in the loss of vegetation communities including but not limited to pine, black spruce, birch hardwood, aspen, treed fen and organic intermediate swamp. The overprinted vegetation communities are shown in Figure 7-3.

During consultation, wild rice fields and moose habitat were identified as being of interest to Indigenous communities, and baseline studies identified SAR species and associated habitat at the Project. Alternative A is anticipated to approximately overprint the following vegetation and habitat types:

- Wild rice fields: 0 ha
- Moose late wintering habitat: 45.8 ha
- Moose foraging habitat: 7.2 ha
- SAR Habitats:
  - Caribou refuge habitat: 18.4 ha
  - Bat maternity roost habitat: 38.7 ha
  - Bat foraging habitat: 8.1 ha
  - Wolverine habitat: 0.9 ha
  - Avian SAR habitat: 45.8 ha.

To support the MAA and ranking of the LGO alternatives, comparative cost estimates were developed based on the alternative quantities with the purpose of differentiating the alternatives and consider the following and details in Table 7-4:

- Footprint clearing: 45.8 ha
- Perimeter ditching: 2.6 km
- Seepage collection sumps: 2
- Additional road network: 1.0 km
- Pipeline length: 2.8 km.

Based on the assumptions provided in Appendix C, it is anticipated that Alternative A will have a comparative construction cost of about $3.4 million.

During operations, the low grade ore stored in the LGO as material will be moved for processing. Prior to closure, all the low grade ore stored in the LGO will be processed and the LGO will be depleted. At closure the footprint of the LGO will be recontoured to restore naturalized drainage. The LGO footprint will be covered with overburden and a vegetative growth layer prior to seeding for vegetation. The estimated comparative closure cost for Alternative A is about $7 million. The comparative closure cost estimates are provided in Appendix C.

7.3.2 ALTERNATIVE B

Alternative B is located within the Property (Figure 7-4), about 2 km west of LP Central pit and south of the process plant. During operations, low grade ore will be stored in the LGO in lifts with an overall side slope of about 2H:1V. The low grade ore from the LGO will be processed in the process plant during the operations phase and the quantity of material stored in the LGO will vary over the life of mine. It is anticipated that the maximum extents of the LGO will be:

- Total footprint: 39.1 ha
- Maximum height: 50 m
- Maximum elevation: 460 masl.

Low grade ore will be transferred to the LGO via the haul road in place to support construction of the TMF. The haul road will be extended south of the AEX Program area to transfer low grade ore to the LGO. An additional road network of about 0.2 km will be required and the haul length from LP Central pit is anticipated to be about 2.1 km.

Contact water will be collected from the LGO via gravity draining perimeter ditches and collection sumps located in low lying areas around the LGO. Contact water from the LGO will be transferred by a pipeline to the collection channel that drains to the VMF. Alternative B will require 2.4 km of perimeter ditching, eight collection sumps and 2.6 km of pipeline as illustrated in Figure 7-4.

Alternative B overprints portions of Unnamed Watercourse 2 and Unnamed Watercourse 4, which are tributaries of Dixie Creek. In the western portion of the Alternative B footprint there is a minor unnamed waterbody that will also be overprinted during construction of the LGO. Aquatic habitat compensation will be required to offset the losses to the overprinted fish habitat. Comparative preliminary cost estimates were developed with the purposes of supporting ranking of the alternatives in the MAA. It is anticipated that Alternative B will have an approximate fish compensation cost of about $1.3 million.

Construction of Alternative B will result in overprinting of vegetation communities, predominantly pine-black spruce conifer as shown in Figure 7-5.

During consultation, wild rice fields and moose habitat were identified as being of interest to Indigenous communities, and baseline studies identified SAR species and associated habitat at the Project. Alternative B is anticipated to approximately overprint the following vegetation and habitat types:

- Wild rice fields: 0 ha
- Moose late wintering habitat: 39.0 ha
- Moose foraging habitat: 0.0 ha
- SAR Habitats:
  - Caribou refuge habitat: 0.0 ha
  - Bat maternity roost habitat: 38.1 ha
  - Bat foraging habitat: 1.3 ha
  - Wolverine habitat: 0.0 ha
  - Avian SAR habitat: 39.1 ha.

To support the MAA and ranking of the LGO alternatives, comparative cost estimates were developed based on the alternative quantities with the purpose of differentiating the alternatives and consider the following and details in Table 7-4:

- Footprint clearing: 39.1 ha
- Perimeter ditching: 2.4 km
- Seepage collection sumps: 8
- Additional road network: 0.2 km
- Pipeline length: 2.6 km.

Based on the assumptions provided in Appendix C, it is anticipated that Alternative B will have a comparative construction cost of about $7.7 million.

During operations, the ore stored in the LGO will be transported to the process plant for processing. Prior to closure, all ore stored in the LGO will be processed and the LGO will be depleted. At closure the footprint of the LGO will be recontoured to restore naturalized drainage. The LGO footprint will be covered with overburden and a vegetative growth layer prior to seeding for vegetation. The estimated comparative cost for Alternative B is about $6 million. The comparative closure cost estimates are provided in Appendix C.

7.3.3 ALTERNATIVE C

Alternative C is wholly situated within the Property, about 3 km west of the LP Central pit and south of the preferred TMF location as shown in Figure 7-6. During operations, low grade ore will be stored in the

LGO in lifts with an overall side slope of about 2H:1V. The low grade ore from the LGO will be processed in the process plant during the operations phase and the quantity of material stored in the LGO will vary over the life of mine. It is anticipated that the maximum extents of the LGO will be:

- Total footprint: 48.2 ha
- Maximum height: 59 m
- Maximum elevation: 415 masl.

Low grade ore will be transferred to the LGO via the haul road in place to support construction of the TMF. A trail on the western side of the process plant will be extended to connect to the haul road to the LGO. The haul road to Alternative C will cross Unnamed Watercourse 1, north of Unnamed Waterbody 2. An additional road network of 1.5 km will be required and the haul length from the LP Central pit is anticipated to be about 4.3 km.

Contact water will be collected from the LGO via gravity draining perimeter ditches and collection sumps located in low lying areas around the perimeter of Alternative C. For comparison in the MAA, it was assumed that the contact water from the LGO will be transferred by a pipeline to the collection channel that drains to the VMF. Alternative C will require approximately 2.8 km of perimeter ditching, two collection sumps and 3.7 km of pipeline to transfer the contact water as shown schematically in Figure 7-6.

Alternative C was designed to avoid overprinting waterbodies and watercourses that could be frequented by fish, and as such there are no anticipated loses of aquatic habitat. Construction of Alternative C will result in the overprinting of vegetation communities including but not limited to pine, black spruce, birch hardwood and aspen. Overprinted vegetation communities are shown in Figure 7-7.

During consultation, wild rice fields and moose habitat were identified as being of interest to Indigenous communities, and baseline studies identified SAR species and associated habitat at the Project. Alternative C is anticipated to approximately overprint the following vegetation and habitat types:

- Wild rice fields: 0 ha
- Moose late wintering habitat: 48.2 ha
- Moose foraging habitat: 0.0 ha
- SAR Habitats:
  - Caribou refuge habitat: 32.7 ha
  - Bat maternity roost habitat: 48.2 ha
  - Bat foraging habitat: 0.0 ha
  - Wolverine habitat: 0.0 ha
  - Avian SAR habitat: 48.2 ha.

To support the MAA and ranking of the LGO alternatives, comparative cost estimates were developed based on the alternative quantities with the purpose of differentiating the alternatives and consider the following and details in Table 7-4:

- Footprint clearing: 48.2 ha
- Perimeter ditching: 2.8 km
- Seepage collection sumps: 2
- Additional road network: 1.5 km
- Pipeline length: 3.7 km.

Based on the assumptions provided in Appendix C, it is anticipated that Alternative C will have a comparative construction cost of about $3.9 million.

During operations, the ore stored in the LGO as material will be moved for processing. Prior to closure, all ore stored in the LGO will be processed and the LGO will be depleted. At closure the footprint of the LGO will be recontoured to restore naturalized drainage patterns. The LGO footprint will be covered with overburden and a vegetative growth layer prior to seeding for vegetation. The estimated comparative cost for Alternative A is about $7 million. The comparative closure cost estimates are provided in Appendix C.

7.3.4 ALTERNATIVE D

Alternative D is situated fully within the Property as illustrated in Figure 7-8, about 1 km northwest of the LP Central pit and south of the preferred MRS. Alternative D was sited to minimize the overall Project footprint by using the undeveloped land potentially available between the process plant, LP Central pit and preferred MRS (Figure 7-9). During operations, low grade ore will be stored in the LGO in lifts with an overall side slope of about 2H:1V. The low grade ore from the LGO will be processed in the process plant during the operations phase and the quantity of material stored in the LGO will vary over the life of mine. It is anticipated that the maximum extents of the LGO will be:

- Total footprint: 49.8 ha
- Maximum height: 60 m
- Maximum elevation: 430 masl.

Ore will be transferred via the haul road to the LGO using roads already in place as shown in Figure 7-8. The haul road will need to be extended south of the AEX Program area to the LGO. An additional road network of about 0.4 km will be required and the haul length from LP Central pit is anticipated to be about 0.8 km, as the low grade ore will be hauled from the LP Central pit, south towards Alternative D.

Contact water will be collected from the LGO via gravity draining perimeter ditches and collection sumps located in low lying areas around Alternative D. Contact water from the LGO, for the purposes of ranking the alternatives, will be transferred by a pipeline to the collection channel that drains to the VMF. Alternative D will require 1.1 km of perimeter ditching, one collection sump and 0.9 km of pipeline as illustrated in Figure 7-8.

Alternative D overprints portions of Unnamed Watercourse 3, Unnamed Watercourse 3C and Unnamed Watercourse 3F, which flow towards Dixie Creek and are shown in Figure 7-9. Fish compensation will be required to offset the losses of the fish habitat. Comparative cost estimates were developed with the purposes of supporting ranking of the alternatives in the MAA. It is anticipated that Alternative D will have an approximate fish compensation cost of about $1.6 million.

Construction of Alternative D will result in overprinting of vegetation communities including jack pine, black spruce and intermediate conifer swamp. Overprinted vegetation communities are shown in Figure 7-9.

During consultation, wild rice fields and moose habitat were identified as being of interest to Indigenous communities, and baseline studies identified SAR species and associated habitat at the Project. Alternative D is anticipated to approximately overprint the following vegetation and habitat types related to these aspects:

- Wild rice fields: 0 ha
- Moose late wintering habitat: 49.8 ha
- Moose foraging habitat: 0.0 ha
- SAR Habitats:
  - Caribou refuge habitat: 47.0 ha
  - Bat maternity roost habitat: 49.8 ha
  - Bat foraging habitat: 15.1 ha
  - Wolverine habitat: 15.0 ha

- Avian SAR habitat: 49.8 ha.

To support the MAA and ranking of the LGO alternatives, comparative cost estimates were developed based on the alternative quantities with the purpose of differentiating the alternatives and consider the following and details in Table 7-4:

- Footprint clearing: 49.8 ha
- Perimeter ditching: 1.1 km
- Seepage collection sumps: 1
- Additional road network: 0.4 km
- Pipeline length: 0.9 km.

Based on the assumptions provided in Appendix C, it is anticipated that Alternative D will have a comparative construction cost of about $3.5 million.

During operations, the ore stored in the LGO as material will be moved to the process plant for processing. Prior to closure, all ore stored in the LGO will be processed and the LGO will be depleted. At closure the footprint of the LGO will be recontoured to restore naturalized drainage patterns. The LGO footprint will be covered with overburden and a vegetative growth layer prior to seeding for vegetation. The estimated comparative cost for Alternative D is about $8 million. The comparative closure cost estimates are provided in Appendix C.

7.4 STEP 4: IMPACT EVALUATION AND ASSESSMENT PROCESS

7.4.1 ACCOUNTS, SUB-ACCOUNTS AND INDICATORS

Sub-accounts and indicators were chosen based on Project team experience with mine waste storage and assessments of alternatives for other mining projects using the methodology described in Section 4 and in accordance with the ECCC Guidelines (ECCC 2016). The Project team included both Great Bear Resources staff and their consultants. During the preparation of the report, consultation with Indigenous communities was undertaken and feedback / input was gathered that informed the report. This included the alternatives, accounts, sub-accounts, indicators, measurement parameters and weightings. A complete list of sub-accounts and indicators used to develop the multiple accounts ledger, including the rationale for their selection, is provided in Table 7-3 and the characterization of the LGO Alternatives are summarized in Table 7-4.

7.4.2 VALUATING CRITERIA

Criteria used to calculate values for each of the indicators in the multiple accounts ledger are provided in Table 7-5.

7.5 STEP 5: VALUE-BASED DECISION PROCESS

A multiple accounts ledger was developed for the four LGO alternatives considered through the MAA. Using the alternatives characterization (Table 7-4) and valuation criteria summarized in Table 7-5, values have been determined for all indicators, which are presented in Table 7-6.

In accordance with the ECCC Guidelines (ECCC 2016), weights have been applied to each account, sub-account and indicator, to reflect the relative importance of the criteria and described in Section 4.5.3.

7.5.1 QUANTITATIVE ANALYSIS – BASE CASE

Using the values and weights provided in Table 7-6, the MAA was conducted for the base case scenario. The analysis of Environmental, Technical, Project Economics and Socio-economic indicators, and calculation of sub-account merit ratings is provided in Table 7-7 through Table 7-10. The analysis of Environmental, Technical, Project Economics, and Socio-economic sub-accounts, and calculation of account merit ratings, is provided in Table 7-11 through Table 7-14.

Overall results of the MAA base case scenario for the LGO, and calculation of alternative merit ratings, are provided in Table 7-15. The results are summarized as follows:

- Alternative D is the overall preferred alternative with a merit rating of 4.1 out of 6.0
- Alternative B was the second overall preferred alternative with a merit ranking of 4.0 out of 6.0
- Alternative A and Alternative C were tied for the least preferred alternative with a merit ranking of 3.4 out of 6.0.

7.6 STEP 6: SENSITIVITY ANALYSIS

A sensitivity analysis was carried out to evaluate the robustness of the analytical process and to determine the degree to which various options are influenced by the choice of weightings.

Four sensitivity analysis scenarios were given consideration, in addition to the base case (weighting shown in brackets):

- Base Case
- Case 1: All accounts weighted equally:
  - Environmental (6)
  - Technical (6)
  - Project Economics (6)
  - Socio-economic (6)
- Case 2: All accounts, sub-accounts and indicators weighted equally:
  - Accounts (6)
  - Sub-accounts (6)
  - Indicators (6)
- Case 3: Prioritize people and environment:
  - Environmental (6)
  - Technical (2)
  - Project Economics (1)
  - Socio-economic (6)
- Case 4: Prioritize water (weight of all criteria related to water received a maximum weight):
  - Terrestrial and water resources (6)
  - Fisheries resources (6)
- Case 5: Project economics has no weight:
  - Environmental (6)

- Technical (3)
- Project Economics (0)
- Socio-economic (3).

The sensitivity analysis found that the MAA is robust with Alternative D being identified as the preferred alternative for the majority of the scenarios. The results of the sensitivity analyses as described above are presented in Table 7-16 and Figure 7-10.

Table 7-1: Low Grade Ore Stockpile Alternatives Pre-Screening

Alternative	Do the alternatives avoid overprinting the preferred TMF and potential expansion area? (yes / no)	Do the alternatives avoid overprinting the preferred MRS? (yes / no)	Are the alternatives sited within a 5 km radius of the process plant? (yes / no)	Do the alternatives avoid overprinting existing commercial aggregate operations? (yes / no)
Alternative A	Yes	Yes	Yes	Yes
Alternative B	Yes	Yes	Yes	Yes
Alternative C	Yes	Yes	Yes	Yes
Alternative D	Yes	Yes	Yes	Yes

Table 7-2: Summary Table of Candidate Low Grade Ore Stockpile Alternatives

Low Grade Ore Stockpile Alternative	Low Grade Ore Stockpile Construction Approach	Low Grade Ore Stockpile Operation Approach	Low Grade Ore Stockpile Closure Approach
Alternative A	Preparation and construction for Alternative A will include: – Haul roads for low grade ore transfer to Alternative A – Clearing of the footprint for low grade ore storage – Perimeter ditching and collection sumps for contact water management.	The LGO will be used to store low grade ore with transfer to the crusher for processing during operations. Runoff will be collected in sumps and managed with the site's contact water management plan and in accordance with applicable environmental approvals and permits.	At closure, all low grade ore will be processed and the LGO will be depleted. The footprint of the former LGO will be regarded to restore naturalized drainage and the footprint of the LGO will be covered with overburden and seeded.
Alternative B	Preparation and construction for Alternative B will include: – Haul roads for low grade ore transfer to Alternative B – Clearing of the footprint for low grade ore storage – Perimeter ditching and collection sumps for contact water management.	The LGO will be used to store low grade ore with transfer to the crusher for processing during operations. Runoff will be collected in sumps and managed with the site's contact water management plan and in accordance with applicable environmental approvals and permits.	At closure, all low grade ore will be processed and the LGO will be depleted. The footprint of the former LGO will be regarded to restore naturalized drainage and the footprint of the LGO will be covered with overburden and seeded.
Alternative C	Preparation and construction for Alternative C will include: – Haul roads for low grade ore transfer to Alternative C – Clearing of the footprint for low grade ore storage – Perimeter ditching and collection sumps for contact water management.	The LGO will be used to store low grade ore with transfer to the crusher for processing during operations. Runoff will be collected in sumps and managed with the site's contact water management plan and in accordance with applicable environmental approvals and permits.	At closure, all low grade ore will be processed and the LGO will be depleted. The footprint of the former LGO will be regarded to restore naturalized drainage and the footprint of the LGO will be covered with overburden and seeded.
Alternative D	Preparation and construction for Alternative D will include: – Haul roads for low grade ore transfer to Alternative D – Clearing of the footprint for low grade ore storage – Perimeter ditching and collection sumps for contact water management.	The LGO will be used to store low grade ore with transfer to the crusher for processing during operations. Runoff will be collected in sumps and managed with the site's contact water management plan and in accordance with applicable environmental approvals and permits.	At closure, all low grade ore will be processed and the LGO will be depleted. The footprint of the former LGO will be regarded to restore naturalized drainage and the footprint of the LGO will be covered with overburden and seeded.

Table 7-3: Low Grade Ore Stockpile Accounts, Sub-Accounts and Indicators

Account	Subaccount	Subaccount Rationale	Indicator	Indicator Rationale
Environmental	Fisheries Resources	During the alternatives assessment, the LGO was sited to avoid large lakes and large rivers where possible. However, several of the alternatives that were evaluated would overprint waters frequented by fish. Overprinting of waters frequented by fish will result in a change to fish habitat that would require fish habitat offset in accordance with the *Fisheries Act* and the MDMER.	Loss of Fish Habitat (Waterbodies)	There are numerous waterbodies surrounding the Great Bear Project that are known to be frequented by fish. The LGO alternative locations have generally avoided large waterbodies, however, some of the alternatives would overprint smaller waterbodies (ponds / small lakes). The alternatives that overprint waterbodies would require that new fish habitat be constructed under the *Fisheries Act* to avoid adverse impacts to fish and fish habitat. Alternatives that avoid or minimize overprinting waterbodies are preferred.
			Loss of Fish Habitat (Watercourses)	There are watercourses (intermittent, and/or permanently flowing) around the Great Bear Project. Baseline studies are currently in progress and it was assumed that these creeks are fish bearing or are potentially frequented by fish and overprinting these watercourses would affect fish and fish habitat, which would require new offsetting habitat to be constructed under the *Fisheries Act*. Alternatives that avoid or minimize overprinting watercourses are preferred.
			Number of Watercourse Crossings	Haul roads that cross watercourses have the potential to affect fish habitat by altering the watercourse embankments, channel and substrate characteristics. Vehicle traffic over crossings can further affect the quality of fish habitat. LGO alternatives that do not require water crossings are preferred.
	Atmospheric Emissions	Air and noise emissions resulting from construction and operation of the LGO could affect the ambient air, noise and light environments.	Noise Emissions	Construction and operation of the LGO will result in noise emissions that can increase ambient sound levels that could affect wildlife. LGO alternatives located in proximity to the open pits will generally limit noise to areas also affected by acoustic emissions from the open pit and are preferred.
			GHG Emissions	Emissions from the Project may add to global GHG emissions and ultimately contribute to climate change. LGO alternatives with reduced hauling requirements were assumed to emit less GHGs and are therefore preferred. GHG emissions were assumed to be proportional to the distance that the mine rock will be hauled, therefore GHG emissions will be evaluated based on haul distance, with shorter haul distances being preferred.
	Terrestrial and Water Resources	Habitat will be lost from LGO overprinting of the land, although some habitat can be restored at closure. The Great Bear Project terrestrial ecosystems vary within the general area. Alternatives with a more compact LGO footprint would have less of an impact on the terrestrial ecosystem and were preferred.	LGO Footprint	The LGO will overprint the terrestrial ecosystems. The total footprint of the LGO is a good metric for estimating impacts to terrestrial ecosystems. In general, a smaller LGO footprint would have fewer effects on the terrestrial environment and is considered preferred.
			Compact Project Design	Great Bear Resources prefers to minimize the overall Project footprint, by reducing potentially disturbed lands for the use of low grade ore storage. Alternatives were quantitatively compared, and alternatives that use space in close proximity to the Project are preferred.
			Number of Subcatchment Areas Affected	Great Bear Resources prefers to keep the majority of the LGO footprint within the minimum number of subcatchment areas to limit the potential extent of environmental effects, to the extent practicable. Alternatives that are located in a single subcatchment area are preferred to alternatives that overprint multiple subcatchment areas. Overprinting of multiple subcatchment areas could result in effects to the surface water and groundwater quantities. Subcatchments will be evaluated to major tributaries such as, Dixie Creek (North / South), Troutlake River, Chukuni River, etc.
			Haul/Access Road Corridor Footprint	LGO alternatives that are located further from the open pit increase the segregation of habitat areas and corridors used by wildlife. Road networks increase the likelihood of vehicle collisions with wildlife through and create physical barriers for wildlife. LGO Alternatives that are located closer to the process plant with smaller roads lengths are preferred and assumed to reduce these effects.
	Species at Risk	Some species are sensitive or at risk of disappearing in Ontario or in Canada and have been afforded special protections. During baseline studies, SAR were identified in the Project Area. Alternatives that have greater potential to harm these species (wolverine and bat SAR) should be avoided.	Direct Loss of Wolverine Habitat	During baseline studies, wolverine or evidence of wolverine were observed on the Property, with wolverine sightings captured on trail cameras. Wolverine that disperse across the landscape could be negatively affected by the proposed Project. Therefore, the loss wolverine habitat should be minimized. Alternatives that avoid the avoid potential wolverine habitat are preferred.
			Direct Loss of Caribou Habitat	The Project area is located in the Sydney Range for caribou which is federally and provincially regulated habitat for caribou. Provincial habitat mapping for Sydney Range has the property classified as Category 3 habitat. Category 3 areas are defined as having a high tolerance to alteration before the function is compromised. These areas indirectly support boreal caribou by maintaining (buffering) the overall predator refuge function within their range. They are comprised of currently young vegetation communities such as regenerating burn areas that are less than 40 years old. These areas are not generally occupied for long periods of time; however, boreal caribou may travel through them. Consistent with this Category 3 classification, baseline studies did not observe evidence of caribou on the Property. The loss of potential caribou habitat should be minimized with smaller TMF footprints, or footprints that avoid potential caribou habitat being preferred.
			Direct Loss of Avian SAR Habitat	During baseline studies a number of avian SAR were observed at the Property. Breeding habitat for avian SAR species should be avoided. The ecosites with confirmation of avian SAR habitat included marsh wetlands and shorelines, alternatives avoiding these areas are preferred.
			Direct Loss of Bat Foraging Habitat	The wetland, riparian and forest habitat in the Project area provides forage and maternity roosting habitat for SAR bats. The overprinting of these ecosites by the LGO will reduce / remove suitable habitat. The loss of SAR bat habitat should be minimized with alternatives that avoid bat habitat being preferred.
			Direct Loss of Maternity Roosting Habitat	

Table 7-3: Low Grade Ore Stockpile Accounts, Sub-Accounts and Indicators

Account	Subaccount	Subaccount Rationale	Indicator	Indicator Rationale
Technical	Design and Construction Factors	Engineering design factors for the LGO include some of the key contributions to the technical complexity of LGO alternatives. Alternatives that are less technically challenging, are likely to be characterized as lower risk are generally preferred.	Haul Distance	Long haul distance between the open pits / portal and LGO will result in increased Project footprint, the potential for increased dust / particulate emissions, long haul roads, and increased operational complexity. Locations closer to the open pits are preferred.
			Length of Perimeter Ditching	LGO alternatives that require less perimeter ditching will be preferred as they will require less construction effort and on-going maintenance. Alternatives with shorter ditch lengths are preferred.
	Operational Considerations	Great Bear Resources knows that safety is a primary concern when designing the LGO and as such, each alternative considered can be constructed to the minimum factor of safety. However, some technical factors have the potential to increase the risk or have a potential higher consequence of failure and should therefore be avoided. Water management also presents a potential operational complexity for the LGO. Alternatives requiring reduced water management infrastructure (i.e., collection basins, pipelines, pumps, etc.) being preferred.	Complexity of Facility Water Management	LGO alternatives with simpler water management is preferred. An increased number of collection basins (runoff and seepage) can increase the cost and complexity of water management of an alternative. LGOs that minimize the number of catch basins are preferred.
			Stockpile Height	It was generally assumed that there is proportional increase in potential consequence of LGO failure with an increase in stockpile height. It was assumed that taller facilities have greater potential energy to move materials. Lower stockpile heights are therefore considered to incur less risk and are the preferred.
Economics	Capital Costs	Capital costs required for the LGO are considered as part of the Project economics. Costs may include, site access and costing associated with aquatic habitat offset / compensation.	Habitat Offset / Compensation Costs	Capital costs for the construction of aquatic habitat offset / compensation features can be substantial. These features are normally required to be constructed early in the project life, generally as the construction impacts are implemented.
			Haul / Access Road Construction Costs	During the construction phase, haul roads will be constructed from the open pit area to the LGO to allow for hauling mine rock during operations. Alternatives that are located closer to the open pits result in lower construction costs and are preferred.
	Operating Cost	Operational costs associated with operating the LGO will affect Project economics and may include transportation of mine rock and water management.	Transportation of Mine Rock to the LGO	The cost of transporting mine rock to the LGO is directly proportional to the distance from the LGO to the open pits. Alternatives in close proximity to the open pit are preferred.
			Water Management	Water collection system alternatives with reduced requirements for active water management (e.g. reduced pumping requirements) will have lower operating costs and are preferred.
	Closure Cost	Following cessation of operations, the LGO will be decommissioned and rehabilitation to a stable and more ecologically productive state, in accordance with the regulatory requirements. Higher closure costs associated with the LGO will increase the requirement for closure bonding and will ultimately affect overall Project economics.	LGO Cover and Reclamation Costs	At closure, the LGO will require management for the potential generation of ML/ARD which varies for the alternatives. Alternatives with lower reclamation costs are preferred.
			Inspection / Maintenance / Operations / Monitoring Costs	Post closure costs will be approximately proportional to the footprint of the LGO. Smaller LGO footprints will likely result in lower cost and are preferred.
			Road Reclamation Costs	Haul and access road infrastructure will need to be closed and reclaimed at closure. Alternatives with lower associated reclamation costs being preferred.
Socio-economic	Indigenous Land Use	Great Bear Resources recognizes that Indigenous engagement is an integral part of the process through the permitting / approval and design phases which are influenced by Indigenous values and Indigenous knowledge. Great Bear Resources continues to engage with Indigenous communities to better understand these values in order to design the Great Bear Project such that avoids or minimizes related effects to Indigenous Peoples.	Wild Rice Fields	During consultation for the Project, wild rice fields were identified as being of interest to Indigenous communities. However, wild rice fields observed in the Project area have not been confirmed to be used by Indigenous Peoples. Alternatives that avoid wild rice fields are generally preferred.
			Moose Late Wintering Habitat	During consultation for the Project, moose were identified as being of special importance to Indigenous communities. In the Project are, Moose use the habitat for both late wintering and foraging. Both habitat types were considered, with alternatives that avoid moose habitat being preferred.
			Moose Foraging Habitat	
			Loss of Indigenous Land Uses	The lands around the Project may be used by Indigenous communities to support trapping, hunting and harvesting of traditional foods. LGO alternatives with larger terrestrial footprints will remove a greater footprint of land that may have been used for hunting and harvesting of traditional foods. Alternatives that affect less potential undisturbed areas that may support Indigenous land uses including fishing, hunting areas (moose) and potential plant (berry) harvesting areas are preferred.
	Operational Impact (Aesthetics)	As a result of construction and operation of the LGO, there could be effects to local populations, including noise emissions, and aesthetics that could affect their enjoyment of the area.	Aesthetics	The maximum elevation of the LGO was assessed as being proportional to the visibility of the alternatives. Alternatives with a lower maximum elevation are preferred from an aesthetics perspective as they will be more likely to blend in with local terrain.
			Compact Design	LGO locations that are sited to minimize the Project footprint, reducing potentially disturbed areas during operations and closure being preferred.

Table 7-4: Low Grade Ore Stockpile Alternative Characterization

Account	Indicator	Parameter	Unit	Alternative A	Alternative B	Alternative C	Alternative D
Environmental	Loss of Fish Habitat (Waterbodies)	Area of waterbodies overprinted	ha	0.0	0.2	0.0	0.0
	Loss of Fish Habitat (Watercourses)	Length of stream loss of potential fish habitat	km	0.0	1.1	0.0	1.4
	Number of Watercourse Crossings	Number of watercourse crossings	#	0	0	1	0
	Noise Emissions	Max haul distance open pit to LGO	km	2.9	1.9	3.2	1.5
	GHG Emissions	Haul distance	km	4.9	2.1	4.3	0.8
	LGO Footprint	LGO footprint	ha	45.8	39.1	48.2	49.8
	Compact Design	Location proximal to Project infrastructure	ha	1,332	1,324	1,342	1,271
	Number of Subcatchment Areas Affected	Number of Subcatchments	#	1	3	2	1
	Haul / Access Road Corridor Footprint	Road footprint	ha	2.1	0.5	3.0	0.8
	Direct Loss of Wolverine Habitat	Loss of wolverine habitat	ha	0.9	0.0	0.0	15.0
	Direct Loss of Caribou Habitat	Loss of caribou habitat	ha	18.4	0.0	32.7	47.0
	Direct Loss of Avian SAR Habitat	Loss of avian SAR breeding habitat	ha	45.8	39.1	48.2	49.8
	Direct Loss of Bat Foraging Habitat	Loss of bat foraging habitat	ha	8.1	1.3	0.0	15.1
	Direct Loss of Maternity Roosting Habitat	Loss of bat maternity roosting habitat	ha	38.7	38.1	48.2	49.8
Technical	Haul Distance	Haul distance	km	4.9	2.1	4.3	0.8
	Length of Perimeter Ditching	Ditch length	km	2.6	2.4	2.8	1.1
	Complexity of Facility Water Management	Number of collection basins	#	2	8	2	1
	Stockpile Height	Height of the LGO	m	28	50	59	60
Economics	Habitat Offset / Compensation Costs	Cost (millions)	$	$0.0	$1.3	$0.0	$1.6
	Haul / Access Road Construction Costs	Cost (millions)	$	$0.7	$0.5	$0.8	$0.7
	Transportation of Mine Rock to the LGO	Haul distance	km	4.9	2.1	4.3	0.8
	Water Management	Cost (millions)	$	$2.5	$5.7	$2.8	$1.0
	LGO Cover and Reclamation Costs	Cost (millions)	$	$7.0	$6.0	$7.4	$7.6
	Inspection / Maintenance / Operations / Monitoring Costs	LGO footprint	ha	45.8	39.1	48.2	49.8
	Road Reclamation Costs	Cost (millions)	$	$0.0209	$0.0047	$0.0300	$0.0084
Socio-economic	Wild Rice	Loss of wild rice fields	ha	0.0	0.0	0.0	0.0
	Moose Late Wintering Habitat	Loss of moose late wintering habitat	ha	45.8	39.0	48.2	49.8
	Moose Foraging Habitat	Loss of moose foraging habitat	ha	7.2	0.0	0.0	0.0
	Loss of Indigenous Land Uses	LGO footprint	ha	45.8	39.1	48.2	49.8
	Aesthetics	Maximum elevation of LGO	masl	400	460	415	430
	Compact Design	Reduces overall disturbed footprint	ha	1,332	1,324	1,342	1,271

Table 7-5: Low Grade Ore Stockpile Valuating Criteria

Account	Indicator	Parameter	Indicator Value					
			6 (Best)	5	4	3	2	1 (Worst)
Environmental	Loss of Fish Habitat (Waterbodies)	Area of waterbodies overprinted	<0.10 ha	0.10 to 0.19 ha	0.20 to 0.29 ha	0.30 to 0.39 ha	0.40 to 0.49 ha	≥0.50 ha
	Loss of Fish Habitat (Watercourses)	Length of stream loss of potential fish habitat	0 km	0.1 to 0.2 km	0.3 to 0.4 km	0.5 to 0.7 km	0.8 to 0.9 km	≥1.0 km
	Number of Watercourse Crossings	Number of watercourse crossings	0	1	2	3	4	5
	Noise Emissions	Max haul distance open pit to LGO	<1.5 km	1.5 to 1.8 km	1.9 to 2.2 km	2.3 to 2.5 km	2.6 to 2.9 km	≥3.0 km
	GHG Emissions	Haul distance	<1.0 km	1.0 to 1.8 km	1.9 to 2.7 km	2.8 to 3.5 km	3.6 to 4.4 km	≥4.5 km
	LGO Footprint	LGO footprint	<40.0 ha	40.0 to 42.4 ha	42.5 to 44.9 ha	45.0 to 47.4 ha	47.5 to 49.9 ha	≥50.0 ha
	Compact Design	Project footprint	<1,275 ha	1,275 to 1,290 ha	1,291 to 1,307 ha	1,308 to 1,323 ha	1,324 to 1,339 ha	≥1,340 ha
	Number of Subcatchment Areas Affected	Number of subcatchments	1	2	3	4	5	6
	Haul / Access Road Corridor Footprint	Road footprint	<0.5 ha	0.5 to 1.0 ha	1.1 to 1.7 ha	1.8 to 2.3 ha	2.4 to 2.9 ha	≥3.0 ha
	Direct Loss of Wolverine Habitat	Loss of wolverine habitat	<0.5 ha	0.5 to 4.0 ha	4.1 to 7.7 ha	7.8 to 11.3 ha	11.4 to 14.9 ha	≥15.0 ha
	Direct Loss of Caribou Habitat	Loss of caribou habitat	<10.0 ha	10.0 to 18.7 ha	18.8 to 27.4 ha	27.5 to 36.2 ha	36.3 to 44.9 ha	≥45.0 ha
	Direct Loss of Avian SAR Habitat	Loss of avian SAR breeding habitat	<40.0 ha	40.0 to 42.4 ha	42.5 to 44.9 ha	45.0 to 47.4 ha	47.5 to 49.9 ha	≥50.0 ha
	Direct Loss of Bat Foraging Habitat	Loss of bat foraging habitat	<1.0 ha	1.0 to 3.2 ha	3.3 to 5.4 ha	5.5 to 7.7 ha	7.8 to 9.9 ha	≥10.0 ha
	Direct Loss of Maternity Roosting Habitat	Loss of bat maternity roosting habitat	<40.0 ha	40.0 to 42.4 ha	42.5 to 44.9 ha	45.0 to 47.4 ha	47.5 to 49.9 ha	≥50.0 ha
Technical	Haul Distance	Haul distance	<1.0 km	1.0 to 1.8 km	1.9 to 2.7 km	2.8 to 3.5 km	3.6 to 4.4 km	≥4.5 km
	Length of Perimeter Ditching	Ditch length	<1.0 km	1.0 to 1.4 km	1.5 to 1.9 km	2.0 to 2.4 km	2.5 to 2.9 km	≥3.0 km
	Complexity of Facility Water Management	Number of collection basins	1	2	3	4	5	≥6
	Stockpile Height	Height of the LGO	<30 m	30 to 37 m	38 to 44 m	45 to 52 m	53 to 59 m	≥60 m
Economics	Habitat Offset / Compensation Costs	Cost (millions)	<$0.2	$0.2 to $0.3	$0.4 to $0.5	$0.6 to $0.7	$0.8 to $0.9	≥$1.0
	Haul / Access Road Construction Costs	Cost (millions)	<$0.2	$0.2 to $0.3	$0.4 to $0.5	$0.6 to $0.7	$0.8 to $0.9	≥$1.0
	Transportation of Mine Rock to the LGO	Haul distance	<1.0 km	1.0 to 1.8 km	1.9 to 2.7 km	2.8 to 3.5 km	3.6 to 4.4 km	≥4.5 km
	Water Management	Cost (millions)	<$1.5	$1.5 to $2.3	$2.4 to $3.2	$3.3 to $4.0	$4.1 to $4.9	≥$5.0
	LGO Cover and Reclamation Costs	Cost (millions)	<$1.0	$1.0 to $2.5	$2.6 to $4.2	$4.3 to $5.8	$5.9 to $7.4	≥$7.5
	Inspection / Maintenance / Operations / Monitoring Costs	LGO footprint	<40.0 ha	40.0 to 42.4 ha	42.5 to 44.9 ha	45.0 to 47.4 ha	47.5 to 49.9 ha	≥50.0 ha
	Road Reclamation Costs	Cost	<$0.0100	$0.0100 to $0.0137	$0.0138 to $0.0174	$0.0175 to $0.0212	$0.0213 to $0.0249	≥$0.0250
Socio-economic	Wild Rice	Loss of wild rice fields	<0.4 ha	0.4 to 0.7 ha	0.8 to 1.1 ha	1.2 to 1.5 ha	1.6 to 1.9 ha	≥2.0 ha
	Moose Late Wintering Habitat	Loss of moose late wintering habitat	<40.0 ha	40.0 to 42.4 ha	42.5 to 44.9 ha	45.0 to 47.4 ha	47.5 to 49.9 ha	≥50.0 ha
	Moose Foraging Habitat	Loss of moose foraging habitat	<1.0 ha	1.0 to 1.9 ha	2.0 to 2.9 ha	3.0 to 3.9 ha	4.0 to 4.9 ha	≥5.0 ha
	Loss of Indigenous Land Uses	LGO footprint	<40.0 ha	40.0 to 42.4 ha	42.5 to 44.9 ha	45.0 to 47.4 ha	47.5 to 49.9 ha	≥50.0 ha
	Aesthetics	Maximum elevation of LGO	<400 masl	400 to 414 masl	415 to 429 masl	430 to 444 masl	445 to 459 masl	≥460 masl
	Compact Design	Project footprint	<1,275 ha	1,275 to 1,290 ha	1,291 to 1,307 ha	1,308 to 1,323 ha	1,324 to 1,339 ha	≥1,340 ha

Table 7-6: Low Grade Ore Stockpile Weights and Scores for Multiple Accounts Analysis

Account	Weight	Subaccount	Weight	Indicator	Weight	Alternative A	Alternative B	Alternative C	Alternative D
		Fisheries Resources	6	Loss of Fish Habitat (Waterbodies)	6	6	4	6	6
				Loss of Fish Habitat (Watercourses)	6	6	1	6	1
				Number of Watercourse Crossings	2	6	6	5	6
		Atmospheric Emissions	3	Noise Emissions	2	2	4	1	5
				GHG Emissions	3	1	4	2	6
		Terrestrial and Water Resources	3	LGO Footprint	5	3	6	2	2
				Compact Design	5	2	2	1	6
				Number of Subcatchment Areas Affected	6	3	4	6	6
				Haul / Access Road Corridor Footprint	5	3	5	1	5
		Species at Risk	3	Direct Loss of Wolverine Habitat	4	5	6	6	1
				Direct Loss of Caribou Habitat	3	5	6	3	1
				Direct Loss of Avian SAR Habitat	2	3	6	2	2
				Direct Loss of Bat Foraging Habitat	2	2	5	6	1
				Direct Loss of Maternity Roosting Habitat	2	6	6	2	2
Technical	3	Design and Construction Factors	6	Haul Distance	6	1	4	2	6
				Length of Perimeter Ditching	4	2	3	2	5
		Technical Considerations	3	Complexity of Facility Water Management	3	5	1	5	6
			4	Stockpile Height	3	6	3	2	1
Economics	1.5	Capital Costs	3	Habitat Offset / Compensation Costs	4	6	1	6	1
				Haul / Access Road Construction Costs	2	3	4	2	3
		Operating Cost	6	Transportation of Mine Rock to the LGO	6	1	4	2	6
				Water Management	4	4	1	4	6
		Closure Cost	5	LGO Cover and Reclamation Costs	5	2	2	2	1
				Inspection / Maintenance / Operations / Monitoring Costs	3	3	6	2	2
				Road Reclamation Costs	2	3	6	1	6
Socio-economic	3	Indigenous Land Use	4	Loss of wild rice fields	2	6	6	6	6
				Loss of moose late wintering habitat	3	3	6	2	2
				Loss of moose foraging habitat	3	1	6	6	6
				Loss of Indigenous Land Uses	4	3	6	2	2
		Operational Impact (Aesthetics)	1	Aesthetics	1	5	1	4	3
				Compact Design	3	2	2	1	6

Table 7-7: Low Grade Ore Stockpile Environment Indicators

Sub-Account	Indicator	Weight	Alternative A		Alternative B		Alternative C		Alternative D	
			Value	Score	Value	Score	Value	Score	Value	Score
Fisheries Resources	Loss of Fish Habitat (Waterbodies)	6	6	36	4	24	6	36	6	36
	Loss of Fish Habitat (Watercourses)	6	6	36	1	6	6	36	1	6
	Number of Watercourse Crossings	2	6	12	6	12	5	10	6	12
	Sub Account Merit Score (S{S x W})		84		42		82		54	
	Sub Account Merit Rating (Rs = S{S x W}/SW)		*6.0*		*3.0*		*5.9*		*3.9*	
Atmospheric Emissions	Noise Emissions	2	2	4	4	8	1	2	5	10
	GHG Emissions	3	1	3	4	12	2	6	6	18
	Sub Account Merit Score (S{S x W})		7		20		8		28	
	Sub Account Merit Rating (Rs = S{S x W}/SW)		*1.4*		*4.0*		*1.6*		*5.6*	
Terrestrial and Water Resources	LGO Footprint	5	3	15	6	30	2	10	2	10
	Compact Design	5	2	10	2	10	1	5	6	30
	Number of Subcatchment Areas Affected	6	3	18	4	24	6	36	6	36
	Haul / Access Road Corridor Footprint	5	3	15	5	25	1	5	5	25
	Sub Account Merit Score (S{S x W})		58		89		56		101	
	Sub Account Merit Rating (Rs = S{S x W}/SW)		*2.8*		*4.2*		*2.7*		*4.8*	
Species at Risk	Direct Loss of Wolverine Habitat	4	5	20	6	24	6	24	1	4
	Direct Loss of Caribou Habitat	3	5	15	6	18	3	9	1	3
	Direct Loss of Avian SAR Habitat	2	3	6	6	12	2	4	2	4
	Direct Loss of Bat Foraging Habitat	2	2	4	5	10	6	12	1	2
	Direct Loss of Maternity Roosting Habitat	2	6	12	6	12	2	4	2	4
	Sub Account Merit Score (S{S x W})		57		76		53		17	
	Sub Account Merit Rating (Rs = S{S x W}/SW)		*4.4*		*5.8*		*4.1*		*1.3*	

Table 7-8: Low Grade Ore Stockpile Technical Indicators

Sub-Account	Indicator	Weight	Alternative A		Alternative B		Alternative C		Alternative D	
			Value	Score	Value	Score	Value	Score	Value	Score
Design and Construction Factors	Haul Distance	6	1	6	4	24	2	12	6	36
	Length of Perimeter Ditching	4	2	8	3	12	2	8	5	20
	Sub Account Merit Score (S{S x W})		14		36		20		56	
	Sub Account Merit Rating (Rs = S{S x W}/SW)		*1.4*		*3.6*		*2.0*		*5.6*	
Technical Considerations	Complexity of Facility Water Management	3	5	15	1	3	5	15	6	18
	Stockpile Height	3	6	e	3	9	2	6	1	3
	Sub Account Merit Score (S{S x W})		33		12		21		21	
	Sub Account Merit Rating (Rs = S{S x W}/SW)		*5.5*		*2.0*		*3.5*		*3.5*	

Table 7-9: Low Grade Ore Stockpile Project Economic Indicators

Sub-Account	Indicator	Weight	Alternative A		Alternative B		Alternative C		Alternative D	
			Value	Score	Value	Score	Value	Score	Value	Score
Capital Costs	Habitat Offset / Compensation Costs	4	6	24	1	4	6	24	1	4
	Haul/Access Road Construction Costs	2	3	6	4	8	2	4	3	6
	Sub Account Merit Score (S{S x W})		30		12		28		10	
	Sub Account Merit Rating (Rs = S{S x W}/SW)		*5.0*		*2.0*		*4.7*		*1.7*	
Operating Cost	Transportation of Mine Rock to the LGO	6	1	6	4	24	2	12	6	36
	Water Management	4	4	16	1	4	4	16	6	24
	Sub Account Merit Score (S{S x W})		22		28		28		60	
	Sub Account Merit Rating (Rs = S{S x W}/SW)		*2.2*		*2.8*		*2.8*		*6.0*	
Closure Cost	LGO Cover and Reclamation Costs	5	2	10	2	10	2	10	1	5
	Inspection / Maintenance / Operations / Monitoring Costs	3	3	9	6	18	2	6	2	6
	Road Reclamation Costs	2	3	6	6	12	1	2	6	12
	Sub Account Merit Score (S{S x W})		25		40		18		23	
	Sub Account Merit Rating (Rs = S{S x W}/SW)		*2.5*		*4.0*		*1.8*		*2.3*	

Table 7-10: Low Grade Ore Stockpile Socio-economic Indicators

Sub-Account	Indicator	Weight	Alternative A		Alternative B		Alternative C		Alternative D	
			Value	Score	Value	Score	Value	Score	Value	Score
Indigenous Land Use	Wild Rice	2	6	12	6	12	6	12	6	12
	Moose Late Wintering Habitat	3	3	9	6	18	2	6	2	6
	Moose Foraging Habitat	3	1	3	6	18	6	18	6	18
	Loss of Indigenous Land Uses	4	3	12	6	24	2	8	2	8
	Sub Account Merit Score (S{S x W})		36		72		44		44	
	Sub Account Merit Rating (Rs = S{S x W}/SW)		*3.0*		*6.0*		*3.7*		*3.7*	
Operational Impact (Aesthetics)	Aesthetics	1	5	5	1	1	4	4	3	3
	Compact Design	3	2	6	2	6	1	3	6	18
	Sub Account Merit Score (S{S x W})		11		7		7		21	
	Sub Account Merit Rating (Rs = S{S x W}/SW)		*2.8*		*1.8*		*1.8*		*5.3*	

Table 7-11: Low Grade Ore Stockpile Environment Sub-Account Analysis

Sub-Account	Weight	Alternative A		Alternative B		Alternative C		Alternative D	
		Rating	Score	Rating	Score	Rating	Score	Rating	Score
Fisheries Resources	6	6.0	36.0	3.0	18.0	5.9	35.1	3.9	23.1
Atmospheric Emissions	3	1.4	4.2	4.0	12.0	1.6	4.8	5.6	16.8
Terrestrial and Water Resources	3	2.8	8.3	4.2	12.7	2.7	8.0	4.8	14.4
Species at Risk	3	4.4	13.2	5.8	17.5	4.1	12.2	1.3	3.9
Account Merit Score		61.6		60.3		60.2		58.3	
Account Merit Rating		*4.1*		*e0*		*4.0*		*3.9*	

Table 7-12: Low Grade Ore Stockpile Technical Sub-Account Analysis

Sub-Account	Weight	Alternative A		Alternative B		Alternative C		Alternative D	
		Rating	Score	Rating	Score	Rating	Score	Rating	Score
Design and Construction Factors	6	1.4	8.4	3.6	21.6	2.0	12.0	5.6	33.6
Operational Considerations	3	5.5	16.5	2.0	6.0	3.5	10.5	3.5	10.5
Account Merit Score		24.9		27.6		22.5		44.1	
Account Merit Rating		*2.8*		*3.1*		*2.5*		*4.9*	

Table 7-13: Low Grade Ore Stockpile Project Economic Sub-Account Analysis

Sub-Account	Weight	Alternative A		Alternative B		Alternative C		Alternative D	
		Rating	Score	Rating	Score	Rating	Score	Rating	Score
Capital Costs	3	5.0	15.0	2.0	6.0	4.7	14.0	1.7	5.0
Operating Cost	6	2.2	13.2	2.8	16.8	2.8	16.8	6.0	36.0
Closure Cost	5	2.5	12.5	4.0	20.0	1.8	9.0	2.3	11.5
Account Merit Score		40.7		42.8		39.8		52.5	
Account Merit Rating		*2.9*		*3.1*		*2.8*		*3.8*	

Table 7-14: Low Grade Ore Stockpile Socio-economic Sub-Account Analysis

Sub-Account	Weight	Alternative A		Alternative B		Alternative C		Alternative D	
		Rating	Score	Rating	Score	Rating	Score	Rating	Score
Indigenous Land Use	4	3.0	12.0	6.0	24.0	3.7	14.7	3.7	14.7
Operational Impact (Aesthetics)	1	2.8	2.8	1.8	1.8	1.8	1.8	5.3	5.3
Account Merit Score		14.8		25.8		16.4		19.9	
Account Merit Rating		*3.0*		*5.2*		*3.3*		*4.0*	

Table 7-15: Low Grade Ore Stockpile Multiple Accounts Analysis Summary

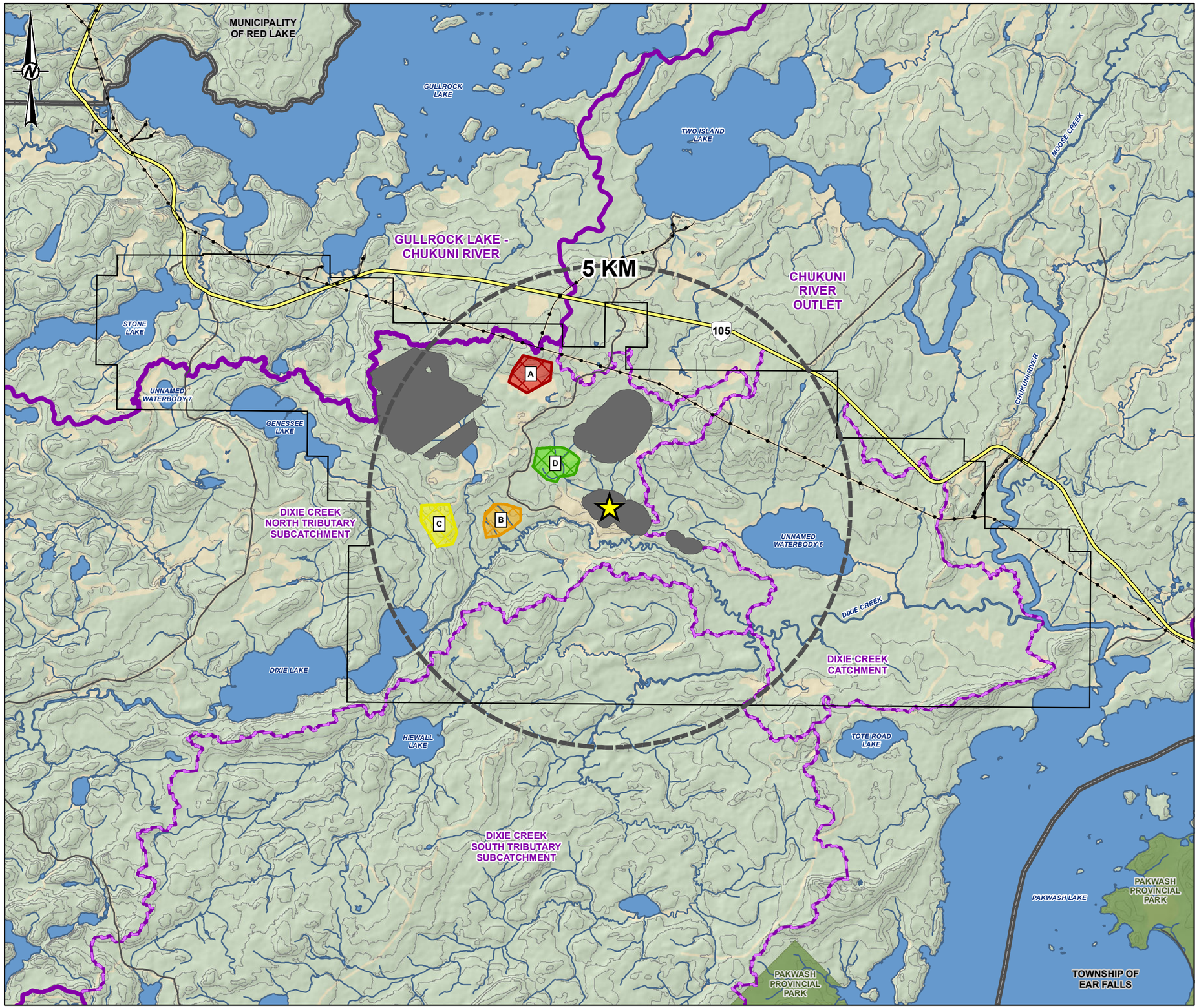
Account	Weight	Alternative A		Alternative B		Alternative C		Alternative D	
		Rating	Score	Rating	Score	Rating	Score	Rating	Score
Environment	6	4.1	24.7	4.0	24.1	4.0	24.1	3.9	23.3
Technical	3	2.8	8.3	3.1	9.2	2.5	7.5	4.9	14.7
Project Economics	1.5	2.9	4.4	3.1	4.6	2.8	4.3	3.8	5.6
Socio-economic	3	3.0	8.9	5.2	15.5	3.3	9.9	4.0	12.0
Alternative Merit Score		46.2		53.3		45.7		55.6	
Alternative Merit Rating		*3.4*		*4.0*		*3.4*		*4.1*	

Table 7-16: Low Grade Ore Stockpile Sensitivity Analysis

	Alternative A	Alternative B	Alternative C	Alternative D
Base Case	3.4	4.0	3.4	**4.1**
Case 1	3.2	3.8	3.2	**4.1**
Case 2	3.4	3.5	3.1	**4.1**
Case 3	3.4	**4.3**	3.4	4.1
Case 4	3.3	4.1	3.3	**4.3**
Case 5	3.5	4.1	3.5	**4.2**

Notes:

***Bold** indicates preferred Alternative*



LEGEND

- APPROXIMATE OPEN PIT CENTROID
- KEY MINE FEATURE (OPEN PIT, TAILINGS MANAGEMENT FACILITY AND MINE ROCK STOCKPILE)
- OPEN PIT CENTROID BUFFER (LABELED ON MAP)
- PROPERTY BOUNDARY
- PROVINCIAL PARK
- EXISTING TRANSMISSION LINE
- HIGHWAY
- LOCAL ROAD
- LOWER TIER MUNICIPAL BOUNDARY
- WATERCOURSE
- WATERBODY
- CONTOURS (10 M INTERVAL)
- QUATERNARY CATCHMENT
- DIXIE CREEK SUBCATCHMENT

LOW GRADE ORE STOCKPILE ALTERNATIVES

- ALTERNATIVE A
- ALTERNATIVE B
- ALTERNATIVE C
- ALTERNATIVE D

0 1 2 4
1:80,000 KILOMETRES

NOTE(S)
1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)
1. CONTAINS INFORMATION LICENSED UNDER THE OPEN GOVERNMENT LICENCE - ONTARIO
2. WATERCOURSES AND WATERBODY ACQUIRED FROM LAND INFORMATION ONTARIO (MNRF) AND MODIFIED TO MATCH AERIAL IMAGERY AND LIDAR.
3. ROADS INFORMATION PROVIDED BY GREAT BEAR RESOURCES, AUGUST 2022.
4. PROPERTY BOUNDARY PROVIDED BY GREAT BEAR RESOURCES, AUGUST 2024.
5. COORDINATE SYSTEM: NAD 1983 UTM ZONE 15N

CLIENT
GREAT BEAR RESOURCES

PROJECT
GREAT BEAR PROJECT

TITLE
LOW GRADE ORE STOCKPILE ALTERNATIVE SITE LOCATIONS

CONSULTANT
wsp

YYYY-MM-DD	2025-07-24
DESIGNED	----
PREPARED	MD
REVIEWED	HL
APPROVED	DR

PROJECT NO.	CONTROL	REV.	FIGURE
CA0031271	0001	A	7-1

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI B
0 25mm

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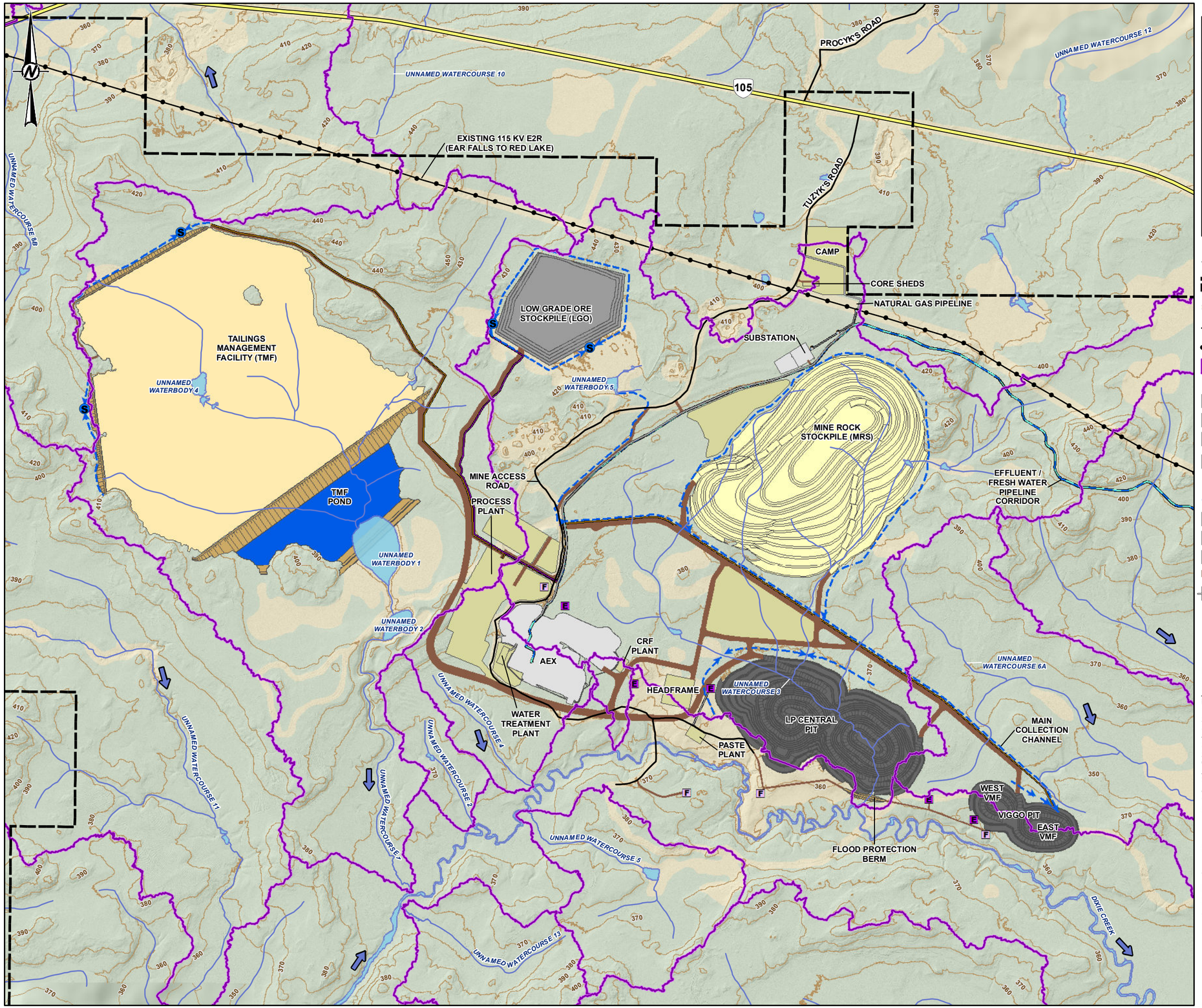

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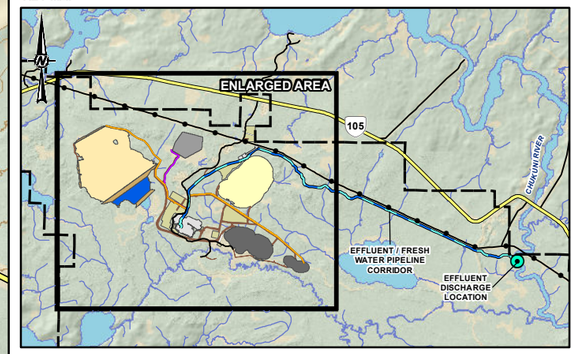

SCALE 1:175,000

LEGEND

- PROPERTY BOUNDARY
- HIGHWAY (INCLUDING NATURAL GAS PIPELINE)
- LOCAL ROAD
- EXISTING TRANSMISSION LINE
- LOCAL SUBCATCHMENT
- WATERCOURSE
- WATERBODY
- CONTOURS (10 M INTERVAL)
- FLOW DIRECTION

PROPOSED MINE FEATURE

- OPEN PIT
- MINE ROCK STOCKPILE (MRS)
- LOW GRADE ORE STOCKPILE (LGO)
- TAILINGS MANAGEMENT FACILITY (TMF)
- SUMP
- COLLECTION DITCH
- MINE FACILITIES / INFRASTRUCTURE
- DAM
- POND
- ROAD
- ADVANCED EXPLORATION SITE (AEX)
- EXHAUST VENT RAISE
- FRESH AIR VENT RAISE
- TRANSMISSION LINE
- CONTACT WATER PIPELINE
- TAILINGS PIPELINE
- PASTE PLANT PIPELINE
- EFFLUENT / FRESH WATER PIPELINE CORRIDOR
- EFFLUENT DISCHARGE LOCATION

0 0.25 0.5 1

1:26,500 KILOMETRES

NOTE(S)
1. ALL LOCATIONS ARE APPROXIMATE
2. VMF: VIGGO MANAGEMENT FACILITY

REFERENCE(S)
1. CONTAINS INFORMATION LICENSED UNDER THE OPEN GOVERNMENT LICENCE - ONTARIO
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6. SUBCATCHMENT BOUNDARIES DELINEATED USING 2022 LIDAR AND THE ONTARIO FLOW ASSESSMENT TOOL (MNRF).
7. COORDINATE SYSTEM: NAD 1983 UTM ZONE 15N

CLIENT
GREAT BEAR RESOURCES

PROJECT
GREAT BEAR PROJECT

TITLE
LOW GRADE ORE STOCKPILE ALTERNATIVE A CONFIGURATION

CONSULTANT

wsp

YYYY-MM-DD	2025-07-07
DESIGNED	----
PREPARED	MD
REVIEWED	HL
APPROVED	DR

PROJECT NO.	CONTROL	REV.	FIGURE
CA0031271	0001	A	7-2

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

25mm

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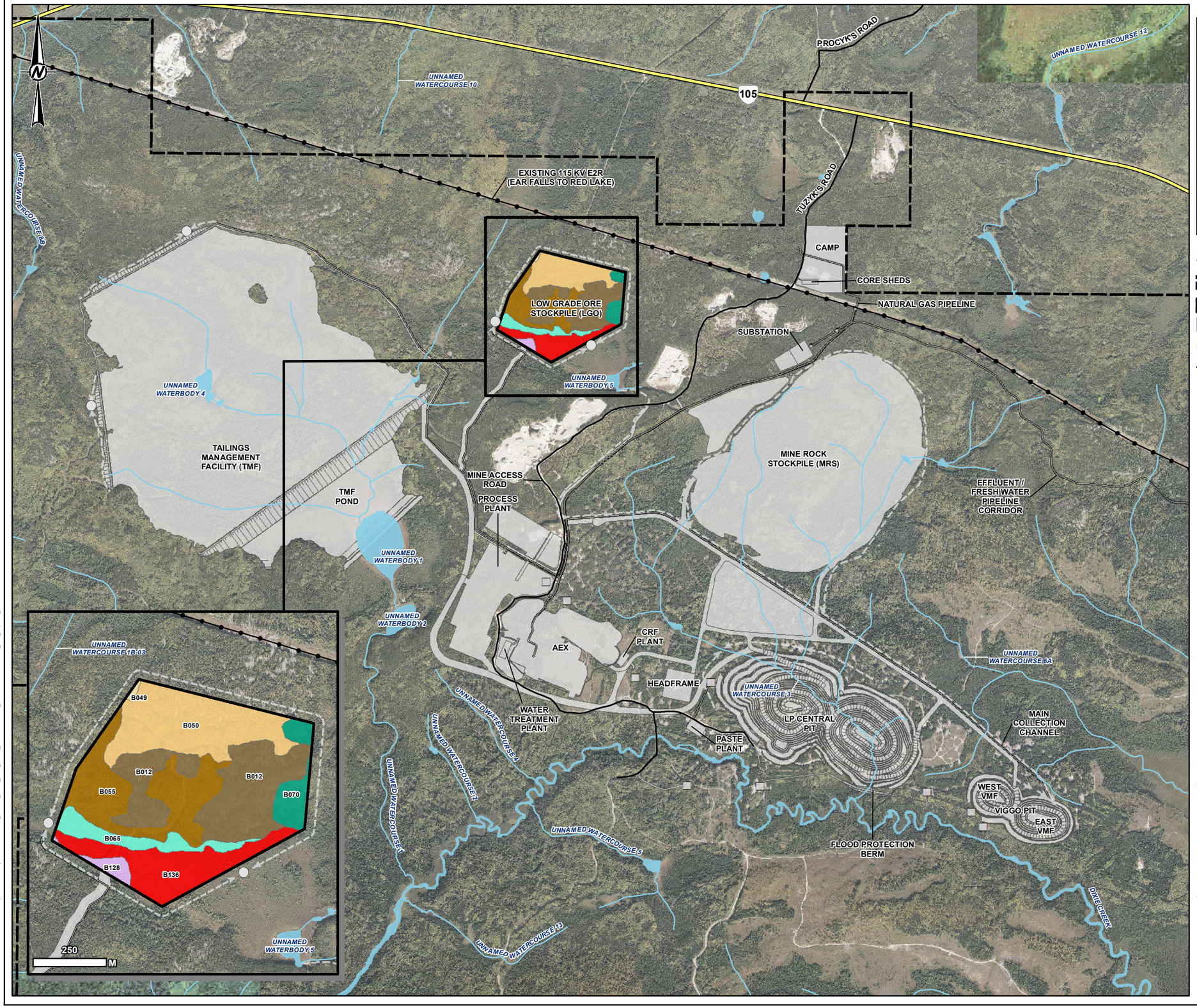

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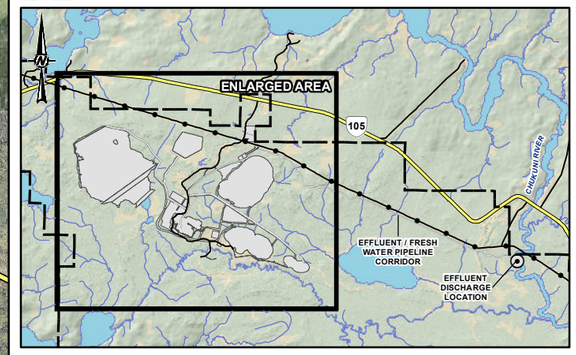

SCALE 1:175,000

LEGEND

- PROPERTY BOUNDARY
- PROPOSED LOW GRADE ORE STOCKPILE (LGO)
- OTHER PROPOSED MINE FEATURE
- HIGHWAY (INCLUDING NATURAL GAS PIPELINE)
- LOCAL ROAD
- EXISTING TRANSMISSION LINE
- WATERCOURSE
- WATERBODY

IMPACTED VEGETATION COMMUNITY

- B012: *VERY SHALLOW, DRY TO FRESH: PINE - BLACK SPRUCE CONIFER*
- B049: *DRY TO FRESH, COARSE: JACK PINE - BLACK SPRUCE DOMINATED*
- B050: *DRY TO FRESH, COARSE: PINE - BLACK SPRUCE CONIFER*
- B055: *DRY TO FRESH, COARSE: ASPEN - BIRCH HARDWOOD*
- B065: *MOIST, COARSE: PINE - BLACK SPRUCE CONIFER*
- B070: *MOIST, COARSE: ASPEN - BIRCH HARDWOOD*
- B128: *ORGANIC INTERMEDIATE CONIFER SWAMP*
- B136: *SPARSE TREED FEN*

0 0.25 0.5 1
1:26,500 KILOMETRES

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE
2. VMF: VIGGO MANAGEMENT FACILITY

REFERENCE(S)

1. CONTAINS INFORMATION LICENSED UNDER THE OPEN GOVERNMENT LICENCE - ONTARIO
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6. COORDINATE SYSTEM: NAD 1983 UTM ZONE 15N

CLIENT
GREAT BEAR RESOURCES

PROJECT
GREAT BEAR PROJECT

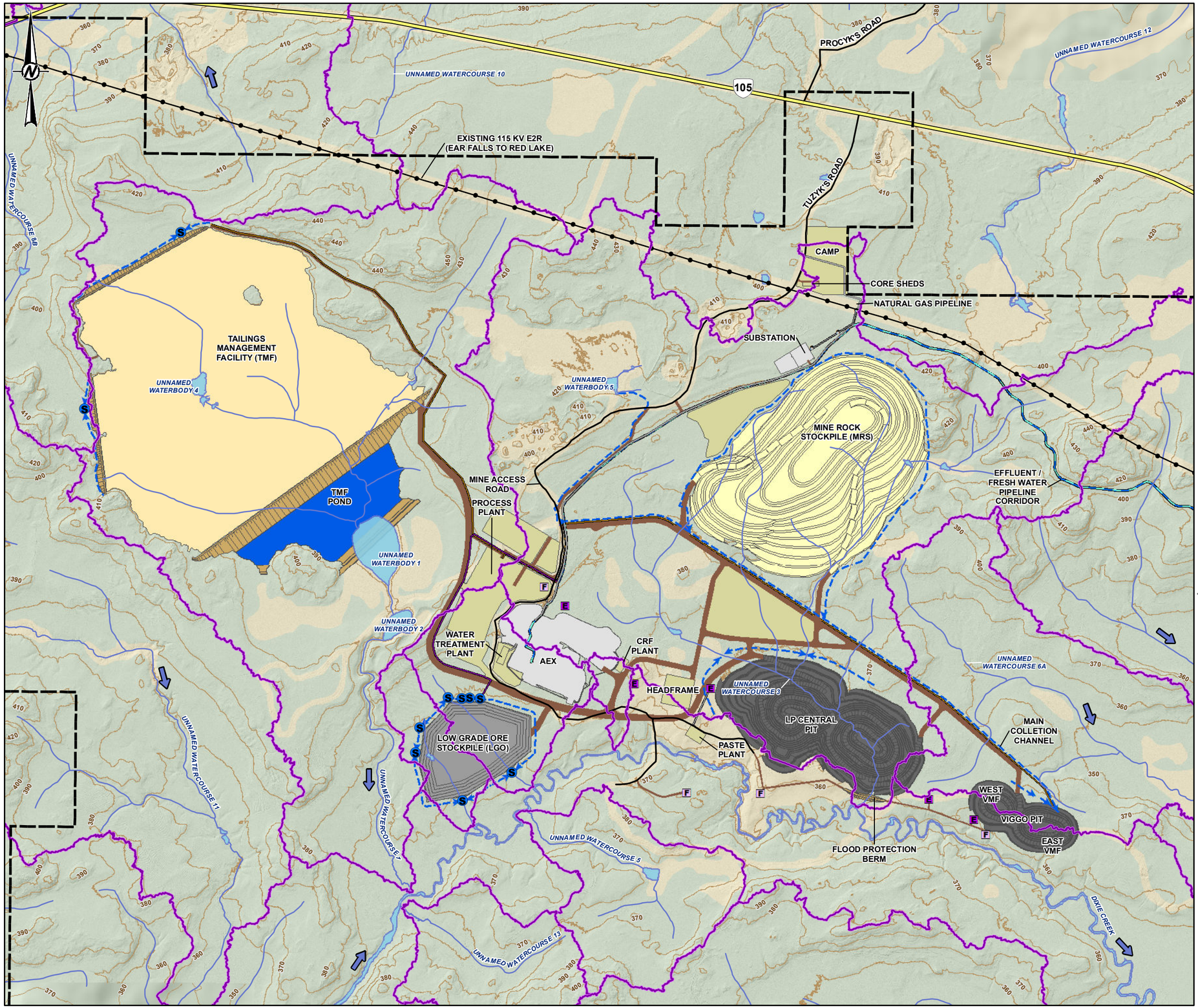
TITLE
LOW GRADE ORE ALTERNATIVE A VEGETATION COMMUNITIES AND FISHERIES RESOURCES

CONSULTANT

wsp

YYYY-MM-DD	2025-07-07
DESIGNED	----
PREPARED	MD
REVIEWED	HL
APPROVED	DR

PROJECT NO.	CONTROL	REV.	FIGURE
CA0031271	0001	A	7-3



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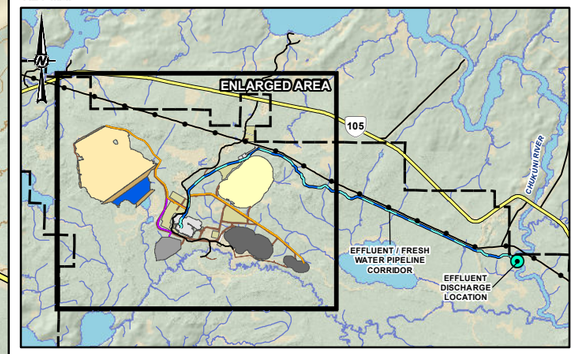

SCALE 1:175,000

LEGEND

- PROPERTY BOUNDARY
- HIGHWAY (INCLUDING NATURAL GAS PIPELINE)
- LOCAL ROAD
- EXISTING TRANSMISSION LINE
- LOCAL SUBCATCHMENT
- WATERCOURSE
- WATERBODY
- CONTOURS (10 M INTERVAL)
- FLOW DIRECTION

PROPOSED MINE FEATURE

- OPEN PIT
- MINE ROCK STOCKPILE (MRS)
- LOW GRADE ORE STOCKPILE (LGO)
- TAILINGS MANAGEMENT FACILITY (TMF)
- SUMP
- COLLECTION DITCH
- MINE FACILITIES / INFRASTRUCTURE
- DAM
- POND
- ROAD
- ADVANCED EXPLORATION SITE (AEX)
- EXHAUST VENT RAISE
- FRESH AIR VENT RAISE
- TRANSMISSION LINE
- CONTACT WATER PIPELINE
- TAILINGS PIPELINE
- PASTE PLANT PIPELINE
- EFFLUENT / FRESH WATER PIPELINE CORRIDOR
- EFFLUENT DISCHARGE LOCATION

0 0.25 0.5 1

1:26,500 KILOMETRES

NOTE(S)
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REFERENCE(S)
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7. COORDINATE SYSTEM: NAD 1983 UTM ZONE 15N

CLIENT
GREAT BEAR RESOURCES

PROJECT
GREAT BEAR PROJECT

TITLE
LOW GRADE ORE STOCKPILE ALTERNATIVE B CONFIGURATION

CONSULTANT

wsp

YYYY-MM-DD	2025-07-07
DESIGNED	----
PREPARED	MD
REVIEWED	HL
APPROVED	DR

PROJECT NO.	CONTROL	REV.	FIGURE
CA0031271	0001	A	7-4

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25mm

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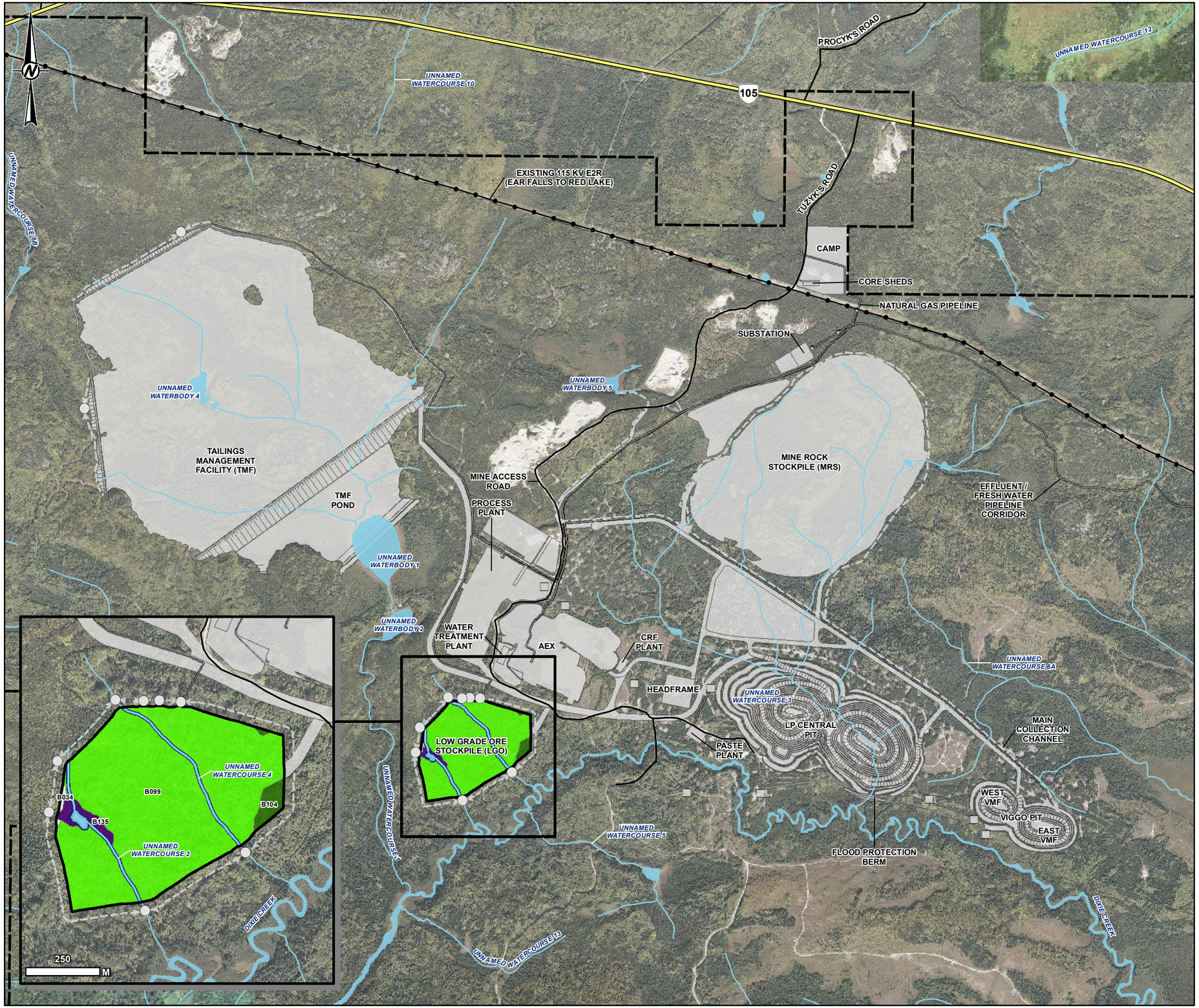

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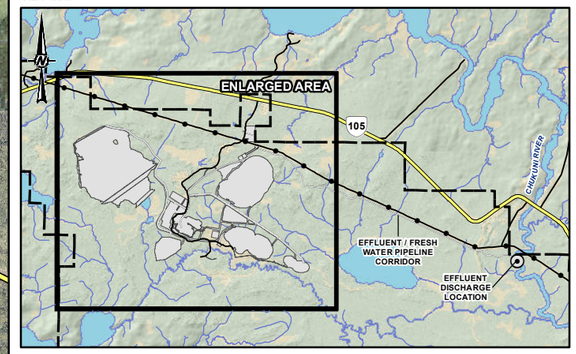

SCALE 1:175,000

LEGEND

- PROPERTY BOUNDARY
- PROPOSED LOW GRADE ORE STOCKPILE (LGO)
- OTHER PROPOSED MINE FEATURE
- HIGHWAY (INCLUDING NATURAL GAS PIPELINE)
- LOCAL ROAD
- EXISTING TRANSMISSION LINE
- WATERCOURSE
- WATERBODY
- IMPACTED WATERCOURSE
- IMPACTED WATERBODY

IMPACTED VEGETATION COMMUNITY

- B034: *DRY, SANDY: JACK PINE – BLACK SPRUCE DOMINATED*
- B099: *FRESH, SILTY TO FINE LOAMY: PINE - BLACK SPRUCE CONIFER*
- B104: *FRESH, SILTY TO FINE LOAMY: ASPEN - BIRCH HARDWOOD*
- B135: *ORGANIC THICKET SWAMP*

0 0.25 0.5 1
1:26,500 KILOMETRES

NOTE(S)
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6. COORDINATE SYSTEM: NAD 1983 UTM ZONE 15N

CLIENT
GREAT BEAR RESOURCES

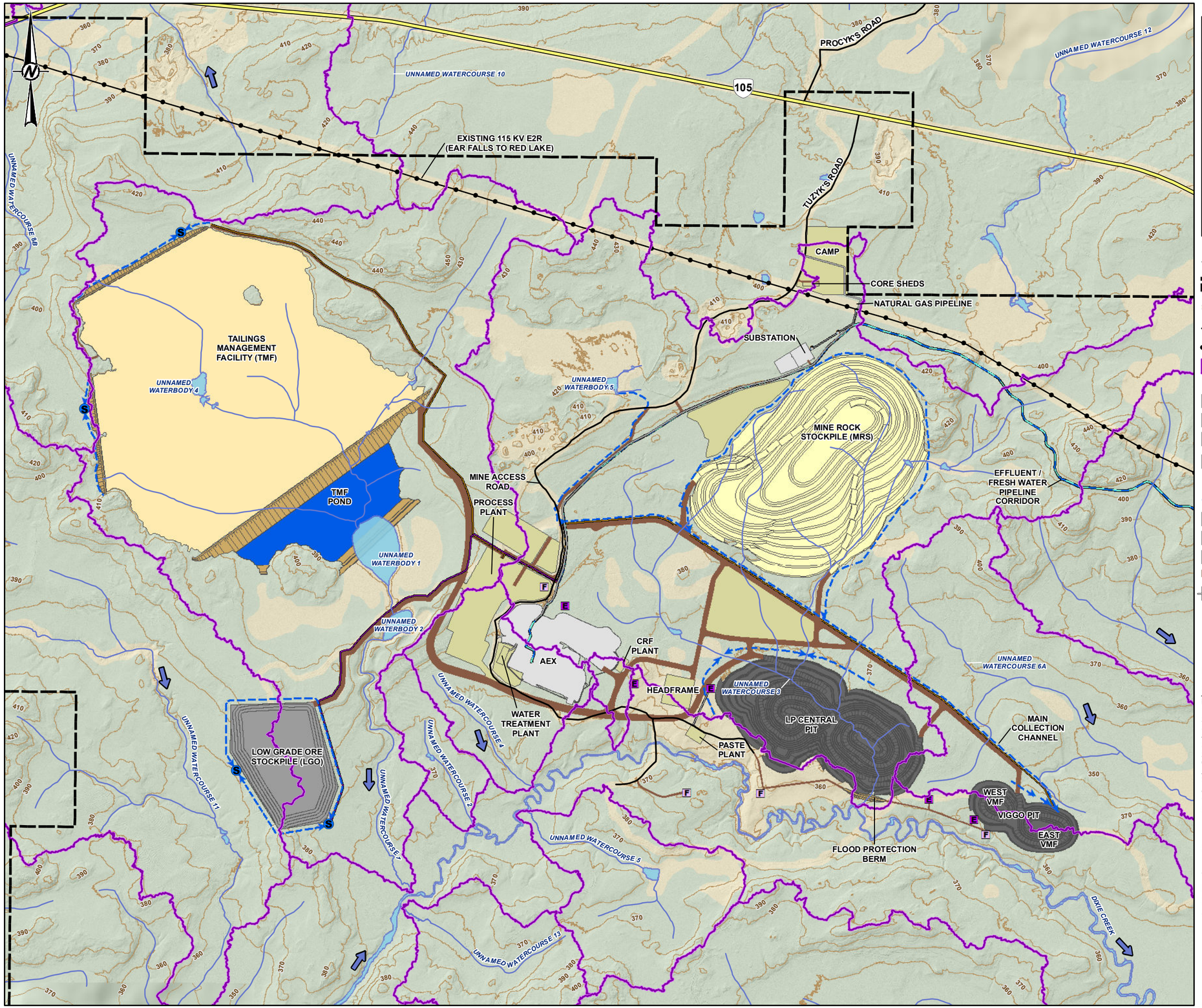
PROJECT
GREAT BEAR PROJECT

TITLE
LOW GRADE ORE ALTERNATIVE B VEGETATION COMMUNITIES AND FISHERIES RESOURCES

CONSULTANT
wsp

YYYY-MM-DD	2025-07-07
DESIGNED	----
PREPARED	MD
REVIEWED	HL
APPROVED	DR

PROJECT NO.	CONTROL	REV.	FIGURE
CA0031271	0001	A	7-5



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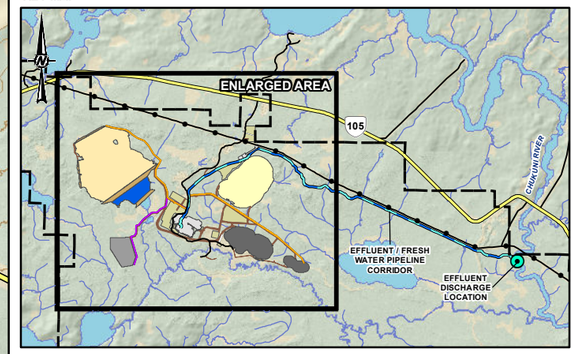

SCALE 1:175,000

LEGEND

- PROPERTY BOUNDARY
- HIGHWAY (INCLUDING NATURAL GAS PIPELINE)
- LOCAL ROAD
- EXISTING TRANSMISSION LINE
- LOCAL SUBCATCHMENT
- WATERCOURSE
- WATERBODY
- CONTOURS (10 M INTERVAL)
- FLOW DIRECTION

PROPOSED MINE FEATURE

- OPEN PIT
- MINE ROCK STOCKPILE (MRS)
- LOW GRADE ORE STOCKPILE (LGO)
- TAILINGS MANAGEMENT FACILITY (TMF)
- SUMP
- COLLECTION DITCH
- MINE FACILITIES / INFRASTRUCTURE
- DAM
- POND
- ROAD
- ADVANCED EXPLORATION SITE (AEX)
- EXHAUST VENT RAISE
- FRESH AIR VENT RAISE
- TRANSMISSION LINE
- CONTACT WATER PIPELINE
- TAILINGS PIPELINE
- PASTE PLANT PIPELINE
- EFFLUENT / FRESH WATER PIPELINE CORRIDOR
- EFFLUENT DISCHARGE LOCATION

0 0.25 0.5 1
1:26,500 KILOMETRES

NOTE(S)
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7. COORDINATE SYSTEM: NAD 1983 UTM ZONE 15N

CLIENT
GREAT BEAR RESOURCES

PROJECT
GREAT BEAR PROJECT

TITLE
LOW GRADE ORE STOCKPILE ALTERNATIVE C CONFIGURATION

CONSULTANT
wsp

YYYY-MM-DD	2025-07-07
DESIGNED	----
PREPARED	MD
REVIEWED	HL
APPROVED	DR

PROJECT NO.	CONTROL	REV.	FIGURE
CA0031271	0001	A	7-6

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

25mm

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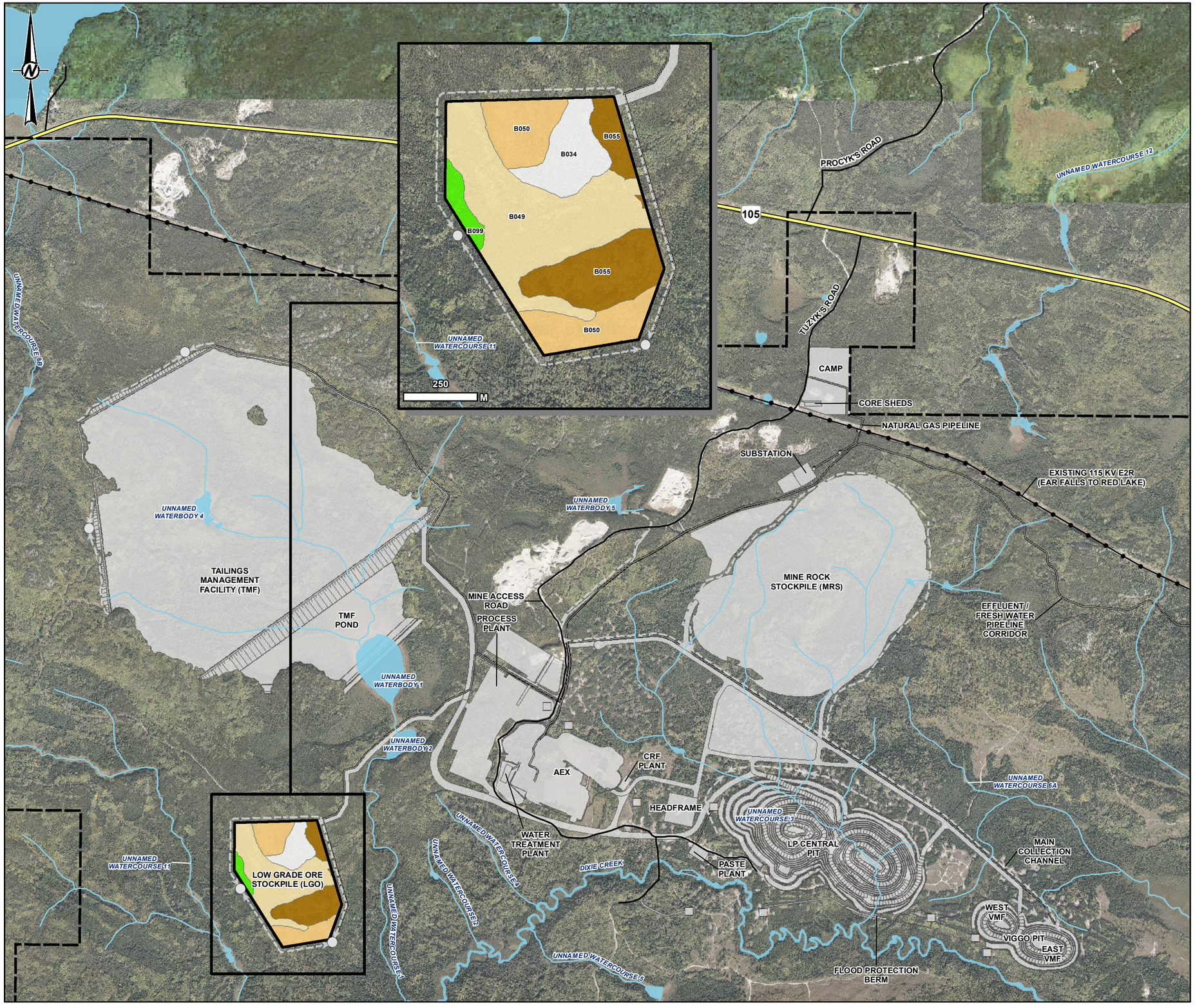
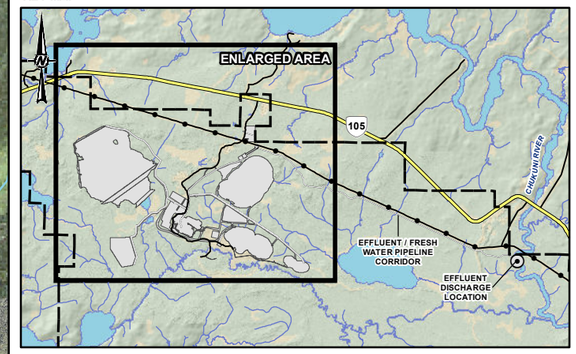


KEY MAP



SCALE 1:175,000

LEGEND

- PROPERTY BOUNDARY
- PROPOSED LOW GRADE ORE STOCKPILE (LGO)
- OTHER PROPOSED MINE FEATURE
- HIGHWAY (INCLUDING NATURAL GAS PIPELINE)
- LOCAL ROAD
- EXISTING TRANSMISSION LINE
- WATERCOURSE
- WATERBODY

IMPACTED VEGETATION COMMUNITY

- B034: *DRY, SANDY: JACK PINE – BLACK SPRUCE DOMINATED*
- B049: *DRY TO FRESH, COARSE: JACK PINE - BLACK SPRUCE DOMINATED*
- B050: *DRY TO FRESH, COARSE: PINE - BLACK SPRUCE CONIFER*
- B055: *DRY TO FRESH, COARSE: ASPEN - BIRCH HARDWOOD*
- B065: *MOIST, COARSE: PINE - BLACK SPRUCE CONIFER*
- B099: *FRESH, SILTY TO FINE LOAMY: PINE - BLACK SPRUCE CONIFER*
- B104: *FRESH, SILTY TO FINE LOAMY: ASPEN - BIRCH HARDWOOD*

0 0.25 0.5 1

1:26,500 KILOMETRES

NOTE(S)

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6. COORDINATE SYSTEM: NAD 1983 UTM ZONE 15N

CLIENT
GREAT BEAR RESOURCES

PROJECT
GREAT BEAR PROJECT

TITLE
LOW GRADE ORE ALTERNATIVE C VEGETATION COMMUNITIES AND FISHERIES RESOURCES

CONSULTANT

wsp

YYYY-MM-DD	2025-07-07
DESIGNED	----
PREPARED	MD
REVIEWED	HL
APPROVED	DR

PROJECT NO.	CONTROL	REV.	FIGURE
CA0031271	0001	A	7-7

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

25mm

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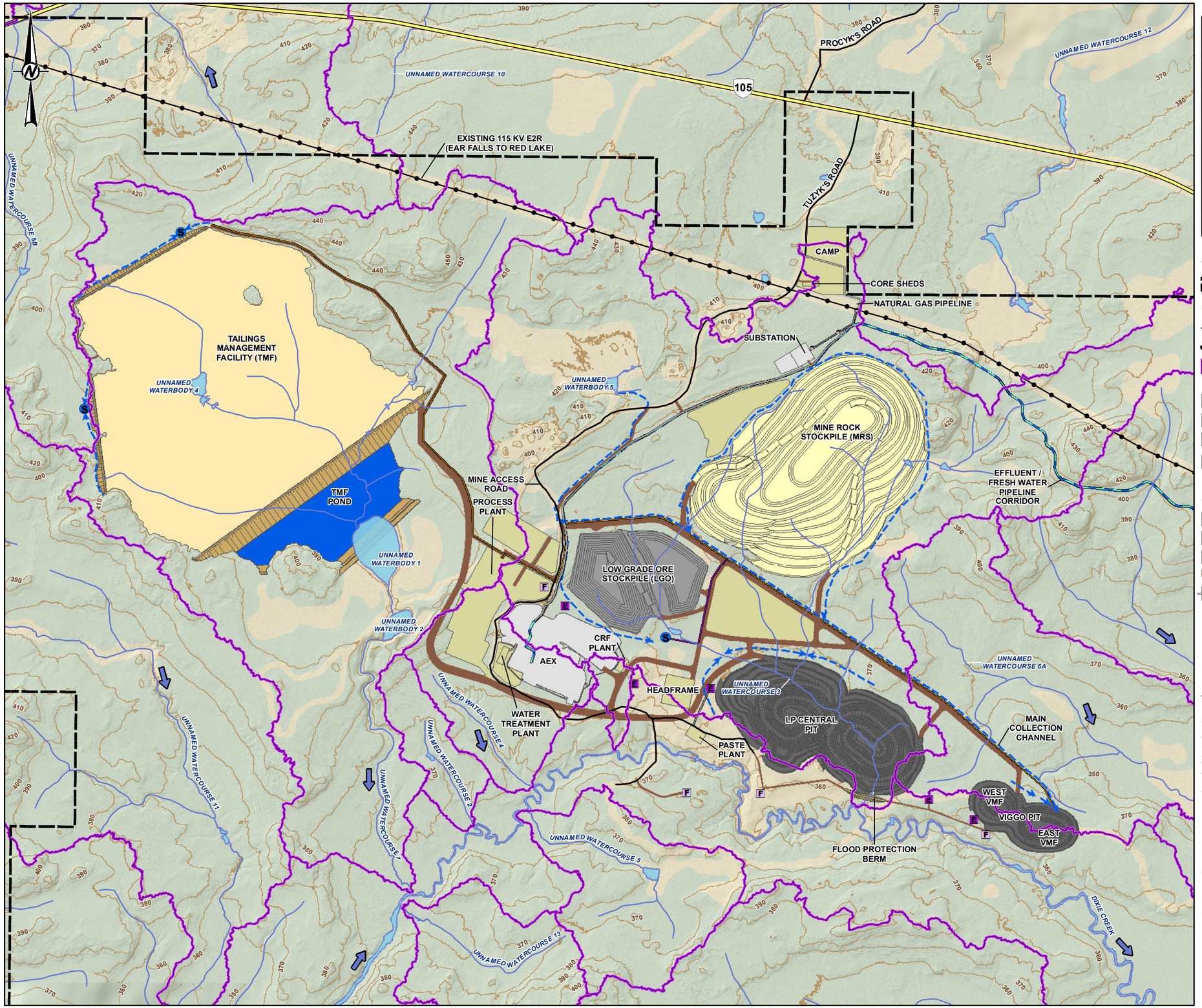
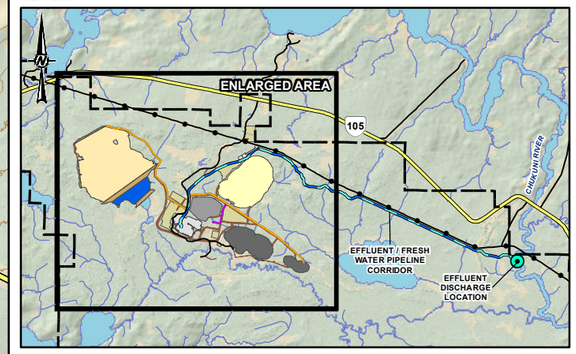


KEY MAP



SCALE 1:175,000

LEGEND

- PROPERTY BOUNDARY
- HIGHWAY (INCLUDING NATURAL GAS PIPELINE)
- LOCAL ROAD
- EXISTING TRANSMISSION LINE
- LOCAL SUBCATCHMENT
- WATERCOURSE
- WATERBODY
- CONTOURS (10 M INTERVAL)
- FLOW DIRECTION

PROPOSED MINE FEATURE

- OPEN PIT
- MINE ROCK STOCKPILE (MRS)
- LOW GRADE ORE STOCKPILE (LGO)
- TAILINGS MANAGEMENT FACILITY (TMF)
- SUMP
- COLLECTION DITCH
- MINE FACILITIES / INFRASTRUCTURE
- DAM
- POND
- ROAD
- ADVANCED EXPLORATION SITE (AEX)
- EXHAUST VENT RAISE
- FRESH AIR VENT RAISE
- TRANSMISSION LINE
- CONTACT WATER PIPELINE
- TAILINGS PIPELINE
- PASTE PLANT PIPELINE
- EFFLUENT / FRESH WATER PIPELINE CORRIDOR
- EFFLUENT DISCHARGE LOCATION

0 0.25 0.5 1

1:26,500 KILOMETRES

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE
2. VMF: VIGGO MANAGEMENT FACILITY

REFERENCE(S)

1. CONTAINS INFORMATION LICENSED UNDER THE OPEN GOVERNMENT LICENCE - ONTARIO
2. CONTOURS ACQUIRED FROM 2022 LIDAR SURVEY.
3. PROPERTY BOUNDARY PROVIDED BY GREAT BEAR RESOURCES, AUGUST 2024.
4. ROADS INFORMATION PROVIDED BY GREAT BEAR RESOURCES, AUGUST 2022.
5. SITE PLAN BASED ON INFORMATION PROVIDED BY GREAT BEAR RESOURCES, DECEMBER 2024 / JUNE 2025.
6. SUBCATCHMENT BOUNDARIES DELINEATED USING 2022 LIDAR AND THE ONTARIO FLOW ASSESSMENT TOOL (MNRF).
7. COORDINATE SYSTEM: NAD 1983 UTM ZONE 15N

CLIENT
GREAT BEAR RESOURCES

PROJECT
GREAT BEAR PROJECT

TITLE
LOW GRADE ORE STOCKPILE ALTERNATIVE D CONFIGURATION

CONSULTANT

wsp

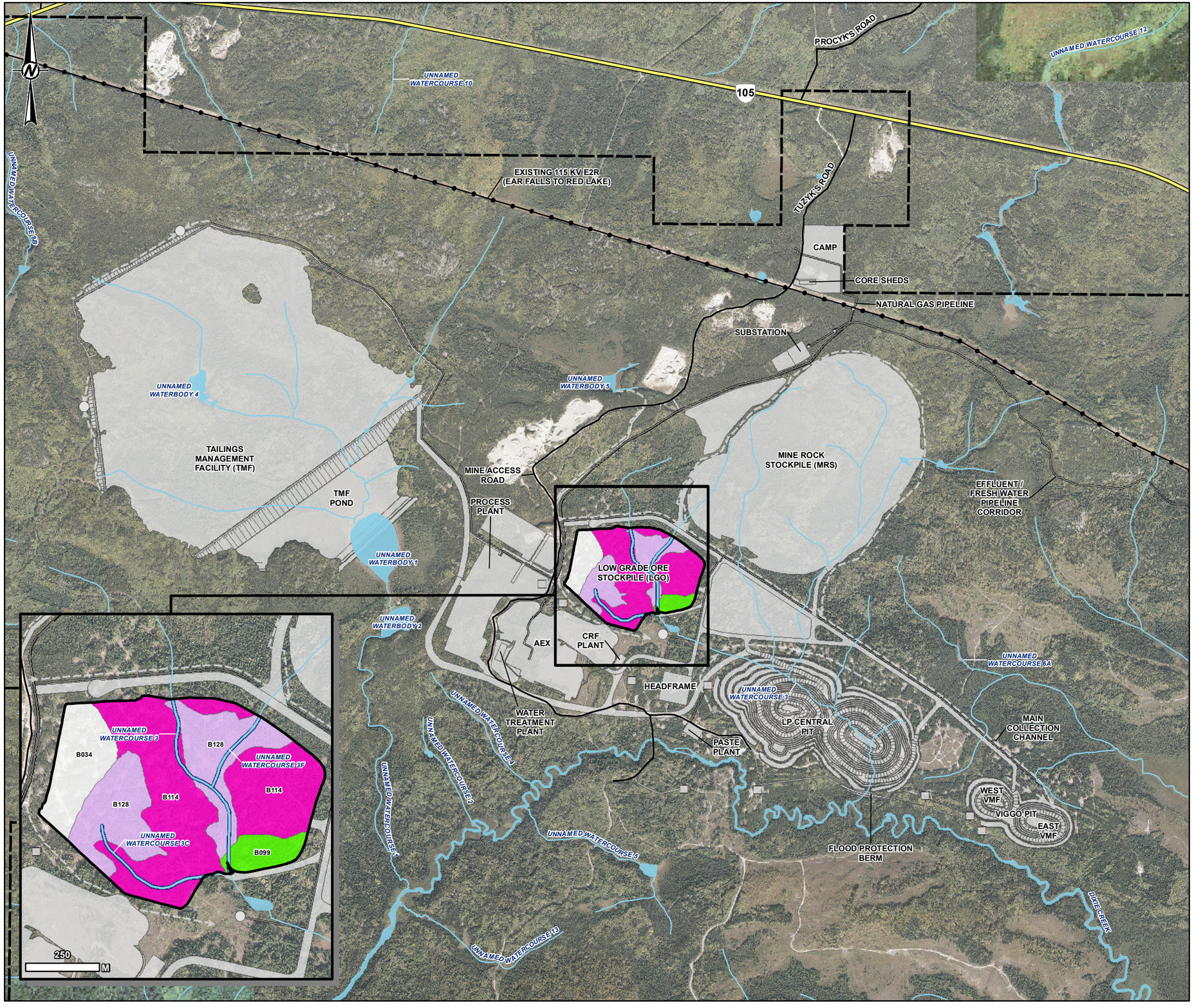
YYYY-MM-DD	2025-07-07
DESIGNED	----
PREPARED	MD
REVIEWED	HL
APPROVED	DR

PROJECT NO.	CONTROL	REV.	FIGURE
CA0031271	0001	A	7-8

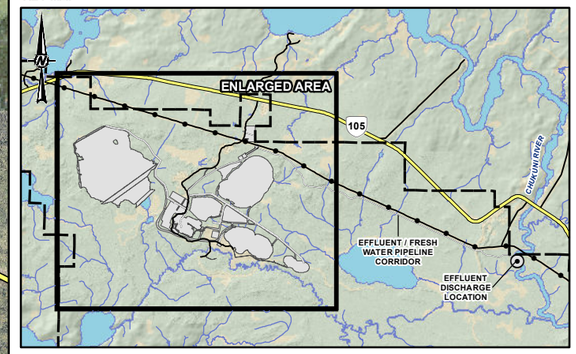
IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI B

25mm

PATH: X:\CA\CAOAK\300-OAKMIS-FS1-Project\P2023\Projects\OME\MA2103_Kinross_Great_Bear_Env\7_GIS\Alternatives_Assessment\MXD\LGO_Alt4_Site_Config_4.mxd PRINTED ON: 2025-07-07 AT: 1:53:18 PM



KEY MAP



SCALE 1:175,000

LEGEND

- PROPERTY BOUNDARY
- PROPOSED LOW GRADE ORE STOCKPILE (LGO)
- OTHER PROPOSED MINE FEATURE
- HIGHWAY (INCLUDING NATURAL GAS PIPELINE)
- LOCAL ROAD
- EXISTING TRANSMISSION LINE
- WATERCOURSE
- WATERBODY
- IMPACTED WATERCOURSE

IMPACTED VEGETATION COMMUNITY

- B034: *DRY, SANDY: JACK PINE – BLACK SPRUCE DOMINATED*
- B099: *FRESH, SILTY TO FINE LOAMY: PINE - BLACK SPRUCE CONIFER*
- B114: *MOIST, FINE: PINE - BLACK SPRUCE CONIFER*
- B128: *ORGANIC INTERMEDIATE CONIFER SWAMP*

0 0.25 0.5 1

1:26,500 KILOMETRES

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE
2. VMF: VIGGO MANAGEMENT FACILITY

REFERENCE(S)

1. CONTAINS INFORMATION LICENSED UNDER THE OPEN GOVERNMENT LICENCE - ONTARIO
2. AERIAL IMAGERY PROVIDED BY GREAT BEAR RESOURCES (SCENE DATE: SEPTEMBER 2022).
3. PROPERTY BOUNDARY PROVIDED BY GREAT BEAR RESOURCES, AUGUST 2024.
4. ROADS INFORMATION PROVIDED BY GREAT BEAR RESOURCES, AUGUST 2022.
5. SITE PLAN BASED ON INFORMATION PROVIDED BY GREAT BEAR RESOURCES, DECEMBER 2024 / JUNE 2025.
6. COORDINATE SYSTEM: NAD 1983 UTM ZONE 15N

CLIENT
GREAT BEAR RESOURCES

PROJECT
GREAT BEAR PROJECT

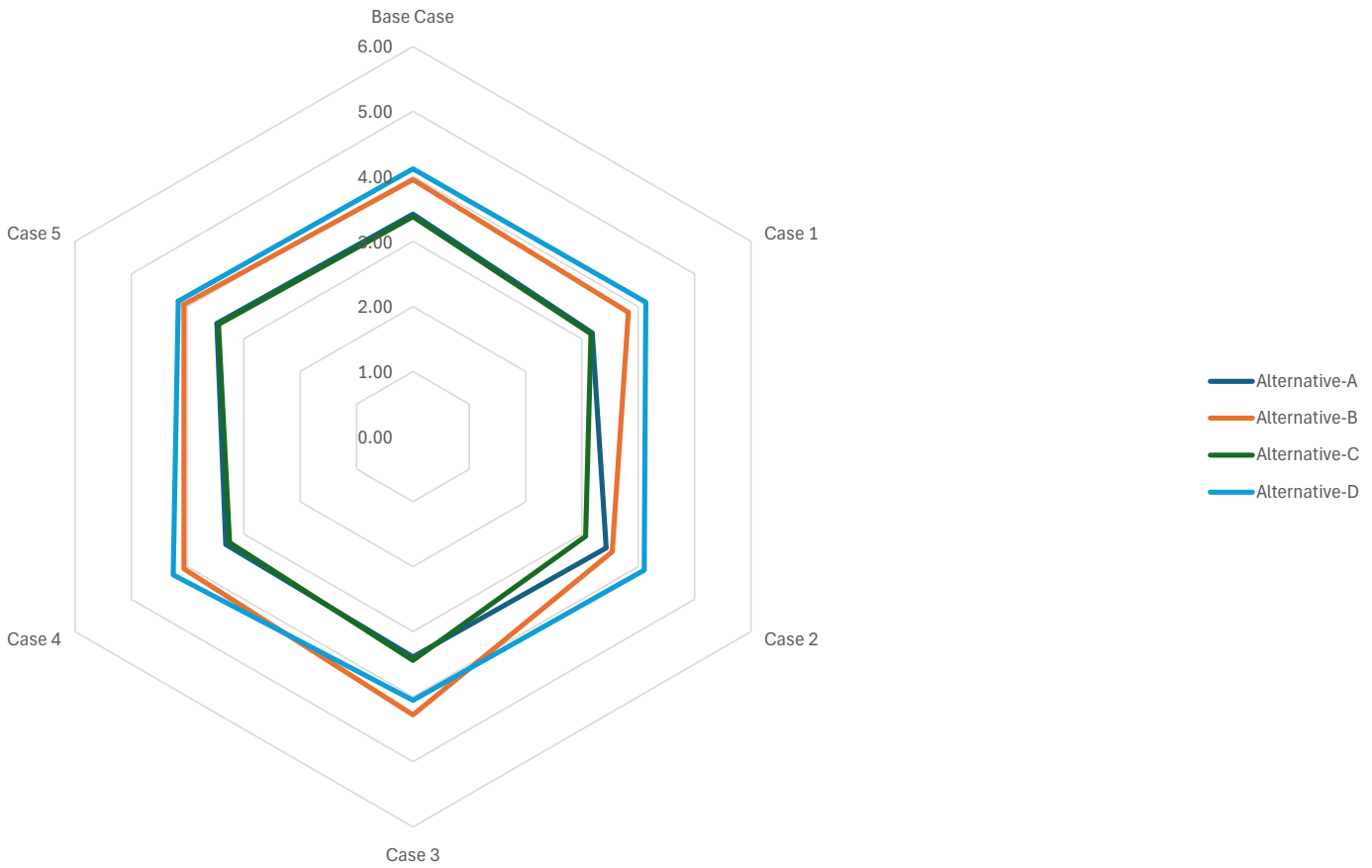
TITLE
LOW GRADE ORE ALTERNATIVE D VEGETATION COMMUNITIES AND FISHERIES RESOURCES

CONSULTANT

wsp

YYYY-MM-DD	2025-07-07
DESIGNED	----
PREPARED	MD
REVIEWED	HL
APPROVED	DR

PROJECT NO.	CONTROL	REV.	FIGURE
CA0031271	0001	A	7-9



Notes

KINROSS Great Bear

Low Grade Ore Stockpile Sensitivity Analysis

Great Bear Project Assessment for Alternatives for Storage of Mine Waste

Great Bear Project

Figure Number		7-10	
Project Number		OMEMA2303	
Date		December 2025	
Drawn	HL	Reviewed	DR

8 MINE WATER PONDS

8.1 STEP 1: CANDIDATE OF MINE WATER POND ALTERNATIVES

A MWP is expected to be required to store contact water later in the Project operations. During early operations, contact water and the concentrate tailings will be stored in the VMF. Later in the operations phase of the Project, the capacity of the VMF is reduced and a MWP will be required for additional contact water storage. For the purposes of the siting assessment, it was assumed that the MWP will need to store a minimum of 2 Mm^3 of contact water with a preference to store up to 4 Mm^3 of contact water. Eight potential locations for the MWP were identified (Figure 8-1), with Alternative A located to avoid waterbodies and watercourses that are frequented by fish.

Threshold criteria were developed for the MWP alternatives assessment. The following threshold criteria were developed for the MWP evaluation:

- Great Bear Resources has identified a potential area for fish habitat compensation and freshwater diversion from the Project locations northeast of the MRS; this area will not be considered for a MWP
- Great Bear Resources has identified the preferred location for their headframe and underground access which are tied to the ore body, located west of LP Central pit; MWP alternatives that overprint these locations will not be considered further.

Two alternatives were removed from consideration based on the above threshold criteria and were not advanced to the pre-screening evaluation for the MWP alternatives. Alternative G overprints the potential area for designated for fish habitat and Alternative D overprints the headframe location.

A small pond will be required for all MWP alternatives to collect contact waters, that is proposed to be constructed in an undeveloped area, between the LGO, LP Central pit, headframe and nearby access and haul roads. There will be no viable fish habitat remaining in this area following construction of LP Central pit and the preferred LGO.

Membrane filtration will form part of the contact water treatment process for the Great Bear Project. Reject solution will be generated from the membrane filtration process which will require storage. The reject solution will be stored primarily in the west VMF, as well as within a small holding pond located near the AEX Program. There are no watercourses or waterbodies at the Viggo pit (or subsequent east VMF and west VMF) or holding pond. Accordingly, a Schedule 2 listing is not required for the storage of the reject solution in the west VMF and holding pond, and an alternatives assessment is not provided in this document.

8.1.1 ALTERNATIVE A

Alternative A is wholly situated within the Property as shown in Figure 8-1 and is about 6.3 km from the LP Central pit. Alternative A is sited northwest of the preferred TMF location and is in the Gullrock Lake – Chukuni River catchment. Alternative A overprints a small length of Unnamed Watercourse 8B, however, during baseline studies, this tributary was found to not be frequented by fish (WSP 2024d).

Alternative A will require the construction of six dams with a maximum dam height of 10 m and will have an approximate water storage volume of 2.7 Mm^3. Based on the constraints map provided by Great Bear Resources, Alternative A is indicated to not overprint areas with potential mineralization targets for future mining activities and has a low risk for overprinting priority protection areas.

8.1.2 ALTERNATIVE B

Alternative B is wholly situated within the Property as shown in Figure 8-1, about 3.0 km northwest from the LP Central pit. Alternative B is located southeast of the preferred TMF location and overprints a portion of Unnamed Waterbody 1 which is known to be frequented by fish. Alternative B is located in the Dixie Creek north tributary subcatchment along with the preferred locations for the TMF, MRS and LGO (Figure 8-1).

Alternative B will require the construction of one dam with a maximum dam height of 6 m and will provide an approximate storage of 2.1 Mm^3. Based on the constraints map provided by Great Bear Resources, Alternative B is indicated to not overprint areas with potential mineralization targets for future mining activities.

8.1.3 ALTERNATIVE C

Alternative C is wholly situated on the Property as illustrated in Figure 8-1 and is sited about 3.0 km from the LP Central pit. Alternative C is located northwest of LP Central pit, east of the preferred TMF alternative and south of the E2R transmission line. Alternative C is located in the Dixie Creek north tributary subcatchment along with the preferred locations for the TMF, MRS and LGO (Figure 8-1).

Alternative C will require the construction of one dam with a maximum dam height of 15 m and will have an approximate storage of 3.7 Mm^3. Based on the constraints map provided by Great Bear Resources, Alternative C has a low risk of overprinting areas with potential mineralization targets for future mining activities. Alternative C overprints other existing commercial aggregate operations and lands.

8.1.4 ALTERNATIVE E

Alternative E is wholly situated on the Property as illustrated in Figure 8-1, about 0.7 km north of the LP Central pit. It is located in the Dixie Creek north tributary subcatchment, as are the preferred locations for the TMF, MRS and LGO (Figure 8-1).

Alternative E will require the construction of two dams with a maximum dam height of 12 m to provide an approximate storage of 2.0 Mm^3. Alternative E also requires excavation to achieve the required storage. This alternative provides a low potential for future expansion.

Based on the constraints map provided by Great Bear Resources, Alternative E has a moderate risk of overprinting areas with potential mineralization targets for future mining activities.

8.1.5 ALTERNATIVE F

Alternative F is located on the Property (Figure 8-1) about 1.0 km northwest from the LP Central pit within the Dixie Creek catchment.

Alternative F will require the construction of three dams with a maximum dam height of 18 m to provide an approximate storage of 3.2 Mm^3. Alternative F has a moderate potential for future expansion if needed.

Based on the constraints map provided by Great Bear Resources, Alternative F has a moderate risk of overprinting areas with potential mineralization targets for future mining activities.

8.1.6 ALTERNATIVE H

Alternative H is wholly situated on the Property as illustrated in Figure 8-1, about 3.1 km northwest from the LP Central pit. The alternative is located in the Dixie Creek north tributary subcatchment, as are the preferred locations for the TMF, MRS and LGO (Figure 8-1).

MWP Alternative H will require the construction of one dam with a maximum dam height of 14 m to provide an approximate storage of 3.7 Mm^3. Alternative H is indicated to have high potential for future expansion.

Based on the constraints map provided by Great Bear Resources, Alternative H has a low risk of overprinting areas with potential mineralization targets for future mining activities.

8.2 STEP 2: PRE-SCREENING ASSESSMENT OF MWP ALTERNATIVES

The pre-screening criteria for the MWP alternatives were developed to remove alternatives with potential fatal flaws from the MAA. Fatal flaws at this stage of the alternatives assessment consider indicators of potential high capital costs and overprinting of previous identified preferred areas for the TMF, MRS and LGO. The pre-screening criteria for the MWP candidate alternatives are:

- Does the alternative require more excavation than storage space, which is indicative of high capital costs? (yes / no)
- Do the alternatives avoid overprinting other site facilities or industries such as quarries / commercial aggregate operations? (yes / no)
- Do the alternatives avoid overprinting the preferred TMF potential expansion area, based on the TMF footprint in the Mine Water Pond Siting Study or the preferred MRS and LGO (WSP 2023d)? (yes / no)
- Do the alternatives avoid areas that could pose a safety risk to the public or works [2]?.

Based on these pre-screening criteria, three MWP candidate alternatives (Alternatives A, B and F) were carried forward as presented in Table 8-1.

8.3 STEP 3: MWP ALTERNATIVES CHARACTERIZATION

At the outset, a total of eight alternatives were reviewed for the MWP. Through the threshold criteria and pre-screening process, the total number of alternatives to be carried forward was reduced to three for consideration in the MAA:

- Alternative A
- Alternative B
- Alternative F.

All MWP dams considered in the MAA will be designed to align with best practices including Mining Association of Canada Tailings Guide (MAC, 2021), Canadian Dam Association (CDA, 2013; 2019), MNR and in accordance with EMS for Tailings. The alternatives are summarized in following sections and in Table 8-2. The alternatives were developed to support ranking and consideration in the MAA with the purpose of identifying the preferred MWP location. The rationale for the sub-accounts and indicators used in the MAA for the MWP are summarized in Table 8-3.

[2] It is noted that the risk to worker safety in LP Central pit is greater for a pond location in which liquids, in the event of a dam breach, could quickly travel into the open pit. However, other solid mine wastes such as overburden and mine rock do not pose a risk as these materials do not travel to the extent of tailings and liquids and minor slope failures would be restricted to an area upgradient from the LP Central pit.

8.3.1 ALTERNATIVE A

Alternative A is located about 6.3 km west of LP Central pit and is wholly situated on the Property as shown in Figure 8-2. Alternative A is sited in the Gullrock Lake - Chukuni River subcatchment that drains to Gullrock Lake which ultimately reports to the Chukuni River. Alternative A is sited in a separate catchment area from the preferred TMF, MRS and LGO which are all situated in the Dixie Creek north tributary subcatchment. Alternative A overprints a small portion of Unnamed Watercourse 8B, however, this portion was found to not be frequented by fish during aquatic baseline studies (WSP 2024d).

Alternative A will have an anticipated surface area of 62 ha. Natural topography and six water retaining dams will provide water storage of up to 2.7 Mm^3 as shown in Figure 8-2. The six water retaining dams are anticipated to have a cumulative dam length of 1,000 m and a maximum dam height of 10 m achieving an elevation of 400 masl. The dam footprints will cover about 3 ha and are assumed to be constructed with a downstream slope of 3H:1V, requiring about 115,000 m^3 of dam fill material (WSP 2023d).

Contact water from the Project will be conveyed via pipelines to the MWP. For the purposes of the MAA analysis, the water pipeline was assumed to connect Alternative A to the process plant. Roads will also be required for pipeline maintenance and MWP dam construction, operation and maintenance. The Alternative A pipeline and additional road alignment (excluding roads and water crossings in place from the AEX Program and the preferred TMF, MRS and LGO alternatives) will connect the northern MWP dam to the process plant as shown in Figure 8-2. It is anticipated that Alternative A will require 1.4 km of additional road length and a water pipeline of 5.2 km length.

Alternative A will overprint a variety of vegetation communities including but not limited to pine, black spruce conifer, aspen, birch hardwood, intermediate conifer swamp and mineral meadow marsh. Figure 8-3 shows the overprinted vegetation communities.

During consultation, wild rice fields and moose habitat were identified as being of interest to Indigenous communities. Baseline studies identified SAR species and associated habitat at the Project. Alternative A is anticipated to approximately overprint the following vegetation and habitat types:

- Wild rice fields: 0 ha
- Moose late wintering habitat: 59.5 ha
- Moose foraging habitat: 2.3 ha
- SAR Habitats:
  - Caribou refuge habitat: 33.5 ha
  - Bat maternity roost habitat: 59.5 ha
  - Bat foraging habitat: 24.9 ha
  - Wolverine habitat: 22.3 ha
  - Avian SAR habitat: 62.0 ha.

Contact water and seepage from Alternative A will be managed by natural topography, and perimeter ditching and collection sumps located in low lying areas at the MWP. Alternative A will require approximately 1.1 km of perimeter ditching and nine collection sumps. In the unlikely event of MWP dam failure, it is anticipated that water would likely remain within the catchment area of the MWP and flow via Unnamed Watercourse 8B, potentially reaching Gullrock Lake.

Comparative cost estimates were developed for Alternative A based on quantities provided in *Mine Water Pond Siting Study* (WSP 2023d) with the purposes of evaluating the MWP alternatives in the MAA. The comparative costs considered the following:

- Dam clearing: 3.0 ha
- Dam fill volume: 0.1 Mm^3

- Perimeter ditching: 1.1 km
- Seepage collection sumps: 9
- Water pipeline: 5.2 km
- Roads: 1.4 km.

Based on the comparative cost estimate provided in Appendix D, it is anticipated that Alternative A will have a comparative construction cost of about $11.9 million.

At closure and for the purposes of supporting ranking of the MWP alternatives, it was assumed that the dams would be breached, the water level would be lowered, and the area would be seeded. For comparative closure costs it was assumed that the water level in the MWP would be lowered and that about half the footprint of the MWP would be covered and seeded. The estimated comparative closure cost for the overburden material and seeding is about $2 million.

8.3.2 ALTERNATIVE B

Alternative B is located about 3.0 km from LP Central pit and is wholly situated on the Property as shown in Figure 8-4. Alternative B is sited in between the preferred TMF location and the process plant, maintaining a compact overall Project footprint. Alternative B sits in Dixie Creek north tributary subcatchment, which is the same subcatchment area as the preferred TMF, MRS and LGO locations.

Alternative B will have a surface area of 40.9 ha and will use natural topography and the construction of one water retaining dam to provide storage for up to 2.1 Mm^3 of contact water. The single water retaining dam is anticipated to have a cumulative dam length of 0.75 km and a maximum dam height of 6 m achieving an elevation of 389 masl. The dam footprint will be less than 1 ha and will be constructed with a downstream slope of 1.5H:1V requiring about 233,000 m^3 of dam fill material (WSP 2024a,e,f).

Contact water from the Project will be conveyed via pipelines to the MWP. For the purposes of the MAA analysis, the water pipeline was assumed to connect Alternative B to the process plant (Figure 8-4). Alternative B is anticipated to have a water pipeline length of 1.2 km and was assumed to require an additional road network length of 0.3 km. Seepage from the MWP will be collected by natural topography, gravity draining ditches and collection sumps located in low lying areas. Alternative B is anticipated to require 0.7 km of ditching and one collection sump.

Alternative B will overprint both aquatic and terrestrial habitats. As shown in Figure 8-5, Alternative B will overprint a portion of Unnamed Waterbody 1 and a small section of Unnamed Watercourse 1 which are frequented by fish. Vegetation types within the Alternative B footprint include jack pine, black spruce aspen, birch hardwood, intermediate conifer swamp and mineral meadow marsh.

During consultation, wild rice fields and moose habitat were identified as being of interest to Indigenous communities, and baseline studies identified SAR species and associated habitat at the Project. Alternative B is anticipated to approximately overprint the following vegetation and habitat types:

- Wild rice fields: 7.2 ha
- Moose late wintering habitat: 33.4 ha
- Moose foraging habitat: 2.1 ha
- SAR Habitats:
  - Caribou refuge habitat: 26.7 ha
  - Bat maternity roost habitat: 27.8 ha
  - Bat foraging habitat: 28.3 ha
  - Wolverine habitat: 19.7 ha
  - Avian SAR habitat: 40.9 ha.

In the unlikely event of MWP dam failure it is anticipated that water would flow via Unnamed Watercourse 1 potentially to Dixie Creek.

Comparative cost estimates were developed for Alternative B with the purposes of evaluating the MWP alternatives in the MAA based on quantities provided in by WSP (2024a,d,e). Details are provided indicated in Table 8-4. The Alternative B comparative costs considered the following:

- Dam clearing: 3,800 m^2
- Dam fill volume: 0.2 Mm^3
- Perimeter ditching: 0.7 km
- Seepage collection sumps: 1
- Water pipeline: 1.2 km
- Roads: 0.3 km.

Based on the comparative cost estimate provided in Appendix D, Alternative B will have a comparative construction cost of about $8.2 million.

At closure and for the purposes of supporting ranking of the MWP alternatives, it was assumed that the dams would be breached, the water level would be lowered, and the area would be seeded. For comparative closure costs it was assumed that the water level in the MWP would be lowered and that about half the footprint of the MWP would be covered and seeded. The estimated comparative closure cost for the overburden material and seeding is about $1 million.

8.3.3 ALTERNATIVE F

Alternative F is located about 1.0 km north of the LP Central pit wholly situated on the Property as shown in Figure 8-6. The alternative is situated in the Dixie Creek catchment that drains towards Unnamed Waterbody 6, ultimately reporting to the Chukuni River. This is a different subcatchment from the preferred TMF, MRS and LGO locations. The proposed location is proximal to LP Central pit and Viggo pit and would maintain an overall smaller Project footprint.

Alternative F will have an anticipated MWP footprint of 70.3 ha. Natural topography and three water retaining dams will support water storage of up to 3.2 Mm^3 as shown in Figure 8-6. The three water retaining dams are anticipated to have a cumulative dam length of 1,650 m and a maximum dam height of 18 m achieving an elevation of 370 masl. The dam footprint will be about 28 ha. Dams are assumed to be constructed with a downstream slope of 10H:1V requiring about 1,600,000 m^3 of dam fill material.

Contact water from the Project will be conveyed via pipelines to the MWP. For the purposes of the MAA analysis, the water pipeline was assumed to connect Alternative F to the process plant. It is anticipated that a water pipeline length of about 3.9 km and an additional road network length of 0.7 km will be needed. Contact water and seepage from the Alternative F MWP will be collected by natural topography, gravity draining ditches and collection sumps located in low lying areas. Alternative F is anticipated to require 1.8 km of ditching and five collection sumps.

Construction of Alternative F will overprint both aquatic and terrestrial habitats. Alternative F will overprint about 1.8 km of watercourse length that is frequented by fish including portions of Unnamed Watercourse 6A and Unnamed Watercourse 6A-01. Vegetation will also be overprinted by Alternative F and include pine, black spruce, aspen, birch hardwood and organic thicket swamp. Overprinted vegetation communities are shown on Figure 8-7.

During consultation, wild rice fields and moose habitat were identified as being of interest to Indigenous communities, and baseline studies identified SAR species and associated habitat at the Project. Alternative F is anticipated to approximately overprint the following vegetation and habitat types:

- Wild rice fields: 0 ha
- Moose late wintering habitat: 70.1 ha
- Moose foraging habitat: 0 ha
- SAR Habitats:
  - Caribou refuge habitat: 31.8 ha
  - Bat maternity roost habitat: 69.6 ha
  - Bat foraging habitat: 7.1 ha
  - Wolverine habitat: 6.1 ha
  - Avian SAR habitat: 70.3 ha.

In the unlikely event of MWP dam failure it is anticipated that water would be contained in LP Central pit or could flow into Unnamed Watercourse 6A ultimately reporting to Dixie Creek and potentially reach the Chukuni River.

Comparative cost estimates were developed for Alternative F with the purposes of evaluating the MWP alternatives in the MAA. Comparative cost estimates were based on quantities provided in *Mine Water Pond Siting Study* (WSP 2024d). The Alternative F comparative costs considered the following as summarized Table 8-4:

- Dam clearing: 28 ha
- Dam fill volume: 1.6 Mm^3
- Perimeter ditching: 1.8 km
- Seepage collection sumps: 5
- Water pipeline: 3.9 km
- Roads: 0.7 km.

Based on the comparative cost estimate provided in Appendix D, it is anticipated that Alternative F will have a comparative construction cost of about $59.1 million.

At closure and for the purposes of supporting ranking of the MWP alternatives, it was assumed that the dams would be breached, the water level would be lowered, and the area would be seeded. For comparative closure costs it was assumed that the water level in the MWP would be lowered and that about half the footprint of the MWP would be covered and seeded. The estimated comparative closure cost for the overburden material and seeding is about $2 million.

8.4 STEP 4: IMPACT EVALUATION AND ASSESSMENT PROCESS

8.4.1 ACCOUNTS, SUB-ACCOUNTS AND INDICATORS

Sub-accounts and indicators were chosen based on Project team experience with mine waste storage and assessments of alternatives for other mining projects using the methodology described in Section 4 and in accordance with the ECCC Guidelines (ECCC 2016). The Project Team included both Great Bear Resources staff and their consultants. During the preparation of the report, consultation with Indigenous

communities was undertaken and feedback / input was gathered that informed the report. This included the alternatives, accounts, sub-accounts, indicators, measurement parameters and weightings. A complete list of sub-accounts and indicators used to develop the multiple accounts ledger, including the rationale for their selection, is provided in Table 8-3. The characterization of the MWP Alternatives is summarized in Table 8-4.

8.4.2 VALUATING CRITERIA

Criteria used to calculate values for each of the indicators in the multiple accounts ledger are provided in Table 8-5.

8.5 STEP 5: VALUE-BASED DECISION PROCESS

A multiple accounts ledger was developed for the three alternatives (Alternatives A, B and F) considered through the MAA. Using the alternatives characterization (Table 8-4) and valuation criteria summarized in Table 8-5, values have been determined for all indicators, which are presented in Table 8-6.

In accordance with the ECCC Guidelines (ECCC 2016), weights have been applied to each account, sub-account and indicator, to reflect the relative importance of the criteria and as described in Section 4.5.3.

8.5.1 QUANTITATIVE ANALYSIS – BASE CASE

Using the values and weights provided in Table 8-5 and Table 8-6, respectively, the MAA was conducted for the base case scenario. The analysis of Environmental, Technical, Project Economics and Socio-economic indicators, and calculation of sub-account merit ratings is provided in Table 8-7 through Table 8-10. The analysis of Environmental, Technical, Project Economics, and Socio-economic sub-accounts, and calculation of account merit ratings, is provided in Table 8-11 through Table 8-14.

Overall results of the MAA base case scenario for the MWP, and calculation of alternative merit ratings, are provided in Table 8-15. The results are summarized as follows:

- Alternative B is the overall preferred alternative with a merit rating of 4.8 out of 6.0.
- Alternative A was the second preferred alternative with a merit ranking of 3.9 out of 6.0.
- Alternative F was the lowest ranking alternative with a merit ranking of 3.0 out of 6.0.

Alternative B was identified as the preferred alternative for the MWP.

8.6 STEP 6: SENSITIVITY ANALYSIS

A sensitivity analysis was carried out to evaluate the robustness of the analytical process and to determine the degree to which various options are influenced by the choice of weightings.

Four sensitivity analysis scenarios were given consideration, in addition to the base case (weighting shown in brackets):

- Base Case
- Case 1: All accounts weighted equally:
  - Environmental (6)
  - Technical (6)
  - Project Economics (6)
  - Socio-economic (6)
- Case 2: All accounts, sub-accounts and indicators weighted equally:

    - Accounts (6)
    - Sub-accounts (6)
    - Indicators (6)
- Case 3: Prioritize people and environment:
    - Environmental (6)
    - Technical (2)
    - Project Economics (1)
    - Socio-economic (6)
- Case 4: Prioritize water (weight of all criteria related to water received a maximum weight):
    - Changes to sub-accounts and indicators
        - Water resources (6)
        - Fisheries resources (6)
- Case 5: Project economics has no weight:
    - Environmental (6)
    - Technical (3)
    - Project Economics (0)
    - Socio-economic (3).

For all sensitivities Alternative B was found to be the preferred MWP location. The sensitivity analysis is presented in Table 8-16 and Figure 8-8.

Table 8-1: MWP Alternatives Pre-Screening

	Does the alternative require more excavation than storage space which is indicative of high capital costs? (yes / no)	Do the alternatives avoid overprinting other site facilities or industries such as quarries/ commercial aggregate operations? (yes/ no)	Do the alternatives avoid overprinting the preferred TMF potential expansion area, based on the TMF footprint in the Mine Water Pond Siting Study or preferred MRS and LGO (WSP 2023d)? (yes / no)	Do the alternatives avoid areas that could pose a safety risk to the public or works? (yes / no)
Alternative A	Yes	Yes	Yes	Yes
Alternative B	Yes	Yes	Yes	Yes
Alternative C	Yes	No	Yes	Yes
Alternative E	No	Yes	Yes	No
Alternative F	Yes	Yes	Yes	Yes
Alternative H	Yes	Yes	No	Yes

Table 8-2: Summary Table of Candidate MWP Alternatives

Alternative	MWP Construction Approach	MWP Operation Approach	MWP Closure Approach
Alternative A	Construction will include the development of a single containment cell for storage of contact water from the Project. Alternative A will be constructed prior to when there is insufficient contact water storage in the VMF. Construction of the MWP will occur during the operations phase of Project. Alternative A will require construction of six water retaining dams. To support construction of the MWP, additional roads will be required for site preparation and dam construction. A water pipeline will be constructed for water transfer associated with Alternative A.	Contact water will be transferred to the MWP and the roads developed during construction will be used during operations to support monitoring and on-going maintenance for the MWP dams and water pipeline.	Once the MWP is no longer required, the dams will be breached, and the water level will be lowered. The area will be seeded for vegetation and naturalized drainage will be restored to Gullrock Lake.
Alternative B	Construction of the Alternative B will be completed once there is insufficient water storage in the VMF, during the operations phase of the Project. Alternative B will consist of a two-cell water storage facility consisting of one dam. During construction of the MWP, additional roads will be required for site preparation and dam construction. A water pipeline will also be required to transfer water to and from the MWP.	Contact water will be transferred to the MWP and the roads developed during construction will be used during operations to support monitoring and on-going maintenance for the MWP dams and water pipeline.	Once the MWP is no longer required, the dams will be breached, the water level will be lowered, and the area will be seeded for vegetation. Once the dams are breached the naturalized drainage will be restored to Dixie Creek via Unnamed Watercourse 1.
Alternative F	Construction of Alternative F will be undertaken once the VMF has insufficient storage for the contact water, during the operations phase of the Project. Alternative F will consist of a single water storage cell which will require the construction of three dams. To support construction of Alternative F, roads will be developed for transportation of materials and the construction of the water transfer pipeline to Alternative F.	Contact water will be transferred to the MWP and the roads developed during construction will be used during operations to support monitoring and on-going maintenance for the MWP dams and water pipeline.	Once the MWP is no longer required, the dams will be breached, the water level will be lowered, and the area will be seeded for vegetation. Once the dams are breached the naturalized drainage will be restored to Dixie Creek via LP Central pit.

Table 8-3: MWP Accounts, Sub-Accounts and Indicators

Account	Subaccount	Subaccount Rationale	Indicator	Indicator Rationale
Environmental	Water Resources	Direct overprinting by the MWP to drainage channels or changes to the local flows and water levels can alter the localized hydrology in the area. These alterations may result in water quality that could harm aquatic species and other animals using the water and may potentially affect the traditional land use of the water.	Number of Subcatchment Areas Affected Including the TMF Subcatchment	Great Bear Resources prefers to minimize the total number of subcatchments affected by the Great Bear Project. It is therefore preferred to site the MWP within the catchment of the TMF to minimize effects on new subcatchments. Therefore, MWP alternatives located in the lower number of subcatchments including the TMF subcatchment are preferred.
			Storage Capacity	During the engineering design phases alternatives were developed with pond sizes ranging from 2 to 4 Mm^3. Alternatives with increased storage volumes are preferred to allow greater operational flexibility.
	Fisheries Resources	During the alternatives assessment, the MWP was sited to avoid large lakes and large rivers where possible. However, several of the alternatives that were evaluated would overprint waters frequented by fish. Overprinting of waters frequented by fish will result in a change to fish habitat that would require fish habitat offset in accordance with the *Fisheries Act* and the MDMER.	Loss of Fish Habitat (Waterbodies)	There are numerous waterbodies surrounding the Great Bear Project that are known to be frequented by fish. The MWP alternative locations have generally avoided large waterbodies, however, some of the alternatives would overprint smaller waterbodies (ponds / small lakes). The alternatives that overprint waterbodies would require that new fish habitat be constructed under the *Fisheries Act* to mitigate adverse impacts to fish and fish habitat. Alternatives that avoid or minimize overprinting waterbodies are preferred.
			Loss of Fish Habitat (Watercourses)	There are watercourses (intermittent, and/or permanently flowing) around the Great Bear Project. Baseline studies are currently in progress, and it is assumed that these creeks are fish bearing or are potentially frequented by fish and overprinting these watercourses would affect fish and fish habitat, which would require new offsetting habitat to be constructed under the *Fisheries Act*. Alternatives that avoid or minimize overprinting watercourses are preferred.
			Number of Watercourse Crossings	Haul roads and pipelines that cross watercourses have the potential to affect fish habitat by altering the watercourse embankments, channel and substrate characteristics. Vehicle traffic over crossings can further affect the quality of fish habitat through the deposition of fugitive dust or vehicular incidents. Alternatives that do not require roads or pipelines to cross watercourses are preferred.
	Atmospheric Emissions	Air and noise emissions resulting from construction and operation of the MWP could affect the ambient air and acoustic environments.	Noise Emissions	Construction and operation of the MWP will result in noise emissions that can increase ambient sound levels that could affect wildlife. MWP alternatives located further from the property boundary being preferred.
			GHG Emissions	Emissions from the Project may add to global GHG emissions and ultimately contribute to climate change. MWP alternatives that require less dam fill material will require fewer truckloads and trips to transport the dam fill material, reducing the potential GHG emissions. The number of trucks for each alternative were evaluated considering 1 haul truck could relocate about 14 Mt/year, for an assumed 1 year construction period. Alternatives, with a fewer number of trucks being required were considered preferred.
	Terrestrial Resources	Habitat will be lost from MWP overprinting of the land, although some habitat can be restored at closure. The Great Bear Project terrestrial ecosystems vary within the general area. Alternatives with a more compact MWP footprint would have less of an impact on the terrestrial ecosystem and were preferred.	MWP Footprint	The MWP will overprint the terrestrial ecosystems. The total footprint of the MWP is a good metric for estimating impacts to terrestrial ecosystems. In general, a smaller MWP footprint would have fewer effects on the terrestrial environment and is preferred.
			Haul / Access Road Corridors	MWP alternatives that are located further from the process plant increase the segregation of habitat areas and corridors used by wildlife. Road networks increase the likelihood of vehicle collisions with wildlife through and create physical barriers for wildlife. Alternatives that are located closer to the process plant with smaller roads lengths are preferred and assumed to reduce these effects.

Table 8-3: MWP Accounts, Sub-Accounts and Indicators

Account	Subaccount	Subaccount Rationale	Indicator	Indicator Rationale
Environmental	Species at Risk	Some species are sensitive or at risk of disappearing in Ontario or in Canada and have been afforded special protections. During Baseline studies SAR were identified in the Project Area. Alternatives that have greater potential to harm these species (wolverine and bat SAR) should be avoided.	Direct Loss of Wolverine Habitat	During baseline studies, wolverine or evidence of wolverine were observed on the Property, with wolverine sightings captured on trail cameras. Wolverine that disperse across the landscape could be negatively affected by the proposed Project. Therefore, the loss of wolverine habitat should be minimized. Alternatives that avoid the avoid potential wolverine habitat are preferred.
			Direct Loss of Caribou Habitat	The Project area is located in the Sydney Range for caribou which is federally and provincially regulated habitat for caribou. Provincial habitat mapping for Sydney Range has the property classified as Category 3 habitat. Category 3 areas are defined as having a high tolerance to alteration before the function is compromised. These areas indirectly support boreal caribou by maintaining (buffering) the overall predator refuge function within their range. They are comprised of currently young vegetation communities such as regenerating burn areas that are less than 40 years old. These areas are not generally occupied for long periods of time; however, boreal caribou may travel through them. Consistent with this Category 3 classification, baseline studies did not observe evidence of caribou on the Property. The loss of potential caribou habitat should be minimized with smaller MWP footprints, or footprints that avoid potential caribou habitat being preferred.
			Direct Loss of Avian SAR Habitat	During baseline studies a number of avian SAR were observed at the Property. Breeding habitat for avian SAR species should be avoided. The ecosites with confirmation of avian SAR habitat included marsh wetlands and shorelines, alternatives avoiding these areas are preferred.
			Direct Loss of Bat Foraging Habitat	The wetland, riparian and forested habitat in the Project area provides forage and maternity roosting habitat for SAR bats. The overprinting of these ecosites by the MWP will reduce / remove suitable habitat. The loss of SAR bat habitat should be minimized with alternatives that avoid bat habitat being preferred.
			Direct Loss of Maternity Roosting Habitat	
Technical	Design and Construction Factors	Engineering design factors for the MWP include some of the key contributions to the technical complexity of MWP alternatives. Alternatives that are less technically challenging are likely to be characterized as lower risk are generally preferred.	Storage to Dam Construction Fill Volume Ratio	Increasing the storage volume to dam construction fill volume ratio can increase the efficiency of the MWP. Further, alternatives with high storage volume to dam volume ratios are generally easier to construct and require less material to build and are preferred.
			Total Number of Independent Water Management Dams	MWP designs with fewer dams are preferred.
			Total Length of Water Management Dams	MWP designs with shorter total dam lengths are preferred.
			Complexity of Seepage Collection Pumping System	Seepage management complexity for the MWP was assumed to be proportional to the number of the seepage sump locations with fewer seepage sump locations are preferred.
	Technical Considerations	Great Bear Resources knows that safety is a primary concern when designing the MWP and as such, each alternative considered can be constructed to the minimum factor of safety. However, some technical factors have the potential to increase the risk or have a potential higher consequence of failure and should therefore be avoided.	Maximum MWP Dam Height	In general, it was assumed that there was a proportional increase in the potential consequence of failure with an increase in dam height. In the unlikely event of failure, taller facilities have greater potential energy to move materials. Shorter dam heights were therefore considered to incur less risk and are preferred.
			Dam Monitoring and Maintenance Requirements	Great Bear Resources will be required to monitor and maintain the MWP dams during both operations, closure and post-closure until such a time that the regulatory authority has deemed the site remediated and no further monitoring is required. Alternatives with a greater linear dam length were assumed to increase the safety risk and were assumed to require additional monitoring and potentially additional maintenance. MWP Alternatives with a shorter dam length were preferred.

Table 8-3: MWP Accounts, Sub-Accounts and Indicators

Account	Subaccount	Subaccount Rationale	Indicator	Indicator Rationale
Economics	Capital Costs	MWP's often require extensive dam construction, and earthworks or costly dewatering plans, as such, capital costs required for the MWP are a key consideration. Other capital costs may include but are not limited to: site clearing, infrastructure for water management and treatment, access roads, pipelines and seepage collection infrastructure.	Site Preparation and Dam Construction Costs	Site preparation and construction of the MWP dams can be a notable capital cost. Site preparation and dam construction costs can be minimized by alternatives that are contained by natural topography. Alternatives that have a smaller footprint and decreased dam construction are preferred from a capital cost perspective. MWP alternatives with a lower construction cost are preferred.
			Road Construction	During the construction phase, roads will need to be constructed to the MWP location. Alternatives located closer to the process plant, are assumed to have lower road construction costs and are preferred.
			Habitat Offset / Compensation Costs	Capital costs for construction of aquatic habitat offset / compensation features can be substantial. These features are normally required to be constructed early in the project life, generally as the construction impacts are implemented. Lower costs associated with habitat offset/compensation are preferred.
			Conveyance Costs (Pipeline)	The MWP will require supporting infrastructure for conveyance of tailings including but not limited to pipelines, conveyor, stacker and trucks. Alternatives with lower costs associated for conveyance of tailings being preferred.
			Seepage Collection Infrastructure Costs	Seepage collection infrastructure typically includes both the perimeter ditching around the MWP, as well as the seepage collection ponds and/or sump locations. The cost of the seepage collection infrastructure cannot be deferred to revenue and is entirely funded by Project capital. Alternatives that require less seepage collection infrastructure and have lower costs are therefore preferred.
	Closure Cost	Following cessation of operations, the MWP will be decommissioned and rehabilitated to a stable and more ecologically productive state, in accordance with regulatory requirements. Higher closure costs will increase the requirement for closure bonding associated with the MWP and Project and will ultimately affect overall project financial performance.	MWP Reclamation Costs	At closure, the MWP dam will be breached, and the water level will be lowered. A portion of the MWP footprint (assumed to be 50% for the purposes of this study) will be contoured and vegetated, where possible and in accordance with the Closure Plan requirements. Alternatives with lower reclamation costs are preferred.
			Road Reclamation	Roads constructed to support the MWP will be closed and reclaimed at closure. Alternatives with lower associated reclamation costs being preferred.
			Inspection / Maintenance / Operations / Monitoring Costs	Kinross will be required to monitor and maintain the MWP during operations and following closure until the Ministry of Energy and Mines has deemed that the Great Bear Project is remediated, and no further monitoring is required. Kinross expects the monitoring and maintenance requirements for the MWP to be proportional to the length of the MWP dams. Alternatives with shorter dam length are preferred from a post-closure cost perspective.
Socio-economic	Indigenous Land Use	Wild Rice Fields	Loss of wild rice fields	During consultation for the Project, wild rice fields were identified as being of interest to Indigenous communities. However, wild rice fields observed in the Project area have not been confirmed to be used by Indigenous Peoples. Alternatives that avoid wild rice fields are generally preferred.
		Moose Late Wintering Habitat	Loss of moose late wintering habitat	During consultation for the Project, moose were identified as being of special importance to Indigenous communities. In the Project area, moose use the habitat for both late wintering and foraging. Both habitat types were considered, with alternatives that avoid moose habitat being preferred.
		Moose Foraging Habitat	Loss of moose foraging habitat	
		Great Bear Resources recognizes that Indigenous engagement is an integral part of the process through the permitting / approval and design phases which are influenced by Indigenous values and Indigenous knowledge. Great Bear Resources continues to engage with Indigenous communities to better understand these values in order to design the Great Bear Project such that avoids or minimizes related effects to Indigenous Peoples.	Loss of Indigenous Land Uses	The lands around the Project may be used by Indigenous communities to support trapping, hunting and harvesting of traditional foods. MWP alternatives with larger terrestrial footprints will remove a greater footprint of land that may have been used for hunting and harvesting of traditional foods. Alternatives that affect less potential undisturbed areas that may Indigenous land uses including support fishing, hunting areas (moose) and potential plant (berry) harvesting areas are preferred.
	Potential Adverse Safety and Environmental Consequences	MWP alternatives that have the potential to have harmful consequences in the unlikely event of a release of water from the MWP.	Public Safety Hazard Potential (Runout)	Each alternative will be designed and construction to meet all appropriate factors of safety. That stated, some of the alternatives have a greater hazard potential in regard to the environment and public safety based in the unlikely event of a failure of the facility. Alternatives with a further runout distance to a named receptor (e.g., Dixie Creek) being preferred.
			Public Safety Hazard Potential (Dam Height)	Each alternative will be designed and construction to meet all appropriate factors of safety. That stated, some of the alternatives have a greater hazard potential in regard to the environment and public safety based in the unlikely event of a failure of the facility. Alternatives with higher dam heights are inferred to have a higher risk. Therefore, alternatives with lower maximum dam heights are preferred.
			Aesthetics	The maximum elevation of the MWP was assessed as being proportional to the visibility of the alternatives. Alternatives with a lower maximum elevation are preferred from an aesthetics perspective as surrounding terrain would conceal more of the MWP.

Table 8-4: MWP Alternative Characterization

Account	Indicator	Parameter	Unit	Alternative A	Alternative B	Alternative F
Environmental	Number of Subcatchment Areas Affected Including the TMF Subcatchment	Number of Subcatchments	#	2	1	2
	Storage Capacity	Pond Capacity	Mm^3	2.7	2.1	3.2
	Loss of Fish Habitat (Waterbodies)	Area of waterbodies overprinted	ha	0.3	7.5	0.3
	Loss of Fish Habitat (Watercourses)	Length of stream loss of potential fish habitat	km	0.29	0.18	1.75
	Number of Watercourse Crossings	Number of watercourse crossings	#	0	0	2
	Noise Emissions	Distance to property boundary	km	1.3	2.3	2.1
	GHG Emissions	Number of trucks	#	1	1	1
	MWP Footprint	MWP Footprint	ha	62.0	40.9	70.3
	Haul / Access Road Corridors	Length of roads	km	1.39	0.26	0.66
	Direct Loss of Wolverine Habitat	Loss of wolverine habitat	ha	22.3	19.7	6.1
	Direct Loss of Caribou Habitat	Loss of caribou habitat	ha	33.5	26.7	31.8
	Direct Loss of Avian SAR Habitat	Loss of avian SAR breeding habitat	ha	62.0	40.9	70.3
	Direct Loss of Bat Foraging Habitat	Loss of bat foraging habitat	ha	24.9	28.3	7.1
	Direct Loss of Maternity Roosting Habitat	Loss of bat maternity roosting habitat	ha	59.5	27.8	69.6
Technical	Storage to Dam Construction Fill Volume Ratio	Storage ratio	-	23.48	9.86	2.00
	Total Number of Independent Water Management Dams	Number of dams	#	6	1	3
	Total Length of Water Management Dams	Length of dams	m	1,000	750	1,650
	Complexity of Seepage Collection Pumping System	Number of sump locations	#	9	1	5
	Maximum MWP Dam Height	Maximum dam height	m	10.0	6.0	18.0
	Dam Monitoring and Maintenance Requirements	Area (Length times dam height) to be monitored	m^2	10,000	4,500	29,700
Economics	Site Preparation and Dam Construction Costs	Cost (millions)	$	$4.7	$4.1	$52.6
	Road Construction	Cost (millions)	$	$0.21	$0.04	$0.10
	Habitat Offset / Compensation Costs	Cost (millions)	$	$0.0	$3.0	$2.0
	Conveyance Costs (Pipeline)	Cost (millions)	$	$1.8	$0.4	$1.4
	Seepage Collection Infrastructure Costs	Cost (millions)	$	$5.1	$0.7	$3.0
	MWP Reclamation Costs	Cost (millions)	$	$1.7	$1.1	$1.9
	Road Reclamation Costs	Cost (millions)	$	$0.028	$0.005	$0.013
	Inspection / Maintenance / Operations / Monitoring Costs	Length of dam to inspect	m	1,000	750	1,650
Socio-economic	Wild Rice	Loss of wild rice fields	ha	0.0	7.2	0.0
	Moose Late Wintering Habitat	Loss of moose late wintering habitat	ha	59.5	33.4	70.1
	Moose Foraging Habitat	Loss of moose foraging habitat	ha	2.3	2.1	0.0
	Loss of Indigenous Land Uses	MWP footprint	ha	62	41	70
	Public Safety Hazard Potential (Runout)	Shortest distance to named receptor or LP Central pit	km	1.8	2.0	0.5
	Public Safety Hazard Potential (Dam Height)	Maximum MWP dam height	m	10.0	6.0	18.0
	Aesthetics	Maximum elevation of MWP	masl	400.0	389.0	370.0

Table 8-5: MWP Valuating Criteria

Account	Indicator	Parameter	Indicator Value					
			6 (Best)	5	4	3	2	1 (Worst)
Environmental	Number of Subcatchment Areas Affected Including the TMF Subcatchment	Number of Subcatchments	1	2	3	4	5	6
	Storage Capacity	Pond Capacity	>3.0 Mm^3	3.0 to 2.9 Mm^3	2.8 to 2.6 Mm^3	2.5 to 2.4 Mm^3	2.3 to 2.1 Mm^3	≤2.0 Mm^3
	Loss of Fish Habitat (Waterbodies)	Area of waterbodies overprinted	<1.0 ha	1.0 to 1.9 ha	2.0 to 2.9 ha	3.0 to 3.9 ha	4.0 to 4.9 ha	≥5.0 ha
	Loss of Fish Habitat (Watercourses)	Length of stream loss of potential fish habitat	<0.20 km	0.20 to 0.52 km	0.53 to 0.84 km	0.85 to 1.17 km	1.18 to 1.49 km	≥1.50 km
	Number of Watercourse Crossings	Number of watercourse crossings	0	1	2	3	4	5
	Noise Emissions	Distance to property boundary	>2.5 km	2.5 to 2.2 km	2.1 to 1.9 km	1.8 to 1.5 km	1.4 to 1.1 km	≤1.0 km
	GHG Emissions	Number of trucks	1	2	3	4	5	≥6
	MWP Footprint	MWP Footprint	<20.0 ha	20.0 to 29.9 ha	30.0 to 39.9 ha	40.0 to 49.9 ha	50.0 to 59.9 ha	≥60.0 ha
	Haul / Access Road Corridors	Length of roads	<0.50 km	0.50 to 0.62 km	0.63 to 0.74 km	0.75 to 0.87 km	0.88 to 0.99 km	≥1.00 km
	Direct Loss of Wolverine Habitat	Loss of wolverine habitat	<10.0 ha	10.0 to 12.9 ha	13.0 to 15.9 ha	16.0 to 18.9 ha	19.0 to 21.9 ha	≥22.0 ha
	Direct Loss of Caribou Habitat	Loss of caribou habitat	<28.0 ha	28.0 to 29.4 ha	29.5 to 30.9 ha	31.0 to 32.4 ha	32.5 to 33.9 ha	≥34.0 ha
	Direct Loss of Avian SAR Habitat	Loss of avian SAR breeding habitat	<45.0 ha	45.0 to 49.9 ha	50.0 to 54.9 ha	55.0 to 59.9 ha	60.0 to 64.9 ha	≥65.0 ha
	Direct Loss of Bat Foraging Habitat	Loss of bat foraging habitat	<8.0 ha	8.0 to 12.9 ha	13.0 to 17.9 ha	18.0 to 22.9 ha	23.0 to 27.9 ha	≥28.0 ha
	Direct Loss of Maternity Roosting Habitat	Loss of bat maternity roosting habitat	<30.0 ha	30.0 to 39.9 ha	40.0 to 49.9 ha	50.0 to 59.9 ha	60.0 to 69.9 ha	≥70.0 ha
Technical	Storage to Dam Construction Fill Volume Ratio	Storage ratio	>10.00	10.00 to 7.76	7.75 to 5.51	5.50 to 3.26	3.25 to 1.01	≤1.00
	Total Number of Independent Water Management Dams	Number of dams	1	2	3	4	5	6
	Total Length of Water Management Dams	Length of dams	<800 m	800 to 974 m	975 to 1,149 m	1,150 to 1,324 m	1,325 to 1,499 m	≥1,500 m
	Complexity of Seepage Collection Pumping System	Number of sump locations	≤2	3	4	5	6	≥7
	Maximum MWP Dam Height	Maximum dam height	<10.0 m	10.0 to 11.2 m	11.3 to 12.4 m	12.5 to 13.7 m	13.8 to 14.9 m	≥15.0 m
	Dam Monitoring and Maintenance Requirements	Area (Length times dam height) to be monitored	<5,000 m^2	5,000 to 9,999 m^2	10,000 to 14,999 m^2	15,000 to 19,999 m^2	20,000 to 24,999 m^2	≥25,000 m^2
Economics	Site Preparation Costs	Cost (millions)	<$5.0	$5.0 to $16.2	$16.3 to $27.4	$27.5 to $38.7	$38.8 to $49.9	≥$50.0
	Road Construction	Cost (millions)	<$0.10	$0.10 to $0.32	$0.33 to $0.54	$0.55 to $0.77	$0.78 to $0.99	≥$1.00
	Habitat Offset / Compensation Costs	Cost (millions)	<$0.1	$0.1 to $0.7	$0.8 to $1.5	$1.6 to $2.2	$2.3 to $2.9	≥$3.0
	Conveyance Costs (Pipeline)	Cost (millions)	<$0.1	$0.1 to $0.7	$0.8 to $1.5	$1.6 to $2.2	$2.3 to $2.9	≥$3.0
	Seepage Collection Infrastructure Costs	Cost (millions)	<$1.0	$1.0 to $1.9	$2.0 to $2.9	$3.0 to $3.9	$4.0 to $4.9	≥$5.0
	MWP Reclamation Costs	Cost (millions)	<$0.1	$0.1 to $0.7	$0.8 to $1.5	$1.6 to $2.2	$2.3 to $2.9	≥$3.0
	Road Reclamation Costs	Cost (millions)	<$0.010	$0.010 to $0.013	$0.014 to $0.017	$0.018 to $0.020	$0.021 to $0.024	≥$0.025
	Inspection / Maintenance / Operations / Monitoring Costs	Length of dam to inspect	<800 m	800 to 974 m	975 to 1,149 m	1,150 to 1,324 m	1,325 to 1,499 m	≥1,500 m
Socio-economic	Wild Rice	Loss of wild rice fields	<1.0 ha	1.0 to 1.9 ha	2.0 to 2.9 ha	3.0 to 3.9 ha	4.0 to 4.9 ha	≥5.0 ha
	Moose Late Wintering Habitat	Loss of moose late wintering habitat	<40.0 ha	40.0 to 47.4 ha	47.5 to 54.9 ha	55.0 to 62.4 ha	62.5 to 69.9 ha	≥70.0 ha
	Moose Foraging Habitat	Loss of moose foraging habitat	<1.0 ha	1.0 to 1.4 ha	1.5 to 1.9 ha	2.0 to 2.4 ha	2.5 to 2.9 ha	≥3.0 ha
	Loss of Indigenous Land Uses	MWP footprint	<45 ha	45 to 50 ha	51 to 57 ha	58 to 63 ha	64 to 69 ha	≥70 ha
	Public Safety Hazard Potential (Runout)	Shortest distance to named receptor or LP Central pit	>1.9 km	1.9 to 1.6 km	1.5 to 1.2 km	1.1 to 0.7 km	0.6 to 0.3 km	≤0.2 km
	Public Safety Hazard Potential (Dam Height)	Maximum MWP dam height	<5.0 m	5.0 to 7.4 m	7.5 to 9.9 m	10.0 to 12.4 m	12.5 to 14.9 m	≥15.0 m
	Aesthetics	Maximum elevation of MWP	<375.0 masl	375.0 to 381.2 masl	381.3 to 387.4 masl	387.5 to 393.7 masl	393.8 to 399.9 masl	≥400.0 masl

Table 8-6: MWP Weights and Scores for Multiple Accounts Analysis

Account	Weight	Subaccount	Weight	Indicator	Weight	Alternative A	Alternative B	Alternative F
Environmental	6	Water Resources	6	Number of Subcatchment Areas Affected Including the TMF Subcatchment	5	5	6	5
				Storage Capacity	6	4	2	6
		Fisheries Resources	6	Loss of Fish Habitat (Waterbodies)	6	6	1	6
				Loss of Fish Habitat (Watercourses)	5	5	6	1
				Number of Watercourse Crossings	2	6	6	4
		Atmospheric Emissions	2	Noise Emissions	1	2	5	4
				GHG Emissions	1	6	6	6
		Terrestrial Resources	3	MWP Footprint	5	1	4	1
				Haul / Access Road Corridors	2	1	6	4
		Species at Risk	3	Direct Loss of Wolverine Habitat	4	1	2	6
				Direct Loss of Caribou Habitat	3	2	6	3
				Direct Loss of Avian SAR Habitat	2	2	6	1
				Direct Loss of Bat Foraging Habitat	2	2	1	6
				Direct Loss of Maternity Roosting Habitat	2	3	6	2
Technical	3	Design and Construction Factors	6	Storage to Dam Construction Fill Volume Ratio	6	6	5	2
				Total Number of Independent Water Management Dams	2	1	6	4
				Total Length of Water Management Dams	4	4	6	1
				Complexity of Seepage Collection Pumping System	2	1	6	3
		Technical Considerations	6	Maximum MWP Dam Height	6	5	6	1
				Dam Monitoring and Maintenance Requirements	2	4	6	1

Table 8-6: MWP Weights and Scores for Multiple Accounts Analysis

Account	Weight	Subaccount	Weight	Indicator	Weight	Alternative A	Alternative B	Alternative F
Economics	1.5	Capital Costs	6	Site Preparation Costs	6	6	6	1
				Road Construction	2	5	6	5
				Habitat Offset/Compensation Costs	4	6	1	3
				Conveyance Costs (Pipeline)	3	3	5	4
				Seepage Collection Infrastructure Costs	2	1	6	3
		Closure Cost	5	MWP Reclamation Costs	3	3	4	3
				Road Reclamation Costs	2	1	6	5
				Inspection / Maintenance / Operations / Monitoring Costs	3	4	6	1
Socio-economic	3	Indigenous Land Use	4	Loss of wild rice fields	2	6	1	6
				Loss of moose late wintering habitat	3	3	6	1
				Loss of moose foraging habitat	3	3	3	6
				Loss of Indigenous Land Uses	4	3	6	1
		Public Safety Hazard Potential (Runout)	6	Shortest distance to named receptor or LP Central pit	6	5	6	2
		Public Safety Hazard Potential (Dam Height)	6	Maximum MWP dam height	6	3	5	1
		Operational Impact (Aesthetics)	1	Aesthetics	1	1	3	6

Table 8-7: MWP Environment Indicators

eSub-Account	Indicator	Weight	Alternative A		Alternative B		Alternative F	
			Value	Score	Value	Score	Value	Score
Water Resources	Number of Subcatchment Areas Affected Including the TMF Subcatchment	5	5	25	6	30	5	25
	Storage Capacity	6	4	24	2	12	6	36
	Sub Account Merit Score (S{S x W})		49		42		61	
	Sub Account Merit Rating (Rs = S{S x W}/SW)		*4.5*		*3.8*		*5.5*	
Fisheries Resources	Loss of Fish Habitat (Waterbodies)	6	6	36	1	6	6	36
	Loss of Fish Habitat (Watercourses)	5	5	25	6	30	1	5
	Number of Watercourse Crossings	2	6	12	6	12	4	8
	Sub Account Merit Score (S{S x W})		73		48		49	
	Sub Account Merit Rating (Rs = S{S x W}/SW)		*5.6*		*3.7*		*3.8*	
Atmospheric Emissions	Noise Emissions	1	2	2	5	5	4	4
	GHG Emissions	1	6	6	6	6	6	6
	Sub Account Merit Score (S{S x W})		8		11		10	
	Sub Account Merit Rating (Rs = S{S x W}/SW)		*4.0*		*5.5*		*5.0*	
Terrestrial Resources	MWP Footprint	5	1	5	4	20	1	5
	Haul / Access Road Corridors	2	1	2	6	12	4	8
	Sub Account Merit Score (S{S x W})		7		32		13	
	Sub Account Merit Rating (Rs = S{S x W}/SW)		*1.0*		*4.6*		*1.9*	
Species at Risk	Direct Loss of Wolverine Habitat	4	1	4	2	8	6	24
	Direct Loss of Caribou Habitat	3	2	6	6	18	3	9
	Direct Loss of Avian SAR Habitat	2	2	4	6	12	1	2
	Direct Loss of Bat Foraging Habitat	2	2	4	1	2	6	12
	Direct Loss of Maternity Roosting Habitat	2	3	6	6	12	2	4
	Sub Account Merit Score (S{S x W})		24		52		51	
	Sub Account Merit Rating (Rs = S{S x W}/SW)		*1.8*		*4.0*		*3.9*	

Table 8-8: MWP Technical Indicators

Sub-Account	Indicator	Weight	Alternative A		Alternative B		Alternative F	
			Value	Score	Value	Score	Value	Score
Design and Construction Factors	Storage to Dam Construction Fill Volume Ratio	6	6	36	5	30	2	12
	Total Number of Independent Water Management Dams	2	1	2	6	12	4	8
	Total Length of Water Management Dams	4	4	16	6	24	1	4
	Complexity of Seepage Collection Pumping System	2	1	2	6	12	3	6
	Sub Account Merit Score (S{S x W})		56		78		30	
	Sub Account Merit Rating (Rs = S{S x W}/SW)		*4.0*		*5.6*		*2.1*	
Technical Considerations	Maximum MWP Dam Height	6	5	30	6	36	1	6
	Dam Monitoring and Maintenance Requirements	2	4	8	6	12	1	2
	Sub Account Merit Score (S{S x W})		38		48		8	
	Sub Account Merit Rating (Rs = S{S x W}/SW)		*4.8*		*6.0*		*1.0*	

Table 8-9: MWP Project Economic Indicators

Sub-Account	Indicator	Weight	Alternative A		Alternative B		Alternative F	
			Value	Score	Value	Score	Value	Score
Capital Costs	Site Preparation and Dam Construction Costs	6	6	36	6	36	1	6
	Road Construction	2	5	10	6	12	5	10
	Habitat Offset / Compensation Costs	4	6	24	1	4	3	12
	Conveyance Costs (Pipeline)	3	3	9	5	15	4	12
	Seepage Collection Infrastructure Costs	2	1	2	6	12	3	6
	Sub Account Merit Score (S{S x W})		81		79		46	
	Sub Account Merit Rating (Rs = S{S x W}/SW)		*4.8*		*4.6*		*2.7*	
Closure Cost	MWP Reclamation Costs	3	3	9	4	12	3	9
	Road Reclamation Costs	2	1	2	6	12	5	10
	Inspection / Maintenance / Operations / Monitoring Costs	3	4	12	6	18	1	3
	Sub Account Merit Score (S{S x W})		23		42		22	
	Sub Account Merit Rating (Rs = S{S x W}/SW)		*2.9*		*5.3*		*2.8*	

Table 8-10: MWP Socio-economic Indicators

Sub-Account	Indicator	Weight	Alternative A		Alternative B		Alternative F	
			Value	Score	Value	Score	Value	Score
Indigenous Land Use	Wild Rice	2	6	12	1	2	6	12
	Moose Late Wintering Habitat	3	3	9	6	18	1	3
	Moose Foraging Habitat	3	3	9	3	9	6	18
	Loss of Indigenous Land Uses	4	3	12	6	24	1	4
	Sub Account Merit Score (S{S x W})		42		53		37	
	Sub Account Merit Rating (Rs = S{S x W}/SW)		*3.5*		*4.4*		*3.1*	
Potential Adverse Safety and Environmental Consequences	Shortest distance to named receptor or LP Central pit	6	5	30	6	36	2	12
	Maximum MWP dam height	6	3	18	5	30	1	6
	Aesthetics	1	1	1	3	3	6	6
	Sub Account Merit Score (S{S x W})		49		69		24	
	Sub Account Merit Rating (Rs = S{S x W}/SW)		*3.8*		*5.3*		*1.8*	

Table 8-11: MWP Environment Sub-Account Analysis

Sub-Account	Weight	Alternative A		Alternative B		Alternative F	
		Rating	Score	Rating	Score	Rating	Score
Water Resources	6	4.5	26.7	3.8	22.9	5.5	33.3
Fisheries Resources	6	5.6	33.7	3.7	22.2	3.8	22.6
Atmospheric Emissions	2	4.0	8.0	5.5	11.0	5.0	10.0
Terrestrial Resources	3	1.0	3.0	4.6	13.7	1.9	5.6
Species at Risk	3	1.8	5.5	4.0	12.0	3.9	11.8
Account Merit Score		77.0		81.8		83.2	
Account Merit Rating		*3.8*		*4.1*		*4.2*	

Table 8-12: MWP Technical Sub-Account Analysis

Sub-Account	Weight	Alternative A		Alternative B		Alternative F	
		Rating	Score	Rating	Score	Rating	Score
Design and Construction Factors	6	4.0	24.0	5.6	33.4	2.1	12.9
Safety Factors	6	4.8	28.5	6.0	36.0	1.0	6.0
Account Merit Score		52.5		69.4		18.9	
Account Merit Rating		*4.4*		*5.8*		*1.6*	

Table 8-13: MWP Project Economics Sub-Account Analysis

Sub-Account	Weight	Alternative A		Alternative B		Alternative F	
		Rating	Score	Rating	Score	Rating	Score
Capital Costs	6	4.8	28.6	4.6	27.9	2.7	16.2
Closure Cost	5	2.9	14.4	5.3	26.3	2.8	13.8
Account Merit Score		43.0		54.1		30.0	
Account Merit Rating		*3.9*		*4.9*		*2.7*	

Table 8-14: MWP Socio-economic Sub-Account Analysis

Sub-Account	Weight	Alternative A		Alternative B		Alternative F	
		Rating	Score	Rating	Score	Rating	Score
Indigenous Land Use	4	3.5	14.0	4.4	17.7	3.1	12.3
Potential Adverse Safety and Environmental Consequences	6	3.8	22.6	5.3	31.8	1.8	11.1
Account Merit Score		36.6		49.5		23.4	
Account Merit Rating		*3.7*		*5.0*		*2.3*	

Table 8-15: MWP Multiple Accounts Analysis Summary

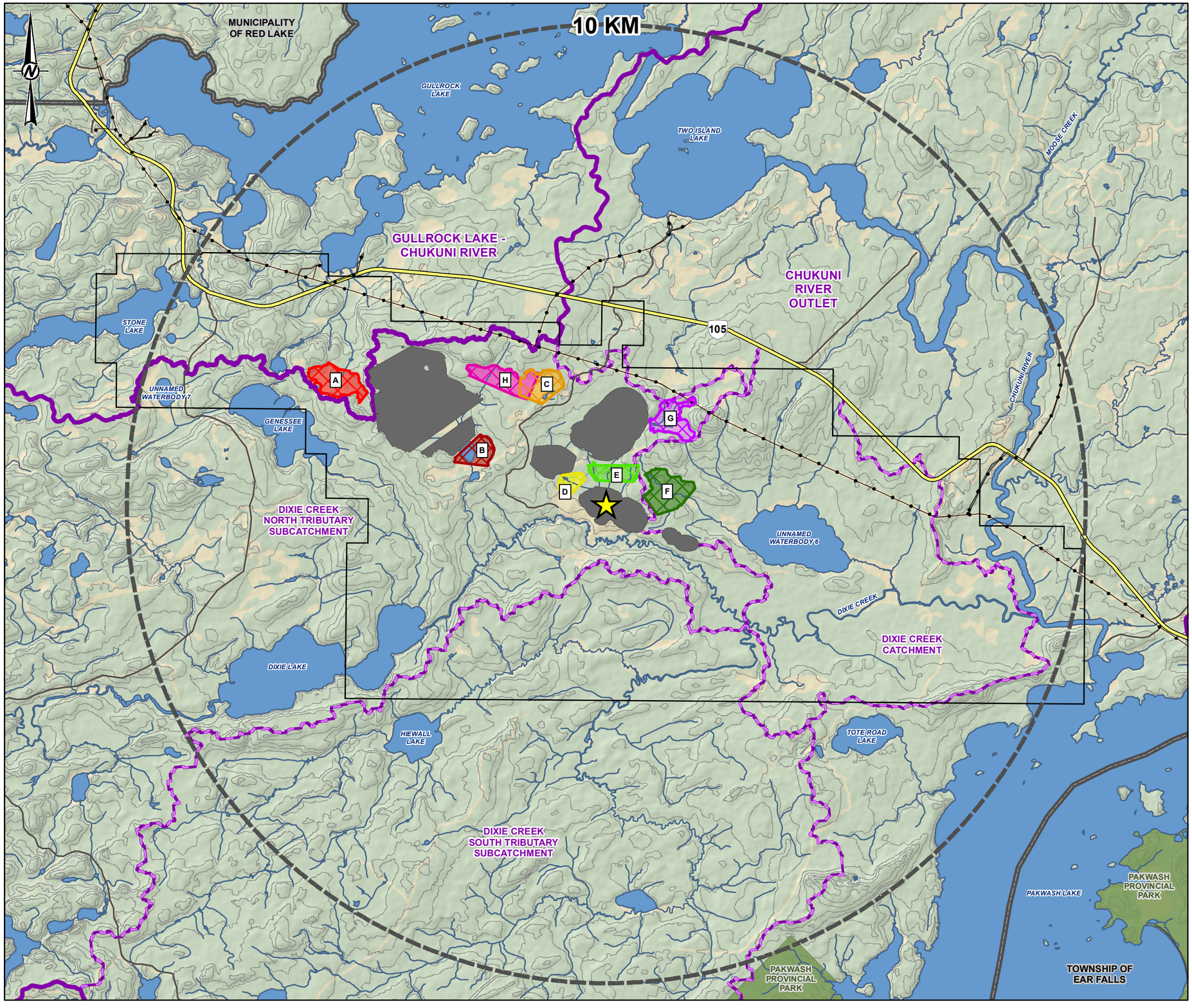
Account	Weight	Alternative A		Alternative B		Alternative F	
		Rating	Score	Rating	Score	Rating	Score
Environment	6	3.8	23.1	4.1	24.5	4.2	25.0
Technical	3	4.4	13.1	5.8	17.4	1.6	4.7
Project Economics	1.5	3.9	5.9	4.9	7.4	2.7	4.1
Socio-economic	3	3.7	11.0	5.0	14.9	2.3	7.0
Alternative Merit Score		53.1		64.1		40.8	
Alternative Merit Rating		*3.9*		*4.8*		*3.0*	

Table 8-16: MWP Sensitivity Analysis

	Alternative A	Alternative B	Alternative F
Base Case	3.9	**4.8**	3.0
Case 1	3.9	**4.9**	2.7
Case 2	3.5	**5.0**	3.0
Case 3	3.8	**4.7**	3.0
Case 4	3.9	**4.9**	3.0
Case 5	3.9	**4.7**	3.1

Notes:

***Bold** indicates preferred Alternative*



LEGEND

- APPROXIMATE OPEN PIT CENTROID
- KEY MINE FEATURE (OPEN PIT, TAILINGS MANAGEMENT FACILITY, MINE ROCK STOCKPILE AND LOW GRADE ORE STOCKPLE)
- OPEN PIT CENTROID BUFFER (LABELED ON MAP)
- PROPERTY BOUNDARY
- PROVINCIAL PARK
- EXISTING TRANSMISSION LINE
- HIGHWAY
- LOCAL ROAD
- LOWER TIER MUNICIPAL BOUNDARY
- WATERCOURSE
- WATERBODY
- CONTOURS (10 M INTERVAL)
- QUATERNARY CATCHMENT
- DIXIE CREEK SUBCATCHMENT

MINE WATER POND ALTERNATIVES

- ALTERNATIVE A
- ALTERNATIVE B
- ALTERNATIVE C
- ALTERNATIVE D
- ALTERNATIVE E
- ALTERNATIVE F
- ALTERNATIVE G
- ALTERNATIVE H

0 1 2 4
1:80,000 KILOMETRES

NOTE(S)
1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)
1. CONTAINS INFORMATION LICENSED UNDER THE OPEN GOVERNMENT LICENCE - ONTARIO
2. WATERCOURSES AND WATERBODY ACQUIRED FROM LAND INFORMATION ONTARIO (MNRF) AND MODIFIED TO MATCH AERIAL IMAGERY AND LIDAR.
3. ROADS INFORMATION PROVIDED BY GREAT BEAR RESOURCES, AUGUST 2022.
4. PROPERTY BOUNDARY PROVIDED BY GREAT BEAR RESOURCES, AUGUST 2024.
5. COORDINATE SYSTEM: NAD 1983 UTM ZONE 15N

CLIENT
GREAT BEAR RESOURCES

PROJECT
GREAT BEAR PROJECT

TITLE
MINE WATER POND ALTERNATIVE SITE LOCATIONS

CONSULTANT
wsp

YYYY-MM-DD	2025-07-24
DESIGNED	----
PREPARED	MD
REVIEWED	HL
APPROVED	DR

PROJECT NO.	CONTROL	REV.	FIGURE
CA0031271	0001	A	8-1

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

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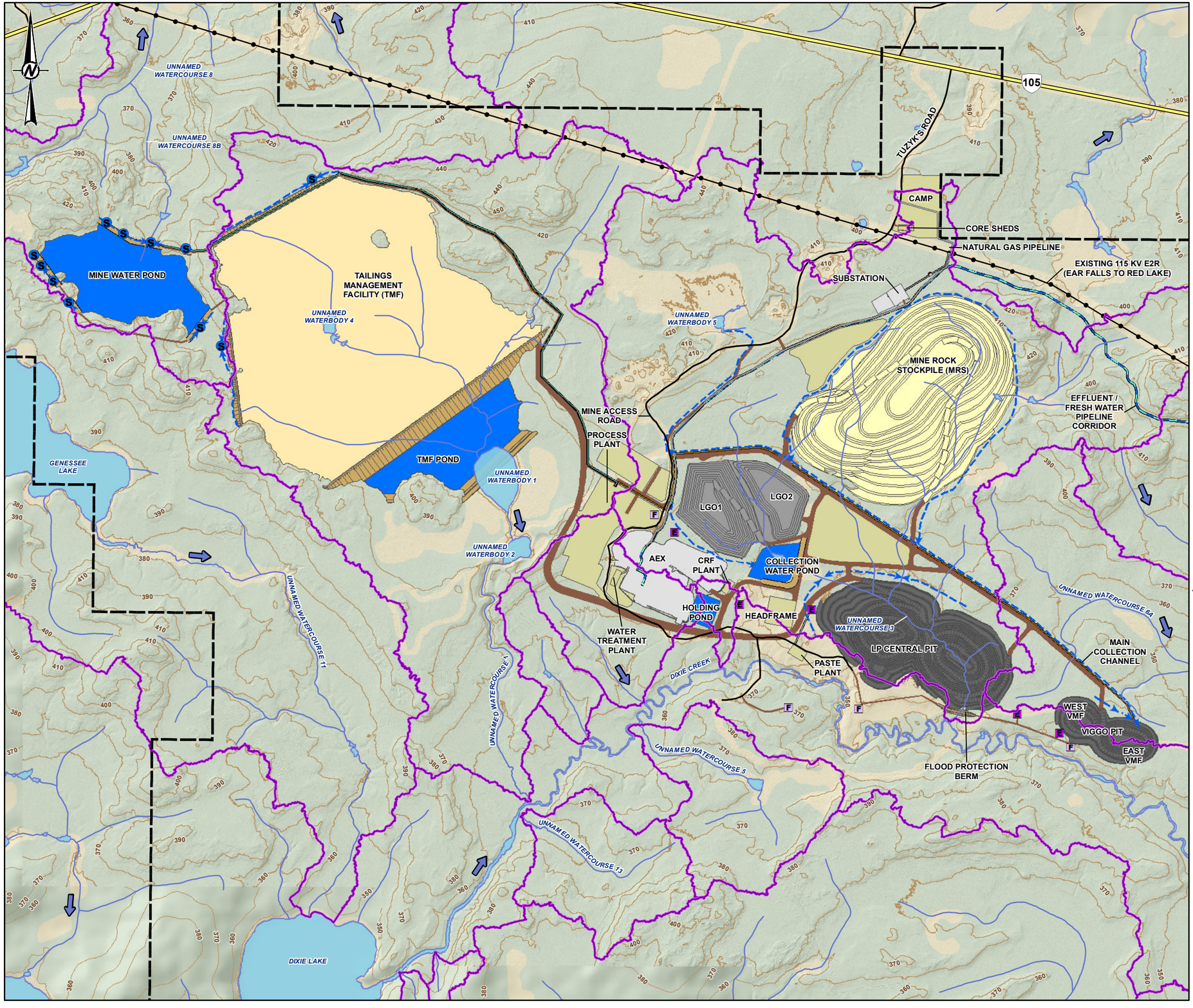

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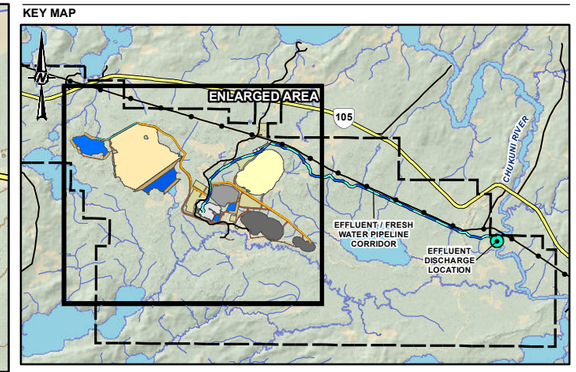

SCALE 1:200,000

LEGEND

- PROPERTY BOUNDARY
- HIGHWAY (INCLUDING NATURAL GAS PIPELINE)
- LOCAL ROAD
- EXISTING TRANSMISSION LINE
- LOCAL SUBCATCHMENT
- WATERCOURSE
- WATERBODY
- CONTOURS (10 M INTERVAL)
- FLOW DIRECTION

PROPOSED MINE FEATURE

- OPEN PIT
- MINE ROCK STOCKPILE (MRS)
- LOW GRADE ORE STOCKPILE (LGO)
- TAILINGS MANAGEMENT FACILITY (TMF)
- SUMP
- COLLECTION DITCH
- MINE FACILITIES / INFRASTRUCTURE
- DAM
- POND
- ROAD
- ADVANCED EXPLORATION SITE (AEX)
- EXHAUST VENT RAISE
- FRESH AIR VENT RAISE
- TRANSMISSION LINE
- RECLAIM PIPELINE
- TAILINGS PIPELINE
- PASTE PLANT PIPELINE
- EFFLUENT / FRESH WATER PIPELINE CORRIDOR
- EFFLUENT DISCHARGE LOCATION

0 0.25 0.5 1

1:28,000 KILOMETRES

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE
2. VMF: VIGGO MANAGEMENT FACILITY

REFERENCE(S)

1. CONTAINS INFORMATION LICENSED UNDER THE OPEN GOVERNMENT LICENCE - ONTARIO
2. CONTOURS ACQUIRED FROM 2022 LIDAR SURVEY.
3. PROPERTY BOUNDARY PROVIDED BY GREAT BEAR RESOURCES, AUGUST 2024.
4. ROADS INFORMATION PROVIDED BY GREAT BEAR RESOURCES, AUGUST 2022.
5. SITE PLAN BASED ON INFORMATION PROVIDED BY GREAT BEAR RESOURCES, DECEMBER 2024 / JUNE 2025.
6. SUBCATCHMENT BOUNDARIES DELINEATED USING 2022 LIDAR AND THE ONTARIO FLOW ASSESSMENT TOOL (MNRF).
7. COORDINATE SYSTEM: NAD 1983 UTM ZONE 15N

CLIENT
GREAT BEAR RESOURCES

PROJECT
GREAT BEAR PROJECT

TITLE
MINE WATER POND ALTERNATIVE A CONFIGURATION

CONSULTANT

YYYY-MM-DD	2025-07-07
DESIGNED	----
PREPARED	MD
REVIEWED	HL
APPROVED	DR

PROJECT NO.	CONTROL	REV.	FIGURE
CA0031271	0001	A	8-2

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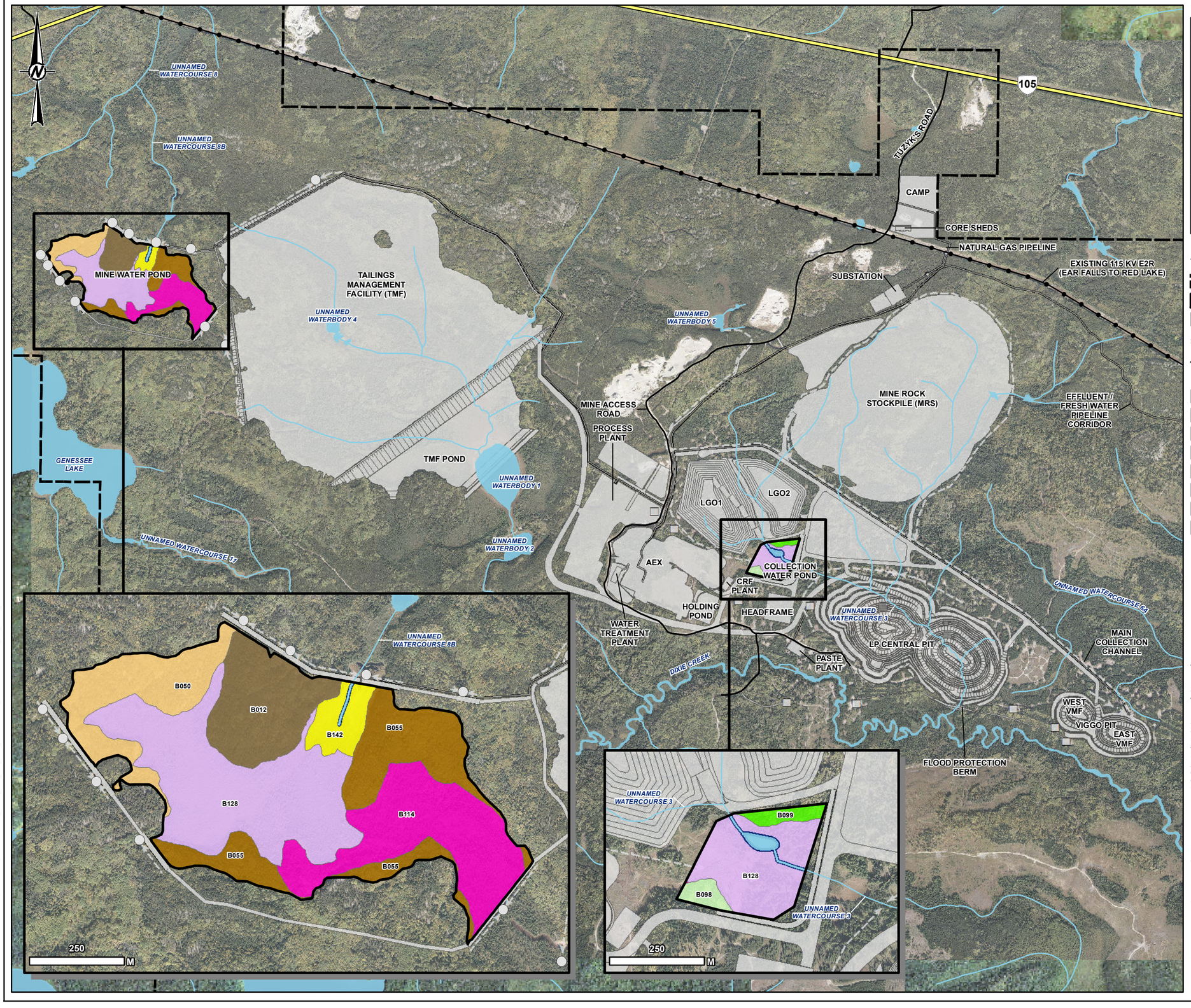

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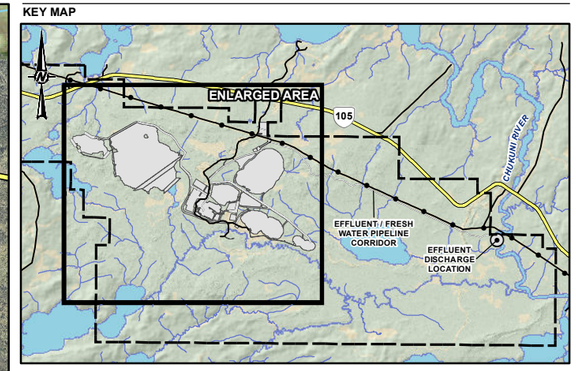

SCALE 1:200,000

LEGEND

- PROPERTY BOUNDARY
- PROPOSED MINE WATER POND
- OTHER PROPOSED MINE FEATURE
- HIGHWAY (INCLUDING NATURAL GAS PIPELINE)
- LOCAL ROAD
- EXISTING TRANSMISSION LINE
- WATERCOURSE
- WATERBODY
- IMPACTED WATERCOURSE
- IMPACTED WATERBODY

IMPACTED VEGETATION COMMUNITY

- B012: *VERY SHALLOW, DRY TO FRESH: PINE - BLACK SPRUCE CONIFER*
- B050: *DRY TO FRESH, COARSE: PINE - BLACK SPRUCE CONIFER*
- B055: *DRY TO FRESH, COARSE: ASPEN - BIRCH HARDWOOD*
- B098: *FRESH, SILTY TO FINE LOAMY: JACK PINE - BLACK SPRUCE DOMINATED*
- B099: *FRESH, SILTY TO FINE LOAMY: PINE - BLACK SPRUCE CONIFER*
- B114: *MOIST, FINE: PINE - BLACK SPRUCE CONIFER*
- B128: *ORGANIC INTERMEDIATE CONIFER SWAMP*
- B142: *MINERAL MEADOW MARSH*

0 0.25 0.5 1
1:28,000 KILOMETRES

NOTE(S)
1. ALL LOCATIONS ARE APPROXIMATE
2. VMF: VIGGO MANAGEMENT FACILITY

REFERENCE(S)
1. CONTAINS INFORMATION LICENSED UNDER THE OPEN GOVERNMENT LICENCE - ONTARIO
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5. SITE PLAN BASED ON INFORMATION PROVIDED BY GREAT BEAR RESOURCES, DECEMBER 2024 / JUNE 2025.
6. COORDINATE SYSTEM: NAD 1983 UTM ZONE 15N

CLIENT
GREAT BEAR RESOURCES

PROJECT
GREAT BEAR PROJECT

TITLE
MINE WATER POND ALTERNATIVE A VEGETATION COMMUNITIES AND FISHERIES RESOURCES

CONSULTANT

wsp

YYYY-MM-DD	2025-07-08
DESIGNED	----
PREPARED	MD
REVIEWED	HL
APPROVED	DR

PROJECT NO.	CONTROL	REV.	FIGURE
CA0031271	0001	A	8-3

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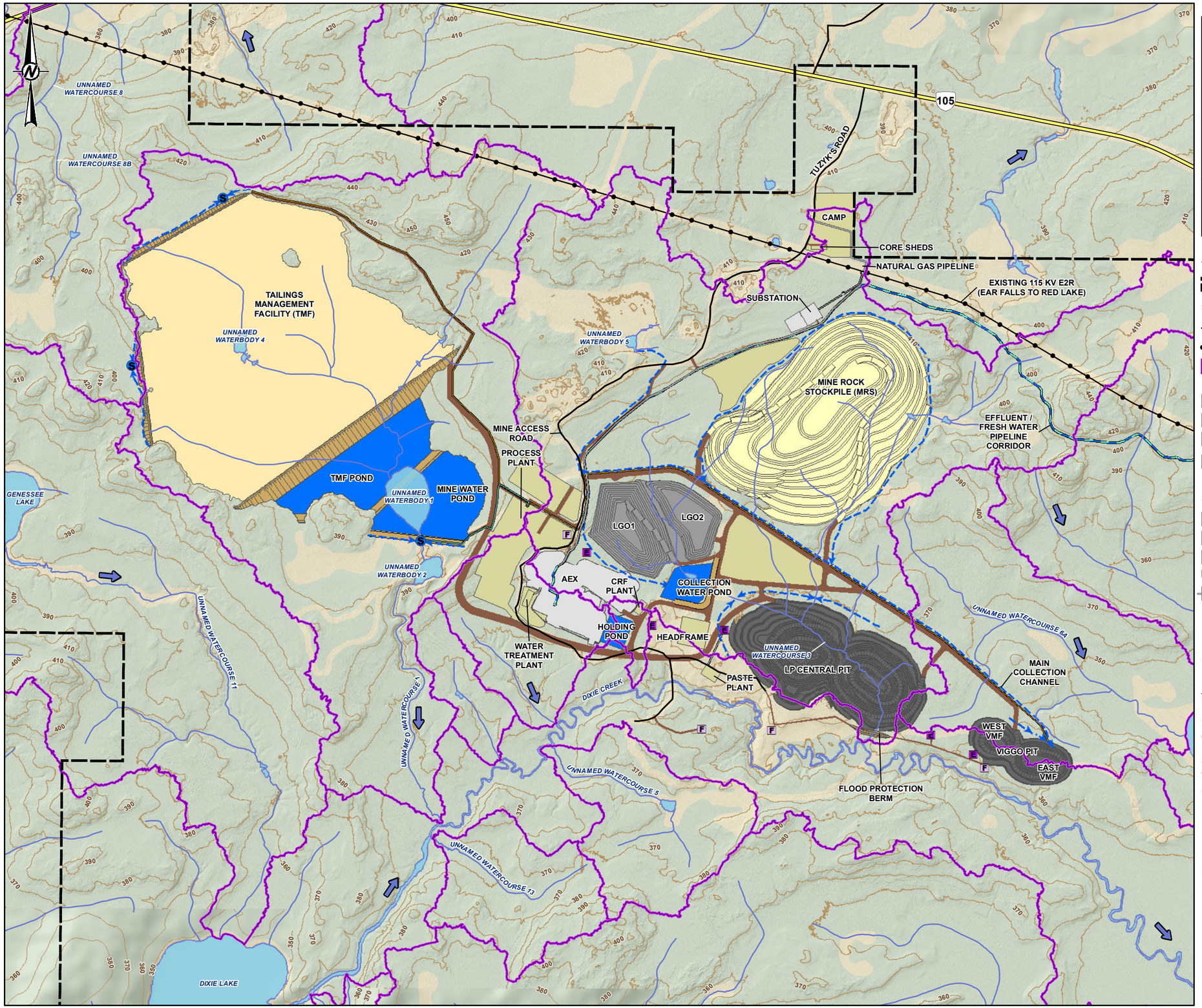

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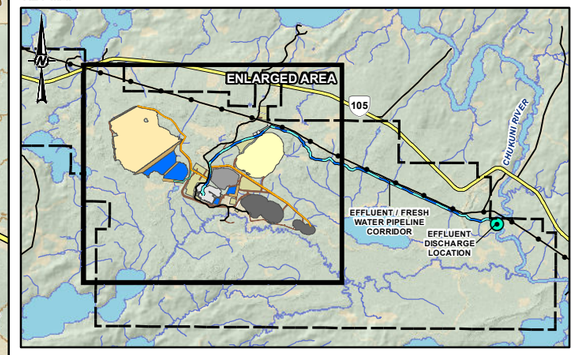

SCALE 1:200,000

LEGEND

- PROPERTY BOUNDARY
- HIGHWAY (INCLUDING NATURAL GAS PIPELINE)
- LOCAL ROAD
- EXISTING TRANSMISSION LINE
- LOCAL SUBCATCHMENT
- WATERCOURSE
- WATERBODY
- CONTOURS (10 M INTERVAL)
- FLOW DIRECTION

PROPOSED MINE FEATURE

- OPEN PIT
- MINE ROCK STOCKPILE (MRS)
- LOW GRADE ORE STOCKPILE (LGO)
- TAILINGS MANAGEMENT FACILITY (TMF)
- SUMP
- COLLECTION DITCH
- MINE FACILITIES / INFRASTRUCTURE
- DAM
- POND
- ROAD
- ADVANCED EXPLORATION SITE (AEX)
- EXHAUST VENT RAISE
- FRESH AIR VENT RAISE
- TRANSMISSION LINE
- RECLAIM PIPELINE
- TAILINGS PIPELINE
- PASTE PLANT PIPELINE
- EFFLUENT / FRESH WATER PIPELINE CORRIDOR
- EFFLUENT DISCHARGE LOCATION

0 0.25 0.5 1

1:28,000 KILOMETRES

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE
2. VMF: VIGGO MANAGEMENT FACILITY

REFERENCE(S)

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7. COORDINATE SYSTEM: NAD 1983 UTM ZONE 15N

CLIENT
GREAT BEAR RESOURCES

PROJECT
GREAT BEAR PROJECT

TITLE
MINE WATER POND ALTERNATIVE B CONFIGURATION

CONSULTANT
wsp

YYYY-MM-DD	2025-07-07
DESIGNED	----
PREPARED	MD
REVIEWED	HL
APPROVED	DR

PROJECT NO.	CONTROL	REV.	FIGURE
CA0031271	0001	A	8-4

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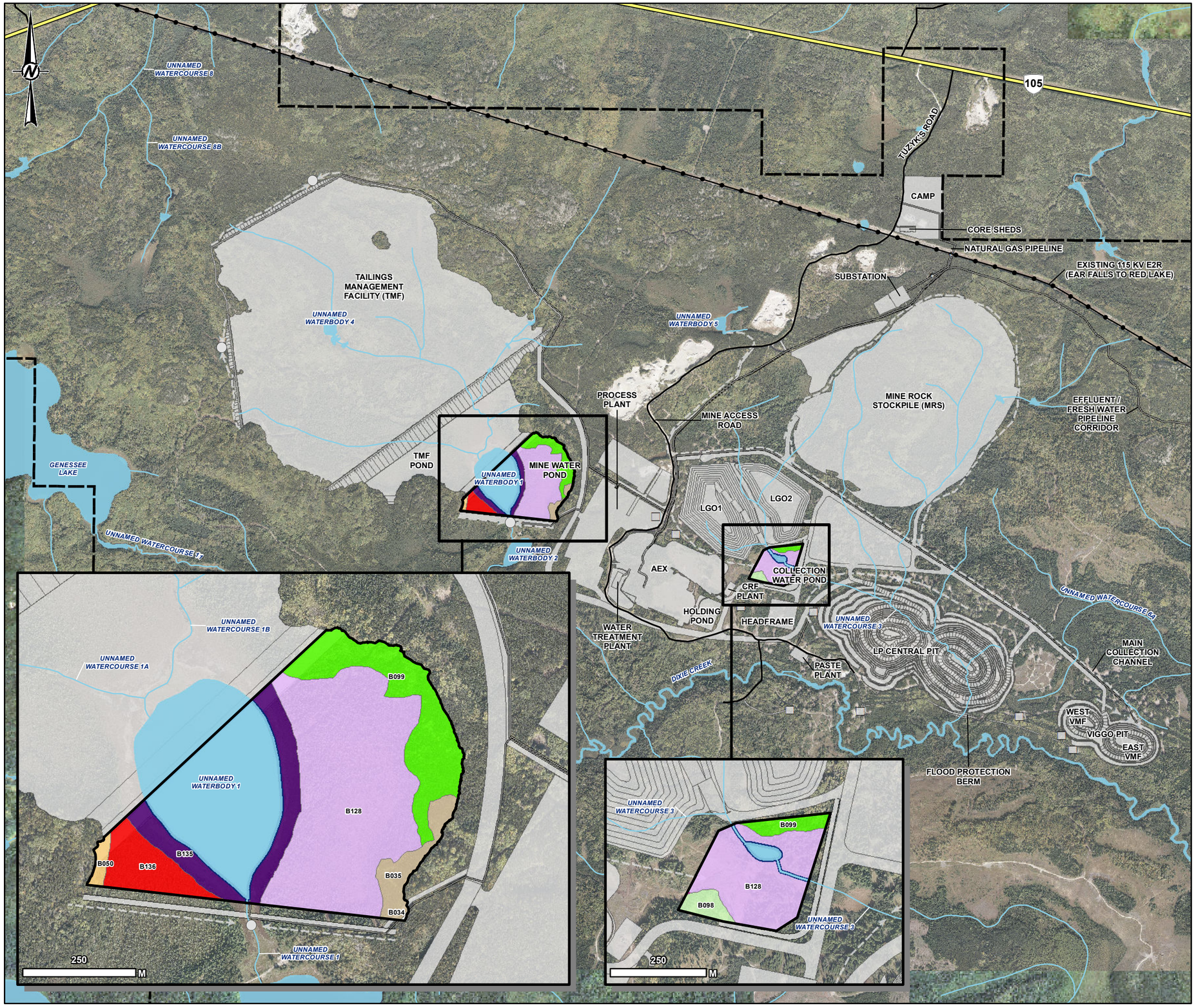

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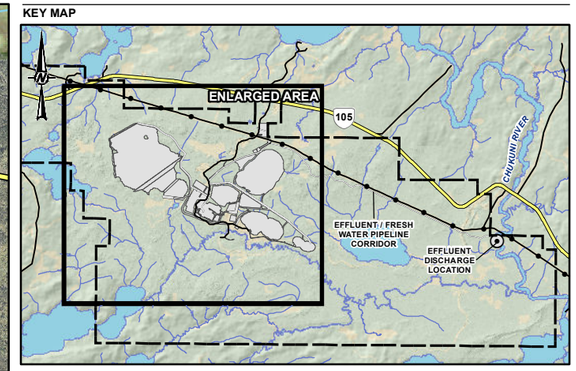

SCALE 1:200,000

LEGEND

- PROPERTY BOUNDARY
- PROPOSED MINE WATER POND
- OTHER PROPOSED MINE FEATURE
- HIGHWAY (INCLUDING NATURAL GAS PIPELINE)
- LOCAL ROAD
- EXISTING TRANSMISSION LINE
- WATERCOURSE
- WATERBODY
- IMPACTED WATERCOURSE
- IMPACTED WATERBODY

IMPACTED VEGETATION COMMUNITY

- B034: *DRY, SANDY: JACK PINE – BLACK SPRUCE DOMINATED*
- B035: *DRY, SANDY: PINE - BLACK SPRUCE CONIFER*
- B050: *DRY TO FRESH, COARSE: PINE - BLACK SPRUCE CONIFER*
- B098: *FRESH, SILTY TO FINE LOAMY: JACK PINE - BLACK SPRUCE DOMINATED*
- B099: *FRESH, SILTY TO FINE LOAMY: PINE - BLACK SPRUCE CONIFER*
- B114: *MOIST, FINE: PINE - BLACK SPRUCE CONIFER*
- B128: *ORGANIC INTERMEDIATE CONIFER SWAMP*
- B135: *ORGANIC THICKET SWAMP*
- B136: *SPARSE TREED FEN*

0 0.25 0.5 1
1:28,000 KILOMETRES

NOTE(S)
1. ALL LOCATIONS ARE APPROXIMATE
2. VMF: VIGGO MANAGEMENT FACILITY

REFERENCE(S)
1. CONTAINS INFORMATION LICENSED UNDER THE OPEN GOVERNMENT LICENCE - ONTARIO
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6. COORDINATE SYSTEM: NAD 1983 UTM ZONE 15N

CLIENT
GREAT BEAR RESOURCES

PROJECT
GREAT BEAR PROJECT

TITLE
MINE WATER POND ALTERNATIVE B VEGETATION COMMUNITIES AND FISHERIES RESOURCES

CONSULTANT

YYYY-MM-DD	2025-07-08
DESIGNED	----
PREPARED	MD
REVIEWED	HL
APPROVED	DR

PROJECT NO.	CONTROL	REV.	FIGURE
CA0031271	0001	A	8-5

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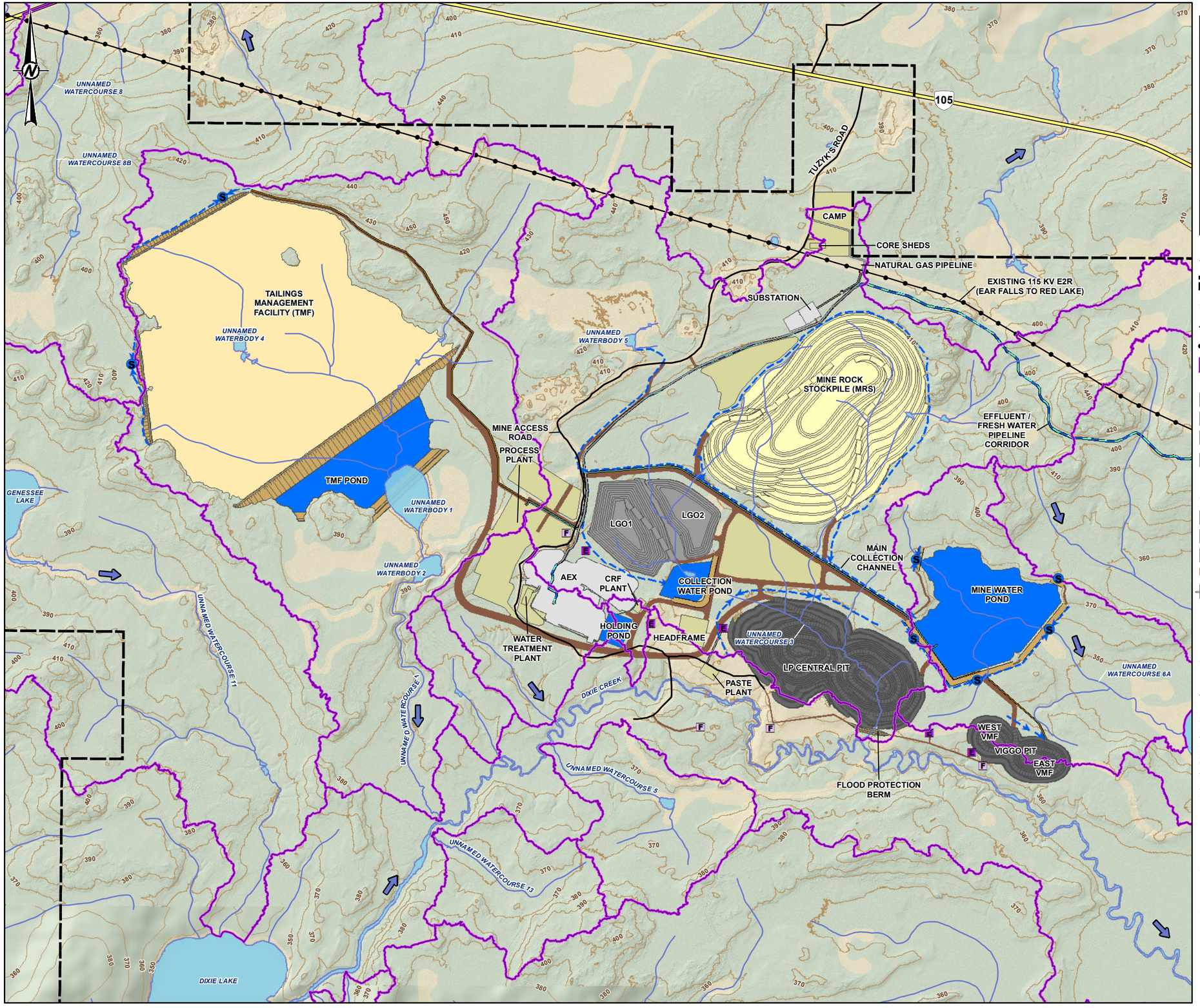
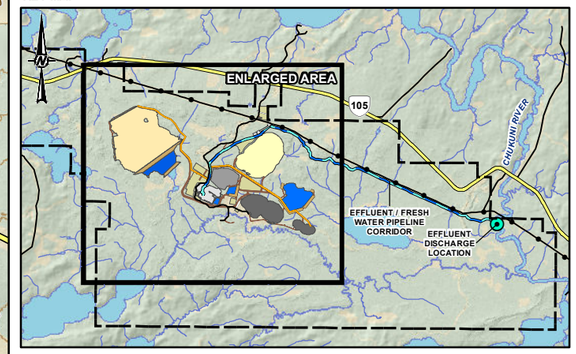


KEY MAP



SCALE 1:200,000

LEGEND

- PROPERTY BOUNDARY
- HIGHWAY (INCLUDING NATURAL GAS PIPELINE)
- LOCAL ROAD
- EXISTING TRANSMISSION LINE
- LOCAL SUBCATCHMENT
- WATERCOURSE
- WATERBODY
- CONTOURS (10 M INTERVAL)
- FLOW DIRECTION

PROPOSED MINE FEATURE

- OPEN PIT
- MINE ROCK STOCKPILE (MRS)
- LOW GRADE ORE STOCKPILE (LGO)
- TAILINGS MANAGEMENT FACILITY (TMF)
- SUMP
- COLLECTION DITCH
- MINE FACILITIES / INFRASTRUCTURE
- DAM
- POND
- ROAD
- ADVANCED EXPLORATION SITE (AEX)
- EXHAUST VENT RAISE
- FRESH AIR VENT RAISE
- TRANSMISSION LINE
- RECLAIM PIPELINE
- TAILINGS PIPELINE
- PASTE PLANT PIPELINE
- EFFLUENT / FRESH WATER PIPELINE CORRIDOR
- EFFLUENT DISCHARGE LOCATION

0 0.25 0.5 1

1:28,000 KILOMETRES

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE
2. VMF: VIGGO MANAGEMENT FACILITY

REFERENCE(S)

1. CONTAINS INFORMATION LICENSED UNDER THE OPEN GOVERNMENT LICENCE - ONTARIO
2. CONTOURS ACQUIRED FROM 2022 LIDAR SURVEY.
3. PROPERTY BOUNDARY PROVIDED BY GREAT BEAR RESOURCES, AUGUST 2024.
4. ROADS INFORMATION PROVIDED BY GREAT BEAR RESOURCES, AUGUST 2022.
5. SITE PLAN BASED ON INFORMATION PROVIDED BY GREAT BEAR RESOURCES, DECEMBER 2024 / JUNE 2025.
6. SUBCATCHMENT BOUNDARIES DELINEATED USING 2022 LIDAR AND THE ONTARIO FLOW ASSESSMENT TOOL (MNRF).
7. COORDINATE SYSTEM: NAD 1983 UTM ZONE 15N

CLIENT
GREAT BEAR RESOURCES

PROJECT
GREAT BEAR PROJECT

TITLE
MINE WATER POND ALTERNATIVE F CONFIGURATION

CONSULTANT

wsp

YYYY-MM-DD	2025-07-08
DESIGNED	----
PREPARED	MD
REVIEWED	HL
APPROVED	DR

PROJECT NO.	CONTROL	REV.	FIGURE
CA0031271	0001	A	8-6

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

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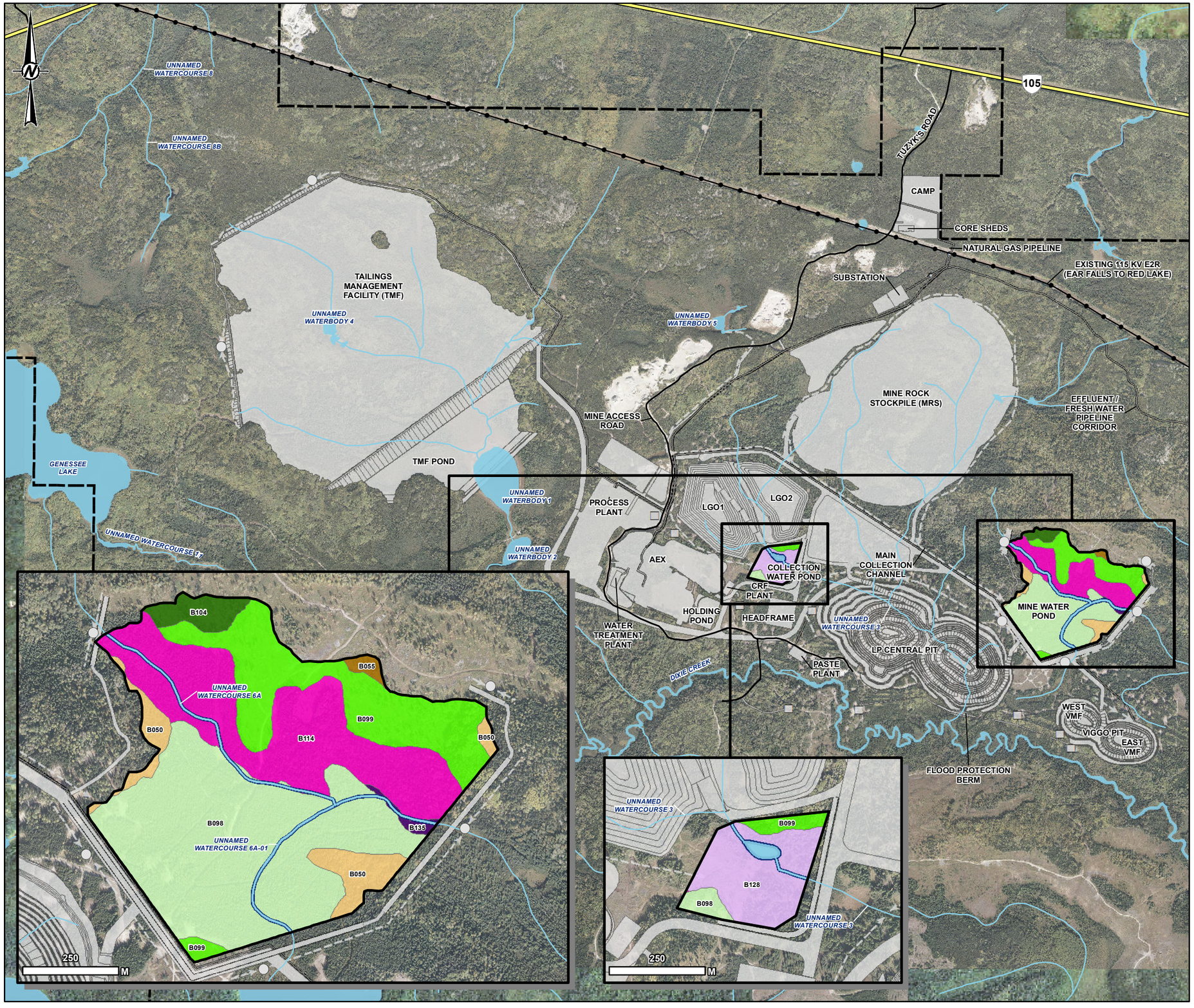
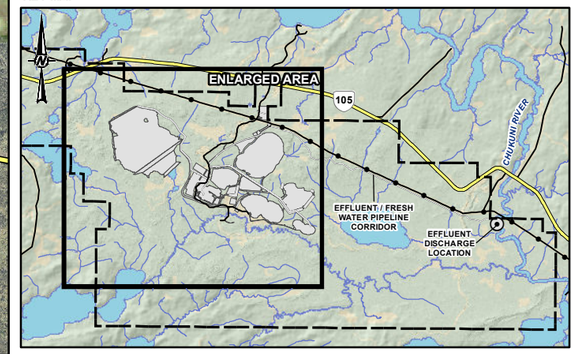


KEY MAP



SCALE 1:200,000

LEGEND

- PROPERTY BOUNDARY
- PROPOSED MINE WATER POND
- OTHER PROPOSED MINE FEATURE
- HIGHWAY (INCLUDING NATURAL GAS PIPELINE)
- LOCAL ROAD
- EXISTING TRANSMISSION LINE
- WATERCOURSE
- WATERBODY
- IMPACTED WATERCOURSE
- IMPACTED WATERBODY

IMPACTED VEGETATION COMMUNITY

- B050: *DRY TO FRESH, COARSE: PINE - BLACK SPRUCE CONIFER*
- B055: *DRY TO FRESH, COARSE: ASPEN - BIRCH HARDWOOD*
- B098: *FRESH, SILTY TO FINE LOAMY: JACK PINE - BLACK SPRUCE DOMINATED*
- B099: *FRESH, SILTY TO FINE LOAMY: PINE - BLACK SPRUCE CONIFER*
- B104: *FRESH, SILTY TO FINE LOAMY: ASPEN - BIRCH HARDWOOD*
- B114: *MOIST, FINE: PINE - BLACK SPRUCE CONIFER*
- B128: *ORGANIC INTERMEDIATE CONIFER SWAMP*
- B135: *ORGANIC THICKET SWAMP*

0 0.25 0.5 1

1:28,000 KILOMETRES

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE
2. VMF: VIGGO MANAGEMENT FACILITY

REFERENCE(S)

1. CONTAINS INFORMATION LICENSED UNDER THE OPEN GOVERNMENT LICENCE - ONTARIO
2. AERIAL IMAGERY PROVIDED BY GREAT BEAR RESOURCES (SCENE DATE: SEPTEMBER 2022).
3. PROPERTY BOUNDARY PROVIDED BY GREAT BEAR RESOURCES, AUGUST 2024.
4. ROADS INFORMATION PROVIDED BY GREAT BEAR RESOURCES, AUGUST 2022.
5. SITE PLAN BASED ON INFORMATION PROVIDED BY GREAT BEAR RESOURCES, DECEMBER 2024 / JUNE 2025.
6. COORDINATE SYSTEM: NAD 1983 UTM ZONE 15N

CLIENT
GREAT BEAR RESOURCES

PROJECT
GREAT BEAR PROJECT

TITLE
MINE WATER POND ALTERNATIVE F VEGETATION COMMUNITIES AND FISHERIES RESOURCES

CONSULTANT

wsp

YYYY-MM-DD	2025-07-08
DESIGNED	----
PREPARED	MD
REVIEWED	HL
APPROVED	DR

PROJECT NO.	CONTROL	REV.	FIGURE
CA00137271	0001	A	8-7

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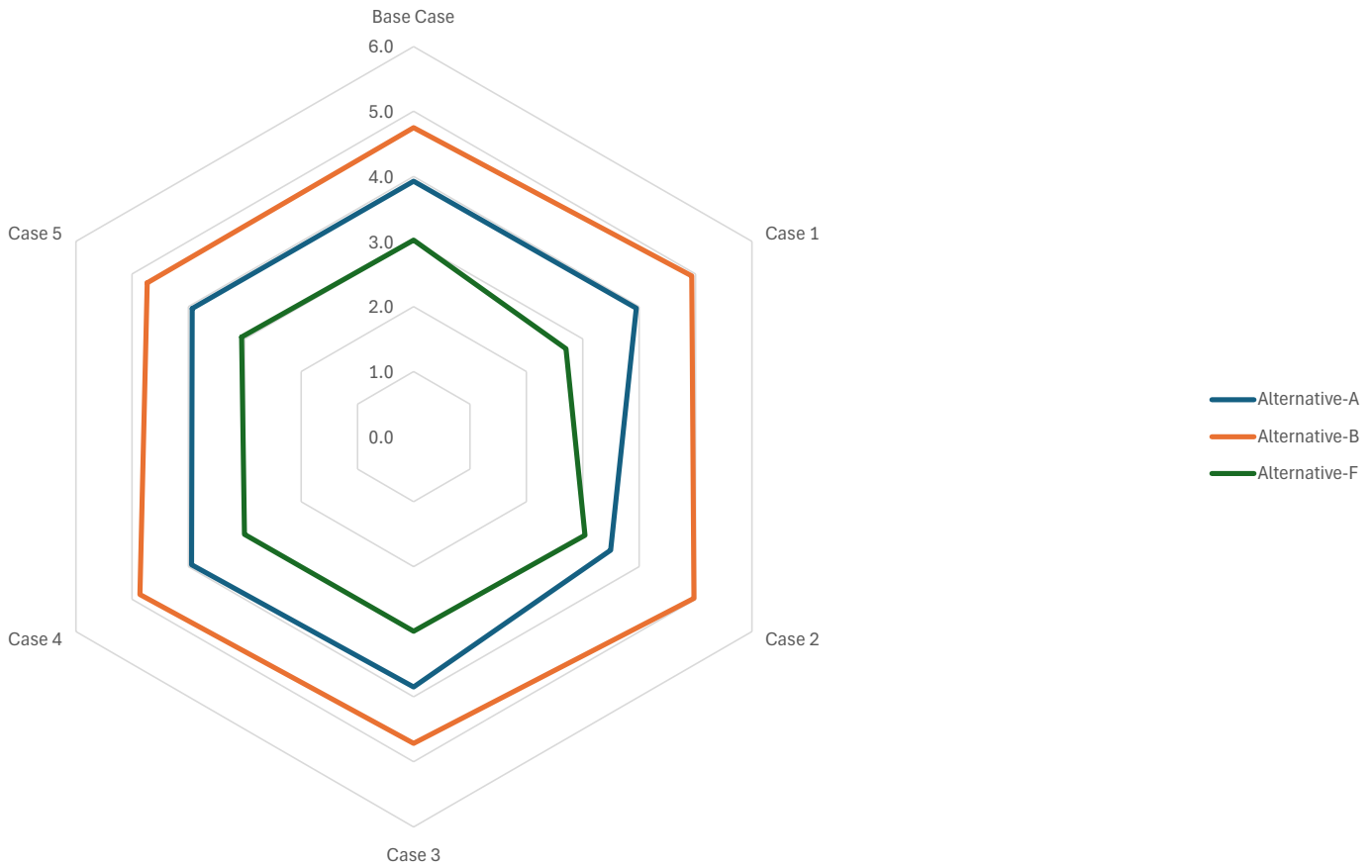


Notes

KINROSS Great Bear

Mine Water Pond Sensitivity Analysis

Great Bear Project Assessment for Alternatives for Storage of Mine Waste

Great Bear Project

Figure Number		8-8	
Project Number		OMEMA2303	
Date		December 2025	
Drawn	HL	Reviewed	DR

9 OVERBURDEN STOCKPILE

9.1 STEP 1: CANDIDATE ALTERNATIVES

Overburden material will be generated primarily during the construction phase, from stripped footprints to allow for construction of all mine infrastructure on prepared foundations, and from open pit stripping during construction and operations phases. Where practical, the overburden material will be stored in stockpiles either near the primary source (open pits) or in close proximity to the site features where it will eventually be used for rehabilitation. It is anticipated that up to 17 Mm^3 of overburden will require storage on the surface.

The proposed stockpiles for overburden removed during the preferred TMF preparation were selected to be close to the TMF and will avoid waterbodies and watercourses frequented by fish. These stockpiles were therefore not included in the alternative assessment.

Six overburden storage locations were identified in proximity to the open pits as shown in Figure 9-1. Alternative E was identified as an alternative that does not overprint waterbodies and watercourses frequented by fish.

9.1.1 ALTERNATIVE A

Alternative A is located within the Property about 3 km north of LP Central pit, in the area of the preferred TMF location (Figure 9-1). The alternative is situated within the Dixie Creek north tributary subcatchment which ultimately drains to the Chukuni River.

9.1.2 ALTERNATIVE B

Alternative B is wholly situated within the Property as illustrated in Figure 9-1, about 3 km west of LP Central pit in the area of the preferred TMF location. Alternative B is located in the Dixie Creek north tributary subcatchment which ultimately drains to the Chukuni River.

9.1.3 ALTERNATIVE C

Alternative C is within the Property as illustrated in Figure 9-1 and is located about 2 km south of LP Central pit, south of Dixie Creek. It is located within the Dixie Creek north tributary subcatchment and the Dixie Creek south tributary subcatchment, which both ultimately drain to the Chukuni River.

9.1.4 ALTERNATIVE D

Alternative D is wholly situated within the Property as illustrated in Figure 9-1. It is located about 1 km south of the LP Central pit, south of Dixie Creek, within the Dixie Creek north tributary subcatchment and the Dixie Creek south tributary subcatchment, which both ultimately drain to the Chukuni River.

9.1.5 ALTERNATIVE E

Alternative E is located within the Property (Figure 9-1) and was selected to not overprint waterbodies or watercourses that are frequented by fish. Alternative E is located east of the Viggo pit, in the Dixie Creek north tributary subcatchment and Dixie Creek catchment which ultimately drain to the Chukuni River.

9.1.6 ALTERNATIVE F

Alternative F is wholly situated within the Property as illustrated in Figure 9-1, situated 1 km north of LP Central pit. It is located in the Dixie Creek north tributary subcatchment and Dixie Creek catchment which ultimately drain to the Chukuni River.

9.2 STEP 2: PRE-SCREENING ASSESSMENT

The pre-screening criteria for the OVB alternatives related to location in relation to the preferred mine waste alternatives:

- Do the alternatives avoid overprinting the preferred TMF and potential expansion area? (yes / no)
- Do the alternatives avoid overprinting the preferred MRS? (yes / no)
- Do the alternatives avoid overprinting the preferred LGO? (yes / no)
- Do the alternatives avoid overprinting the preferred MWP? (yes / no)
- Do the alternatives avoid overprinting existing commercial aggregate operations? (yes / no).

Based on the pre-screening criteria, four OVB alternatives (Alternatives C, D, E and F) were carried forward as summarized in Table 9-1. The characteristics of these four OVB alternatives are briefly summarized in Table 9-2.

9.3 STEP 3: OVERBURDEN STOCKPILE ALTERNATIVES CHARACTERIZATION

At the outset, six alternatives were reviewed for the OVB. Through the pre-screening process described in Section 9.2, the total number of alternatives carried forward was reduced to four for consideration in the MAA. The alternatives carried forward were:

- Alternative C
- Alternative D
- Alternative E
- Alternative F.

The alternatives are summarized in following sections and in Table 9-2. The alternatives were developed to support ranking and consideration in the MAA with the purpose of identifying the preferred OVB location. The rationale for the sub-accounts and indicators used in the MAA for the OVB are presented in Table 9-3.

9.3.1 ALTERNATIVE C

Alternative C is situated within the Property as illustrated in Figure 9-2, about 2 km southwest of LP Central pit, south of Dixie Creek. Alternative C is situated in both the Dixie Creek north tributary and the Dixie Creek south tributary subcatchments.

Alternative C will have a footprint of about 149 ha. The facility will be developed by placing overburden at an assumed side slope of 10H:1V achieving a maximum stockpile height of 39 m. Prior to placement of overburden in the OVB, roads will be constructed from the open pits and mine infrastructure to haul the overburden to Alternative C. As illustrated in Figure 9-2, overburden will need to cross Dixie Creek, and will have an approximate haul distance of 3 km. It is anticipated that Alternative C will require an additional road network of 2.3 km as illustrated in Figure 9-2.

Contact water from the OVB will be collected via gravity drainage channels and collection sumps located in low lying areas. Water collected in the sumps will be monitored and released to the environment in accordance with applicable environmental permits and approvals. Alternative C is anticipated to require about 7.2 km of perimeter ditching and 11 collection sumps (Figure 9-2).

The OVB will overprint both aquatic and terrestrial resources as illustrated in Figure 9-3. Alternative C overprints small portions of Unnamed Watercourse 7A-03 and Unnamed Watercourse 7A-06. It is anticipated that Alternative C will overprint a combined watercourse length of 0.9 km and will have a comparative cost estimate for fish compensation of about $1 million.

Alternative C will overprint vegetation communities including but not limited to pine, black spruce, jack pine, aspen, birch, hardwood, organic intermediate conifer swamp, organic thicket swamp and mineral meadow marsh. The overprinted vegetation communities are shown in Figure 9-3.

During consultation, wild rice fields and moose habitat were identified as being of interest to Indigenous communities, and baseline studies identified SAR species and associated habitat at the Project. Alternative C is anticipated to approximately overprint the following vegetation and habitat types related to these aspects:

- Wild rice fields: 0 ha
- Moose late wintering habitat: 148.6 ha
- Moose foraging habitat: 0.8 ha
- SAR Habitats:
  - Caribou refuge habitat: 95.0 ha
  - Bat maternity roost habitat: 147.4 ha
  - Bat foraging habitat: 46.5 ha
  - Wolverine habitat: 44.4 ha
  - Avian SAR habitat: 149.4 ha.

Comparative cost estimates were developed for the overburden alternatives, with the purpose of differentiating the alternatives in the MAA. Comparative cost estimates were developed based on the alternative quantities and information detailed in Figure 9-2 and Table 9-4:

- Footprint clearing: 149 ha
- Perimeter ditching: 7.2 km
- Seepage collection sumps: 11
- Additional road network: 2.3 km.

Based on the comparative cost estimate provided in Appendix E, it is anticipated that Alternative C will have a comparative construction cost of about $10.3 million.

Overburden stored in the stockpiles will be reused for rehabilitation of the Project. The stored overburden may be used as a fill material, cover, or amended to support seeding and vegetation. Once depleted, the areas will be contoured to restore naturalized drainage towards Dixie Creek, and the footprint will be seeded. In the event that not all the overburden is reused, the stockpile slopes will be contoured and seeded for stabilization. The comparative closure cost for Alternative C is estimated to be about $5 million.

9.3.2 ALTERNATIVE D

Alternative D is wholly situated within the Property as illustrated in Figure 9-1. The alternative is located about 1 km south of LP Central pit south of Dixie Creek. Alternative D is situated in both the Dixie Creek

north tributary subcatchment and the Dixie Creek south tributary subcatchment, which report to Dixie Creek and ultimately drain to the Chukuni River.

Alternative D will have a footprint of about 148 ha. The facility will be developed by placing overburden in the Alternative D footprint with overall side slopes of 10H:1V achieving a maximum stockpile height of 39 m. Prior to placement of the overburden in the OVB, roads will be constructed from the open pits and mine infrastructure areas to the Alternative D location which will require a crossing over Dixie Creek. It is anticipated that Alternative D will require an additional road network of 2.5 km and have an approximate haul distance of 3 km. The proposed road network is shown in Figure 9-4.

Contact water from the OVB will be collected via gravity drainage ditches and collection sumps located in low lying areas. Water collected in the sumps will be monitored and released to the environment in accordance with applicable environmental permits and approvals. Alternative D will require 5.4 km of perimeter ditching and eight collection sumps as shown in Figure 9-4.

The proposed Alternative D OVB will overprint both aquatic and terrestrial resources, illustrated in Figure 9-5. Alternative D overprints about 0.7 km of Unnamed Watercourse 7A-08. Comparative cost estimates were developed for fish compensation resulting from the overprinted watercourses. The anticipated costs for fish compensation associated with Alternative D are about $0.7 million.

Alternative D will overprint vegetation including but not limited to jack pine, black spruce, pine, aspen-birch hardwood, organic intermediate conifer swamp and mineral meadow marsh. Figure 9-5 illustrates the overprinted vegetation communities.

During consultation, wild rice fields and moose habitat were identified as being of interest to Indigenous communities, and baseline studies identified SAR species and associated habitat at the Project. Alternative D is anticipated to approximately overprint the following vegetation and habitat types:

- Wild rice fields: 0 ha
- Moose late wintering habitat: 145.6 ha
- Moose foraging habitat: 2.8 ha
- SAR Habitats:
  - Caribou refuge habitat: 74.3 ha
  - Bat maternity roost habitat: 145.6 ha
  - Bat foraging habitat: 36.1 ha
  - Wolverine habitat: 33.2 ha
  - Avian SAR habitat: 148 ha.

Comparative cost estimates were developed for the OVB alternatives, with the purposes of differentiating the alternatives in the MAA. Comparative cost estimates were developed based the alternative quantities and information in Figure 9-2 and Table 9-4:

- Footprint clearing: 148 ha
- Perimeter ditching: 5.4 km
- Seepage collection sumps: 8
- Additional road network: 2.5 km.

Based on the comparative cost estimate provided in Appendix E, it is anticipated that Alternative D will have a comparative construction cost of about $8.2 million.

Overburden stored in the stockpiles will be reused for rehabilitation of the Project. The stored overburden may be used as a fill material, cover, or amended to support seeding and vegetation. Once depleted, the areas will be contoured to restore naturalized drainage towards Dixie Creek, and the footprint will be seeded. If all the overburden is reused, the stockpile slopes will be contoured and seeded for

stabilization. The comparative closure cost for Alternative D is estimated to be about $5 million.

9.3.3 ALTERNATIVE E

Alternative E is wholly situated within the Property as illustrated in Figure 9-1 and was designed to avoid waterbodies or watercourses that are frequented by fish. The alternative is located east of the Viggo pit and is sited in the Dixie Creek north tributary subcatchment and Dixie Creek catchment, which ultimately drain to the Chukuni River.

Alternative E will have a OVB footprint of about 164 ha. The facility will be developed by placing overburden with side slopes of 10H:1V achieving a maximum stockpile height of 19 m. Prior to placement of overburden, roads will be constructed from the open pits to haul overburden to the Alternative E locations which will require a crossing over Dixie Creek. It is anticipated that Alternative E will require an additional road network of 1.3 km and will have an approximate haul distance of 3.5 km. The proposed road network is shown in Figure 9-6.

Contact water from the OVB will be collected via gravity drainage channels and collection sumps located in low lying areas. Water collected in the sumps will be monitored and released to the environment in accordance with applicable environmental permits and approvals. Alternative E will require 7.1 km of perimeter channel and eight collection sumps as shown in Figure 9-4.

As shown in Figure 9-5, development of Alternative E will overprint vegetation communities including but not limited to pine, black spruce, aspen, birch hardwood, low treed bog, organic intermediate conifer swamp and sparse treed fen.

During consultation wild rice fields and moose habitat were identified as being of interest to Indigenous communities, and baseline studies identified SAR species and associated habitat at the Project. Alternative E is anticipated to approximately overprint the following vegetation and habitat types:

- Wild rice fields: 0 ha
- Moose late wintering habitat: 163.6 ha
- Moose foraging habitat: 35.0 ha
- SAR Habitats:
  - Caribou refuge habitat: 151.8 ha
  - Bat maternity roost habitat: 128.7 ha
  - Bat foraging habitat: 88.0 ha
  - Wolverine habitat: 53.1 ha
  - Avian SAR habitat: 164 ha.

Comparative cost estimates were developed for the OVB alternatives, with the purposes of differentiating the alternatives in the MAA. Comparative cost estimates were developed based the alternative quantities and information detailed in Figure 9-2 and Table 9-4:

- Footprint clearing: 164 ha
- Perimeter ditching: 7.1 km
- Seepage collection sumps: 8
- Additional road network: 1.3 km.

Based on the comparative cost estimate provided in Appendix E, it is anticipated that Alternative E will have a comparative construction cost of about $7.7 million.

Overburden stored in the stockpiles will be reused for rehabilitation of the Great Bear Project. The overburden may be used as a fill material, cover, or amended to support seeding and vegetation. Once depleted, the areas will be contoured to restore naturalized drainage towards Dixie Creek, and the

footprint will be seeded. The stockpile slopes will be contoured and seeded for stabilization, should there be residual overburden after rehabilitation is complete. The comparative closure cost for Alternative E is estimated to be about $6 million.

9.3.4 ALTERNATIVE F

Alternative F is wholly situated within the Property as illustrated in Figure 9-1 and is situated 1 km north of LP Central pit. It is located in the Dixie Creek north tributary subcatchment and Dixie Creek catchment which ultimately drains to the Chukuni River.

Alternative F will consist of two stockpiles with a combined footprint of about 127 ha. The facility will be developed by placing overburden in the Alternative F footprint with overall side slopes of 10H:1V achieving a maximum stockpile height of about 25 m. Prior to placement of the overburden in the stockpiles, roads will be constructed from the open pits and mine infrastructure. It is anticipated that Alternative F will require an additional road network of 0.3 km and will have an approximate haul distance of 1 km. The proposed road network is shown in Figure 9-8.

Contact water from the OVB will be collected via gravity drainage channels and collection towards the drainage channel to the VMF or a sump or collection pond, preventing water from draining to LP Central pit. Alternative F will require 2.3 km of perimeter ditches as shown in Figure 9-8.

Alternative F will overprint both aquatic and terrestrial resources, as shown in Figure 9-9, including portions of Unnamed Watercourse 3, Unnamed Watercourse 3D and Unnamed Watercourse 6A. Comparative cost estimates were developed for fish compensation resulting from the overprinted watercourses. The anticipated costs for fish compensation associated with Alternative F are about $2 million.

Alternative F will overprint vegetation communities including but not limited to jack pine, black spruce, pine, aspen, birch hardwood and organic intermediate conifer swamp.

During consultation, wild rice fields and moose habitat were identified as being of interest to Indigenous communities, and baseline studies identified SAR species and associated habitat at the Project. Alternative F is anticipated to approximately overprint the following vegetation and habitat types:

- Wild rice fields: 0 ha
- Moose late wintering habitat: 127.0 ha
- Moose foraging habitat: 1.5 ha
- SAR Habitats:
  - Caribou refuge habitat: 68.3 ha
  - Bat maternity roost habitat: 125.5 ha
  - Bat foraging habitat: 8.9 ha
  - Wolverine habitat: 7.0 ha
  - Avian SAR habitat: 127 ha.

Comparative cost estimates were developed for the OVB alternatives, with the purposes of differentiating the alternatives in the MAA. Comparative cost estimates were developed based the alternative quantities and information detailed in Figure 9-2 and Table 9-4:

- Footprint clearing: 127 ha
- Perimeter ditching: 2.3 km
- Seepage collection sumps: 0
- Additional road network: 0.3 km.

Based on the comparative cost estimate provided in Appendix E, it is anticipated that Alternative F will have a comparative construction cost of about $3.9 million.

Overburden stored in the stockpiles will be reused for rehabilitation of the Great Bear Project. The overburden may be used as a fill material, cover, or amended to support seeding and vegetation. Once depleted, the areas will be contoured to restore naturalized drainage and the footprint will be seeded. Should all the overburden not be reused, the stockpile slopes will be contoured and seeded for stabilization. The comparative closure cost for Alternative F is estimated to be about $4 million.

9.4 STEP 4: IMPACT EVALUATION AND ASSESSMENT PROCESS

9.4.1 ACCOUNTS, SUB-ACCOUNTS AND INDICATORS

Sub-accounts and indicators were chosen based on Project team experience with mine waste storage and assessments of alternatives for other mining projects using the methodology described in Section 4 and in accordance with the ECCC Guidelines (ECCC 2016). The Project Team included both Great Bear Resources staff and their consultants. During the preparation of the report, consultation with Indigenous communities was undertaken and feedback / input was gathered that informed the report. This included the alternatives, accounts, sub-accounts, indicators, measurement parameters and weightings. A complete list of sub-accounts and indicators used to develop the multiple accounts ledger, including the rationale for their selection, is provided in Table 9-3 and the characterization of the OVB Alternatives is summarized in Table 9-4.

9.4.2 VALUATING CRITERIA

Criteria used to calculate values for each of the indicators in the multiple accounts ledger are provided in Table 9-5.

9.5 STEP 5: VALUE-BASED DECISION PROCESS

A multiple accounts ledger was developed for the three alternatives considered through the MAA. Using the alternatives characterization (Table 9-4) and valuation criteria summarized in Table 9-5, values have been determined for all indicators, which are presented in Table 9-6. In accordance with the ECCC Guidelines (ECCC 2016), weights have been applied to each account, sub-account and indicator, to reflect the relative importance of the criteria and described in Section 4.5.3

9.5.1 QUANTITATIVE ANALYSIS – BASE CASE

Using the values and weights provided in Table 9-6, the MAA was conducted for the base case scenario. The analysis of Environmental, Technical, Project Economics and Socio-economic indicators, and calculation of sub-account merit ratings is provided in Table 9-7 through Table 9-10. The analysis of Environmental, Technical, Project Economics, and Socio-economic sub-accounts, and calculation of account merit ratings, is provided in Table 9-12 through Table 9-14.

Overall results of the MAA base case scenario for the OVB, and calculation of alternative merit ratings, are provided in Table 9-15. The results are summarized as follows:

- Alternative F is the overall preferred alternative with a merit rating of 5.2 out of 6.0
- Alternative D is the second overall preferred alternative with a materially lower merit ranking of 3.2 out of 6.0

- Alternative E and Alternative C was tied for the lowest ranking alternative with a merit ranking of 2.9 out of 6.0.

9.6 STEP 6: SENSITIVITY ANALYSIS

A sensitivity analysis was carried out to evaluate the robustness of the analytical process and to determine the degree to which various options are influenced by the choice of weightings.

Four sensitivity analysis scenarios were given consideration, in addition to the base case (weighting shown in brackets):

- Base Case
- Case 1: All accounts weighted equally:
  - Environmental (6)
  - Technical (6)
  - Project Economics (6)
  - Socio-economic (6)
- Case 2: All accounts, sub-accounts and indicators weighted equally:
  - Accounts (6)
  - Sub-accounts (6)
  - Indicators (6)
- Case 3: Prioritize people and environment:
  - Environmental (6)
  - Technical (2)
  - Project Economics (1)
  - Socio-economic (6)
- Case 4: Prioritize water (weight of all criteria related to water received a maximum weight):
    - Terrestrial and water resources (6)
    - Fisheries resources (6)
- Case 5: Project economics has no weight:
  - Environmental (6)
  - Technical (3)
  - Project Economics (0)
  - Socio-economic (3).

The sensitivity analysis found that the MAA is robust with Alternative F being preferred for all scenarios. The results of the sensitivity analyses as described above are presented in Table 9-16 and Figure 9-10.

Table 9-1: Overburden Stockpile Alternatives Pre-Screening

	Do the alternatives avoid overprinting the preferred TMF and potential expansion area? (yes / no)	Do the alternatives avoid overprinting the preferred MRS? (yes / no)	Do the alternatives avoid overprinting the preferred LGO? (yes / no)	Do the alternatives avoid overprinting the preferred MWP? (yes / no)	Do the alternatives avoid overprinting existing commercial aggregate operations? (yes / no)
Alternative A	No	Yes	Yes	Yes	Yes
Alternative B	No	Yes	Yes	Yes	Yes
Alternative C	Yes	Yes	Yes	Yes	Yes
Alternative D	Yes	Yes	Yes	Yes	Yes
Alternative E	Yes	Yes	Yes	Yes	Yes
Alternative F	Yes	Yes	Yes	Yes	Yes

Table 9-2: Summary Table of Candidate Overburden Stockpile Alternatives

Overburden Stockpile Alternative	Overburden Stockpile Construction Approach	Overburden Stockpile Operation Approach	Overburden Stockpile Closure Approach
Alternative C	Alternative C is situated in both the Dixie Creek north tributary and the Dixie Creek south tributary subcatchments. Preparation and construction for Alternative C will include: – Haul roads for overburden transfer to Alternative C – Clearing of the footprint for overburden storage – Perimeter ditching – Collection sumps for suspended solids – Seeding for slope stability and erosion control – Movement of overburden to the OVB.	The OVB will be managed in accordance with applicable environmental approvals and permits. It is anticipated that monitoring will be required as part of the environmental permits and approvals and may include but is not limited to: – Slope stability – Sediment loss (erosion) – Vegetation success – Water quality monitoring. During operations, Great Bear Resources may use some of the overburden material to support progressive reclamation activities such as, covering and seeding of the MRS once final contours are achieved. Therefore, it is anticipated that OVB will be somewhat reduced during the operations phase.	At closure, the material remaining in the OVB will be used to support rehabilitation of the Project. Once the OVB is depleted the area will be contoured to restore naturalized drainage and area will be seeded. In the even that all the overburden material is not used during rehabilitation, the OVB will be graded for stability, and the remaining portion will be seeded, where required.
Alternative D	Alternative D is situated in both the Dixie Creek north tributary and the Dixie Creek south tributary subcatchments. Preparation and construction for Alternative D will include: – Haul roads for overburden transfer to Alternative D – Clearing of the footprint for overburden storage – Perimeter ditching – Collection sumps for suspended solids – Seeding for slope stability and erosion control – Movement of overburden to the OVB.	The OVB will be managed in accordance with applicable environmental approvals and permits. It is anticipated that monitoring will be required as part of the environmental permits and approvals and may include but is not limited to: – Slope stability – Sediment loss (erosion) – Vegetation success – Water quality monitoring. During operations, Great Bear Resources may use some of the overburden material to support progressive reclamation activities such as, covering and seeding of the MRS once final contours are achieved. Therefore, it is anticipated that OVB will be somewhat reduced during the operations phase.	At closure, the material remaining in the OVB will be used to support rehabilitation of the Project. Once the OVB is depleted the area will be contoured to restore naturalized drainage and area will be seeded. In the even that all the overburden material is not used during rehabilitation, the OVB will be graded for stability, and the remaining portion will be seeded, where required.
Alternative E	Alternative E is situated in both the Dixie Creek north tributary subcatchment and the Dixie Creek catchment. Alternative E avoids overprinting waterbodies and watercourses that may be frequented by fish. Preparation and construction for Alternative E will include: – Haul roads for overburden transfer to Alternative E – Clearing of the footprint for overburden storage – Perimeter ditching – Collection sumps for suspended solids – Seeding for slope stability and erosion control – Movement of overburden to the OVB.	The OVB will be managed in accordance with applicable environmental approvals and permits. It is anticipated that monitoring will be required as part of the environmental permits and approvals and may include but is not limited to: – Slope stability – Sediment loss (erosion) – Vegetation success – Water quality monitoring. During operations, Great Bear Resources may use some of the overburden material to support progressive reclamation activities such as, covering and seeding of the MRS once final contours are achieved. Therefore, it is anticipated that OVB will be somewhat reduced during the operations phase.	At closure, the material remaining in the OVB will be used to support rehabilitation of the Project. Once the OVB is depleted the area will be contoured to restore naturalized drainage and area will be seeded. In the even that all the overburden material is not used during rehabilitation, the OVB will be graded for stability, and the remaining portion will be seeded, where required.
Alternative F	Alternative F is situated in both the Dixie Creek north tributary subcatchment and the Dixie Creek catchment. Preparation and construction for Alternative F will include: – Haul roads for overburden transfer to Alternative F – Clearing of the footprint for overburden storage – Perimeter ditching – Seeding for slope stability and erosion control – Movement of overburden to the OVB.	The OVB will be managed in accordance with applicable environmental approvals and permits. It is anticipated that monitoring will be required as part of the environmental permits and approvals and may include but is not limited to: – Slope stability – Sediment loss (erosion) – Vegetation success – Water quality monitoring. During operations, Great Bear Resources may use some of the overburden material to support progressive reclamation activities such as, covering and seeding of the MRS once final contours are achieved. Therefore, it is anticipated that OVB will be somewhat reduced during the operations phase.	At closure, the material remaining in the OVB will be used to support rehabilitation of the Project. Once the OVB is depleted the area will be contoured to restore naturalized drainage and area will be seeded. In the even that all the overburden material is not used during rehabilitation, the OVB will be graded for stability, and the remaining portion will be seeded, where required.

Table 9-3: Overburden Stockpile Accounts, Sub-Accounts and Indicators

Account	Subaccount	Subaccount Rationale	Indicator	Indicator Rationale
Environmental	Fisheries Resources	During the alternatives assessment, the OVB was sited to avoid large lakes and large rivers where possible. However, several of the alternatives that were evaluated would overprint smaller waters frequented by fish. Overprinting of waters frequented by fish will result in a change to fish habitat that would require fish habitat offset in accordance with the *Fisheries Act* and the MDMER.	Loss of Fish Habitat (Waterbodies)	There are numerous waterbodies surrounding the Great Bear Project that are known to be frequented by fish. The OVB alternative locations have generally avoided large waterbodies, however, some of the alternatives would overprint smaller waterbodies (ponds / small lakes). The alternatives that overprint waterbodies would require that new fish habitat be constructed under the *Fisheries Act* to avoid adverse impacts to fish and fish habitat. Alternatives that avoid or minimize overprinting waterbodies are preferred.
			Loss of Fish Habitat (Watercourses)	There are watercourses (intermittent, and/or permanently flowing) around the Great Bear Project. Baseline studies are currently in progress, and it was assumed that these creeks are fish bearing or are potentially frequented by fish and overprinting these watercourses would affect fish and fish habitat, which would require new offsetting habitat to be constructed under the *Fisheries Act*. Alternatives that avoid or minimize overprinting watercourses are preferred.
			Number of Watercourse Crossings	Haul roads that cross watercourses have the potential to affect fish habitat by altering the watercourse embankments, channel and substrate characteristics. Vehicle traffic over crossings can further affect the quality of fish habitat. OVB alternatives that do not require water crossings are preferred.
	Atmospheric Emissions	Air and noise emissions resulting from construction and operation of the OVB could affect the ambient air, noise and light environments.	Noise Emissions	Construction and operation of the OVB will result in noise emissions that can increase ambient sound levels that could affect wildlife. OVB alternatives located in proximity to the open pits will generally limit noise to areas also affected by acoustic emissions from the open pit and are preferred.
			GHG Emissions	Emissions from the Project may add to global GHG emissions and ultimately contribute to climate change. OVB alternatives with reduced hauling requirements were assumed to emit less GHGs and are therefore preferred. GHG emissions were assumed to be proportional to the distance that the mine rock will be hauled, therefore GHG emissions will be evaluated based on haul distance, with shorter haul distances being preferred.
	Terrestrial and Water Resources	Habitat will be lost from OVB overprinting of the land, although some habitat can be restored at closure. The Great Bear Project terrestrial ecosystems vary within the general area. Alternatives with a more compact OVB footprint would have less of an impact on the terrestrial ecosystem and were preferred. Direct overprinting of the OVB to drainage channels or changes to the local flows and water levels can alter the localized hydrology in the area. These alterations may result in water quality that could harm aquatic species and other animals using the water and may potentially affect the traditional land use of the water.	OVB Footprint	The OVB will overprint the terrestrial ecosystems. The total footprint of the OVB is a good metric for estimating impacts to terrestrial ecosystems. In general, a smaller OVB footprint would have fewer effects on the terrestrial environment and is considered preferred.
			Number of Subcatchment Areas Affected	Great Bear Resources prefers to keep the majority of the OVB footprint within the minimum number of subcatchment areas to limit the potential extent of environmental effects, to the extent practicable. Alternatives that are located in a single subcatchment area are preferred to alternatives that overprint multiple subcatchment areas. Overprinting of multiple subcatchment areas could result in effects to the surface water and groundwater quantities. Subcatchments will be evaluated to major tributaries such as, Dixie Creek (North / South), Troutlake River, Chukuni River, etc.
			Haul / Access Road Corridor Footprint	OVB alternatives that are located further from the open pit increase the segregation of habitat areas and corridors used by wildlife. Road networks increase the likelihood of vehicle collisions with wildlife through and create physical barriers for wildlife. OVB Alternatives that are located closer to the process plant with smaller roads lengths are preferred and assumed to reduce these effects.
	Species at Risk	Some species are sensitive or at risk of disappearing in Ontario or in Canada and have been afforded special protections. During Baseline studies SAR were identified in the Project Area. Alternatives that have greater potential to harm these species (wolverine and bat SAR) should be avoided.	Direct Loss of Wolverine Habitat	During baseline studies, wolverine or evidence of wolverine were observed on the Property, with wolverine sightings captured on trail cameras. Wolverine that disperse across the landscape could be negatively affected by the proposed Project. Therefore, the loss wolverine habitat should be minimized. Alternatives that avoid the avoid potential wolverine habitat are preferred.
			Direct Loss of Caribou Habitat	The Project area is located in the Sydney Range for caribou which is federally and provincially regulated habitat for caribou. Provincial habitat mapping for Sydney Range has the property classified as Category 3 habitat. Category 3 areas are defined as having a high tolerance to alteration before the function is compromised. These areas indirectly support boreal caribou by maintaining (buffering) the overall predator refuge function within their range. They are comprised of currently young vegetation communities such as regenerating burn areas that are less than 40 years old. These areas are not generally occupied for long periods of time; however, boreal caribou may travel through them. Consistent with this Category 3 classification, baseline studies did not observe evidence of caribou on the Property. The loss of potential caribou habitat should be minimized with smaller TMF footprints, or footprints that avoid potential caribou habitat being preferred.
			Direct Loss of Avian SAR Habitat	During baseline studies a number of avian SAR were observed at the Property. Breeding habitat for avian SAR species should be avoided. The ecosites with confirmation of avian SAR habitat included marsh wetlands and shorelines, alternatives avoiding these areas are preferred.
			Direct Loss of Bat Foraging Habitat	The wetland, riparian and forest habitat in the Project area provides forage and maternity roosting habitat for SAR bats. The overprinting of these ecosites by the OVB will reduce / remove suitable habitat. The loss of SAR bat habitat should be minimized with alternatives that avoid bat habitat being preferred.
			Direct Loss of Maternity Roosting Habitat	

Table 9-3: Overburden Stockpile Accounts, Sub-Accounts and Indicators

Account	Subaccount	Subaccount Rationale	Indicator	Indicator Rationale
Technical	Design and Construction Factors	Engineering design factors for the OVB include some of the key contributions to the technical complexity of OVB alternatives. Alternatives that are less technically challenging, are likely to be characterized as lower risk are generally preferred.	Haul Distance	Long haul distance between the open pits / portal and OVB will result in increased Project footprint, the potential for increased dust / particulate emissions, long haul roads, and increased operational complexity. Locations closer to the open pits are preferred.
			Length of Perimeter Ditching	OVB alternatives that require less perimeter ditching will be preferred as they will require less construction effort and on-going maintenance. Alternatives with smaller ditch lengths are preferred.
	Technical Considerations	Great Bear Resources knows that safety is a primary concern when designing the OVB and as such, each alternative considered can be constructed to the minimum factor of safety. Water management also presents a potential operational complexity for the OVB. Alternatives requiring reduced water management infrastructure (i.e., collection basins, pipelines, pumps, etc.) being preferred.	Stockpile Height	It was generally assumed that there is proportional increase in potential consequence of OVB failure with an increase in stockpile height. It was assumed that taller facilities have greater potential energy to move materials. Lower stockpile heights are therefore considered to incur less risk and are the preferred.
			Complexity of Facility Water Management	OVB alternatives with simpler water management is preferred. An increased number of collection basins (runoff and seepage) basins can increase the cost and complexity of water management of an alternative. OVBs that minimize the number of catch basins are preferred.
Economics	Capital and Operational Cost Considerations	Capital costs required for the OVB are considered as part of the Project economics. Costs may include site access and costing associated with aquatic habitat offset / compensation.	Habitat Offset / Compensation Costs	Capital costs for the construction of aquatic habitat offset / compensation features can be substantial. These features are normally required to be constructed early in the project life, generally as or prior to the construction impacts are realized.
			Transportation of overburden to the OVB	The cost of transporting overburden to the OVB is proportional to the distance from the OVB to the open pits. Alternatives near the open pit are preferred.
			Haul / Access Road Construction Costs	During the construction phase, haul roads will be constructed from the open pit area to the OVB to allow for hauling mine rock during operations. Alternatives that are located closer to the open pits result in lower construction costs and are preferred.
	Closure Cost	Following cessation of operations, the OVB will be decommissioned and rehabilitation to a stable and more ecologically productive state, in accordance with the regulatory requirements. Higher closure costs associated with the OVB will increase the requirement for closure bonding and will ultimately affect overall Project economics.	OVB Cover and Reclamation Costs	At closure, the OVB will require management for the potential generation of ML/ARD which varies for the alternatives. Alternatives with lower reclamation costs are preferred.
			Road Reclamation Costs	Haul and access road infrastructure will need to be closed and reclaimed at closure. Alternatives with lower associated reclamation costs being preferred.
			Inspection / Maintenance / Operations / Monitoring Costs	Post closure costs will be approximately proportional to the footprint of the OVB. Smaller OVB footprints will likely result in lower cost and are preferred.
Socio-economic	Indigenous Land Use	Great Bear Resources recognizes that Indigenous engagement is an integral part of the process through the permitting / approval and design phases which are influenced by Indigenous values and Indigenous knowledge. Great Bear Resources continues to engage with Indigenous communities to better understand these values in order to design the Great Bear Project such that avoids or minimizes related effects to Indigenous Peoples.	Wild Rice Fields	During consultation for the Project, wild rice fields were identified as being of interest to Indigenous communities. However, wild rice fields observed in the Project area have not been confirmed to be used by Indigenous Peoples. Alternatives that avoid wild rice fields are generally preferred.
			Moose Late Wintering Habitat	During consultation for the Project, moose were identified as being of special importance to Indigenous communities. In the Project are, Moose use the habitat for both late wintering and foraging. Both habitat types were considered, with alternatives that avoid moose habitat being preferred.
			Moose Foraging Habitat	
			Loss of Indigenous Land Uses	The lands around the Project may be used by Indigenous communities to support trapping, hunting and harvesting of traditional foods. OVB alternatives with larger terrestrial footprints will remove a greater footprint of land that may have been used for hunting and harvesting of traditional foods. Alternatives that affect less potential undisturbed areas that may support Indigenous land uses including fishing, hunting areas (moose) and potential plant (berry) harvesting areas are preferred.

Table 9-4: Overburden Stockpile Alternative Characterization

Account	Indicator	Parameter	Unit	Alternative C	Alternative D	Alternative E	Alternative F
Environmental	Loss of Fish Habitat (Waterbodies)	Area of waterbodies overprinted	ha	0.0	0.0	0.0	0.0
	Loss of Fish Habitat (Watercourses)	Length of stream loss of potential fish habitat	km	0.9	0.7	0.0	1.8
	Number of Watercourse Crossings	Number of watercourse crossings	#	2	1	0	0
	Noise Emissions	Distance open pit to OVB	km	2.3	2.5	1.3	0.3
	GHG Emissions	Haul distance	km	3.0	3.0	3.5	1.0
	OVB Footprint	OVB footprint	ha	149.4	148.4	163.6	127.0
	Number of Subcatchment Areas Affected	Number of Subcatchment	#	4	2	2	2
	Haul / Access Road Corridor Footprint	Road footprint	ha	4.7	5.0	2.6	0.7
	Direct Loss of Wolverine Habitat	Loss of wolverine habitat	ha	44.4	33.2	53.1	7.0
	Direct Loss of Caribou Habitat	Loss of caribou habitat	ha	95.0	74.3	151.8	68.3
	Direct Loss of Avian SAR Habitat	Loss of avian SAR breeding habitat	ha	149.4	148.4	163.6	127.0
	Direct Loss of Bat Foraging Habitat	Loss of bat foraging habitat	ha	46.5	36.1	88.0	8.9
	Direct Loss of Maternity Roosting Habitat	Loss of bat maternity roosting habitat	ha	147.4	145.6	128.7	125.5
Technical	Haul Distance	Haul distance	km	3.0	3.0	3.5	1.0
	Length of Perimeter Ditching	Ditch length	km	7.2	5.4	7.1	2.3
	Stockpile Height	Height of the OVB	m	39.0	39.0	19.0	25.0
	Complexity of Facility Water Management	Number of collection basins	#	11	8	8	0
Economics	Habitat Offset / Compensation Costs	Cost (millions)	$	$1.0	$0.7	$0.0	$2.0
	Transportation of Overburden to the OVB	Haul distance	km	3.0	3.0	3.5	1.0
	Haul / Access Road Construction Costs	Cost (millions)	$	$2.2	$2.2	$2.2	$1.6
	OVB Reclamation Costs	Cost (millions)	$	$5.2	$5.2	$5.7	$4.4
	Inspection / Maintenance / Operations / Monitoring Costs	OVB footprint	ha	149.4	148.4	163.6	127.0
	Road Reclamation Costs	Cost	$	$0.047	$0.050	$0.026	$0.007
Socio-economic	Wild Rice	Loss of wild rice fields	ha	0.0	0.0	0.0	0.0
	Moose Late Wintering Habitat	Loss of moose late wintering habitat	ha	148.6	145.6	163.6	127.0
	Moose Foraging Habitat	Loss of moose foraging habitat	ha	0.8	2.8	35.0	1.5
	Loss of Indigenous Land Uses	OVB footprint	ha	149.4	148.4	163.6	127.0

Table 9-5: Overburden Stockpile Valuating Criteria

Account	Indicator	Parameter	Indicator Value					
			6 (Best)	5	4	3	2	1 (Worst)
Environmental	Loss of Fish Habitat (Waterbodies)	Area of waterbodies overprinted	0 ha	0.1 to 0.2 ha	0.3 to 0.4 ha	0.5 to 0.7 ha	0.8 to 0.9 ha	≥1.0 ha
	Loss of Fish Habitat (Watercourses)	Length of stream loss of potential fish habitat	0 km	0.1 to 0.2 km	0.3 to 0.4 km	0.5 to 0.7 km	0.8 to 0.9 km	≥1.0 km
	Number of Watercourse Crossings	Number of watercourse crossings	0	1	2	3	4	5
	Noise Emissions	Distance open pit to OVB	<1.0 km	1.0 to 1.3 km	1.4 to 1.7 km	1.8 to 2.0 km	2.1 to 2.4 km	≥2.5 km
	GHG Emissions	Haul distance	<1.5 km	1.5 to 1.9 km	2.0 to 2.4 km	2.5 to 2.9 km	3.0 to 3.4 km	≥3.5 km
	OVB Footprint	OVB footprint	<130.0 ha	130.0 to 137.4 ha	137.5 to 144.9 ha	145.0 to 152.4 ha	152.5 to 159.9 ha	≥160.0 ha
	Number of Subcatchment Areas Affected	Number of Subcatchments	1	2	3	4	5	6
	Haul / Access Road Corridor Footprint	Road footprint	<1.0 ha	1.0 to 1.9 ha	2.0 to 2.9 ha	3.0 to 3.9 ha	4.0 to 4.9 ha	≥5.0 ha
	Direct Loss of Wolverine Habitat	Loss of wolverine habitat	<10.0 ha	10.0 to 19.9 ha	20.0 to 29.9 ha	30.0 to 39.9 ha	40.0 to 49.9 ha	≥50.0 ha
	Direct Loss of Caribou Habitat	Loss of caribou habitat	<70.0 ha	70.0 to 89.9 ha	90.0 to 109.9 ha	110.0 to 129.9 ha	130.0 to 149.9 ha	≥150.0 ha
	Direct Loss of Avian SAR Habitat	Loss of avian SAR breeding habitat	<130.0 ha	130.0 to 137.4 ha	137.5 to 144.9 ha	145.0 to 152.4 ha	152.5 to 159.9 ha	≥160.0 ha
	Direct Loss of Bat Foraging Habitat	Loss of bat foraging habitat	<10.0 ha	10.0 to 27.4 ha	27.5 to 44.9 ha	45.0 to 62.4 ha	62.5 to 79.9 ha	≥80.0 ha
	Direct Loss of Maternity Roosting Habitat	Loss of bat maternity roosting habitat	<125.0 ha	125.0 to 129.9 ha	130.0 to 134.9 ha	135.0 to 139.9 ha	140.0 to 144.9 ha	≥145.0 ha
Technical	Haul Distance	Haul distance	<1.5 km	1.5 to 1.9 km	2.0 to 2.4 km	2.5 to 2.9 km	3.0 to 3.4 km	≥3.5 km
	Length of Perimeter Ditching	Ditch length	<1.0 km	1.0 to 2.4 km	2.5 to 3.9 km	4.0 to 5.4 km	5.5 to 6.9 km	≥7.0 km
	Stockpile Height	Height of the OVB	<20.0 m	20.0 to 23.7 m	23.8 to 27.4 m	27.5 to 31.2 m	31.3 to 34.9 m	≥35.0 m
	Complexity of Facility Water Management	Number of collection basins	<2	2 to 3	4 to 6	7 to 8	9 to 10	≥11
Economics	Habitat Offset / Compensation Costs	Cost (millions)	<$0.5	$0.5 to $0.8	$0.9 to $1.2	$1.3 to $1.5	$1.6 to $1.9	≥$2.0
	Transportation of Overburden to the OVB	Haul distance	<1.5 km	1.5 to 1.9 km	2.0 to 2.4 km	2.5 to 2.9 km	3.0 to 3.4 km	≥3.5 km
	Haul / Access Road Construction Costs	Cost (millions)	<$0.5	$0.5 to $0.8	$0.9 to $1.2	$1.3 to $1.5	$1.6 to $1.9	≥$2.0
	OVB Reclamation Costs	Cost (millions)	<$0.5	$0.5 to $1.5	$1.6 to $2.7	$2.8 to $3.8	$3.9 to $4.9	≥$5.0
	Inspection / Maintenance / Operations / Monitoring Costs	OVB footprint	<130.0 ha	130.0 to 137.4 ha	137.5 to 144.9 ha	145.0 to 152.4 ha	152.5 to 159.9 ha	≥160.0 ha
	Road Reclamation Costs	Cost	<$0.010	$0.010 to $0.019	$0.020 to $0.029	$0.030 to $0.039	$0.040 to $0.049	≥$0.050
Socio-economic	Wild Rice	Loss of wild rice fields	<0.4 ha	0.4 to 0.7 ha	0.8 to 1.1 ha	1.2 to 1.5 ha	1.6 to 1.9 ha	≥2.0 ha
	Moose Late Wintering Habitat	Loss of moose late wintering habitat	<130.0 ha	130.0 to 137.4 ha	137.5 to 144.9 ha	145.0 to 152.4 ha	152.5 to 159.9 ha	≥160.0 ha
	Moose Foraging Habitat	Loss of moose foraging habitat	<1.0 ha	1.0 to 8.2 ha	8.3 to 15.4 ha	15.5 to 22.7 ha	22.8 to 29.9 ha	≥30.0 ha
	Loss of Indigenous Land Uses	OVB footprint	<130.0 ha	130.0 to 137.4 ha	137.5 to 144.9 ha	145.0 to 152.4 ha	152.5 to 159.9 ha	≥160.0 ha

Table 9-6: Overburden Weights and Scores for Multiple Accounts Analysis

Account	Weight	Subaccount	Weight	Indicator	Weight	Alternative C	Alternative D	Alternative E	Alternative F
Environmental	6	Fisheries Resources	6	Loss of Fish Habitat (Waterbodies)	6	6	6	6	6
				Loss of Fish Habitat (Watercourses)	6	2	3	6	1
				Number of Watercourse Crossings	2	4	5	6	6
		Atmospheric Emissions	3	Noise Emissions	2	2	1	5	6
				GHG Emissions	3	2	2	1	6
		Terrestrial and Water Resources	3	OVB Footprint	5	3	3	1	6
				Number of Subcatchment Areas Affected	6	3	5	5	5
				Haul / Access Road Corridor Footprint	2	2	1	4	6
		Species at Risk	3	Direct Loss of Wolverine Habitat	4	2	3	1	6
				Direct Loss of Caribou Habitat	3	4	5	1	6
				Direct Loss of Avian SAR Habitat	2	3	3	1	6
				Direct Loss of Bat Foraging Habitat	2	3	4	1	6
				Direct Loss of Maternity Roosting Habitat	2	1	1	5	5
Technical	3	Design and Construction Factors	6	Haul Distance	2	2	2	1	6
				Length of Perimeter Ditching	4	1	3	1	6
		Technical Considerations	4	Stockpile Height	4	1	1	6	4
				Complexity of Facility Water Management	3	1	3	3	6
Economics	1.5	Capital and Operational Cost Considerations	3	Habitat Offset / Compensation Costs	4	4	5	6	1
				Transportation of Mine Rock to the OVB	6	2	2	1	6
				Haul / Access Road Construction Costs	2	1	1	1	2
		Closure Cost	5	OVB Reclamation Costs	5	1	1	1	2
				Road Reclamation Costs	2	5	1	4	6
				Inspection / Maintenance / Operations / Monitoring Costs	3	3	3	1	6
Socio-economic	3	Indigenous Land Use	4	Wild Rice	2	6	6	6	6
				Moose Late Wintering Habitat	3	3	3	1	6
				Moose Foraging Habitat	3	6	5	1	5
				Loss of Indigenous Land Uses	4	3	3	1	6

Table 9-7: Overburden Stockpile Environment Indicators

Sub-Account	Indicator	Weight	Alternative C		Alternative D		Alternative E		Alternative F	
			Value	Score	Value	Score	Value	Score	Value	Score
Fisheries Resources	Loss of Fish Habitat (Waterbodies)	6	6	36	6	36	6	36	6	36
	Loss of Fish Habitat (Watercourses)	6	2	12	3	18	6	36	1	6
	Number of Watercourse Crossings	2	4	8	5	10	6	12	6	12
	Sub Account Merit Score (S{S x W})		56		64		84		54	
	Sub Account Merit Rating (Rs = S{S x W}/SW)		*4.0*		*4.6*		*6.0*		*3.9*	
Atmospheric Emissions	Noise Emissions	2	2	4	1	2	5	10	6	12
	GHG Emissions	3	2	6	2	6	1	3	6	18
	Sub Account Merit Score (S{S x W})		10		8		13		30	
	Sub Account Merit Rating (Rs = S{S x W}/SW)		*2.0*		*1.6*		*2.6*		*6.0*	
Terrestrial and Water Resources	OVB Footprint	5	3	15	3	15	1	5	6	30
	Number of Subcatchment Areas Affected	6	3	18	5	30	5	30	5	30
	Haul/Access Road Corridor Footprint	2	2	4	1	2	4	8	6	12
	Sub Account Merit Score (S{S x W})		37		47		43		72	
	Sub Account Merit Rating (Rs = S{S x W}/SW)		*2.8*		*3.6*		*3.3*		*5.5*	
Species at Risk	Direct Loss of Wolverine Habitat	4	2	8	3	12	1	4	6	24
	Direct Loss of Caribou Habitat	3	4	12	5	15	1	3	6	18
	Direct Loss of Avian SAR Habitat	2	3	6	3	6	1	2	6	12
	Direct Loss of Bat Foraging Habitat	2	3	6	4	8	1	2	6	12
	Direct Loss of Maternity Roosting Habitat	2	1	2	3	6	5	10	5	10
	Sub Account Merit Score (S{S x W})		34		47		21		76	
	Sub Account Merit Rating (Rs = S{S x W}/SW)		*2.6*		*3.6*		*1.6*		*5.8*	

Table 9-8: Overburden Stockpile Technical Indicators

Sub-Account	Indicator	Weight	Alternative C		Alternative D		Alternative E		Alternative F	
			Value	Score	Value	Score	Value	Score	Value	Score
Design and Construction Factors	Haul Distance	2	2	4	2	4	1	2	6	12
	Length of Perimeter Ditching	4	1	4	3	12	1	4	6	24
	Sub Account Merit Score (S{S x W})		8		16		6		36	
	Sub Account Merit Rating (Rs = S{S x W}/SW)		*1.3*		*2.7*		*1.0*		*6.0*	
Technical Considerations	Stockpile Height	4	1	4	1	4	6	24	4	16
	Complexity of Facility Water Management	3	1	3	3	9	3	9	6	18
	Sub Account Merit Score (S{S x W})		7		13		33		34	
	Sub Account Merit Rating (Rs = S{S x W}/SW)		*1.0*		*1.9*		*4.7*		*4.9*	

Table 9-9: Overburden Stockpile Project Economic Indicators

Sub-Account	Indicator	Weight	Alternative C		Alternative D		Alternative E		Alternative F	
			Value	Score	Value	Score	Value	Score	Value	Score
Capital and Operational Cost Considerations	Habitat Offset/Compensation Costs	4	4	16	5	20	6	24	1	4
	Transportation of Mine Rock to the OVB	6	2	12	2	12	1	6	6	36
	Haul / Access Road Construction Costs	2	1	2	1	2	1	2	2	4
	Sub Account Merit Score (S{S x W})		30		34		32		44	
	Sub Account Merit Rating (Rs = S{S x W}/SW)		*2.5*		*2.8*		*2.7*		*3.7*	
Closure Cost	OVB Reclamation Costs	5	1	5	1	5	1	5	2	10
	Inspection / Maintenance / Operation / Monitoring Costs	3	3	9	3	9	1	3	6	18
	Road Reclamation Costs	2	5	10	1	2	4	8	6	12
	Sub Account Merit Score (S{S x W})		24		16		16		40	
	Sub Account Merit Rating (Rs = S{S x W}/SW)		*2.4*		*1.6*		*1.6*		*4.0*	

Table 9-10: Overburden Stockpile Socio-economic Indicators

Sub-Account	Indicator	Weight	Alternative C		Alternative D		Alternative E		Alternative F	
			Value	Score	Value	Score	Value	Score	Value	Score
Indigenous Land Use	Wild Rice	2	6	12	6	12	6	12	6	12
	Moose Late Wintering Habitat	3	3	9	3	9	1	3	6	18
	Moose Foraging Habitat	3	6	18	5	15	1	3	5	15
	Loss of Indigenous Land Use	4	3	12	3	12	1	4	6	24
	Sub Account Merit Score (S{S x W})		51		48		22		69	
	Sub Account Merit Rating (Rs = S{S x W}/SW)		*4.3*		*4.0*		*1.8*		*5.8*	

Table 9-11: Overburden Stockpile Environment Sub-Account Analysis

Sub-Account	Weight	Alternative C		Alternative D		Alternative E		Alternative F	
		Rating	Score	Rating	Score	Rating	Score	Rating	Score
Fisheries Resources	6	4.0	24.0	4.6	27.4	6.0	36.0	3.9	23.1
Atmospheric Emissions	3	2.0	6.0	1.6	4.8	2.6	7.8	6.0	18.0
Terrestrial and Water Resources	3	2.8	8.5	3.6	10.8	3.3	9.9	5.5	16.6
Species at Risk	3	2.6	7.8	3.6	10.8	1.6	4.8	5.8	17.5
Account Merit Score		46.4		53.9		58.6		75.3	
Account Merit Rating		*3.1*		*3.6*		*3.9*		*5.0*	

Table 9-12: Overburden Stockpile Technical Sub-Account Analysis

Sub-Account	Weight	Alternative C		Alternative D		Alternative E		Alternative F	
		Rating	Score	Rating	Score	Rating	Score	Rating	Score
Design and Construction Factors	6	1.3	8.0	2.7	16.0	1.0	6.0	6.0	36.0
Technical Considerations	4	1.0	4.0	1.9	7.4	4.7	18.9	4.9	19.4
Account Merit Score		12.0		23.4		24.9		55.4	
Account Merit Rating		*1.2*		*2.3*		*2.5*		*5.5*	

Table 9-13: Overburden Stockpile Project Economic Sub-Account Analysis

Sub-Account	Weight	Alternative C		Alternative D		Alternative E		Alternative F	
		Rating	Score	Rating	Score	Rating	Score	Rating	Score
Capital and Operational Cost Considerations	3	2.5	7.5	2.8	8.5	2.7	8.0	3.7	11.0
Closure Cost	5	2.4	12.0	1.6	8.0	1.6	8.0	4.0	20.0
Account Merit Score		19.5		16.5		16.0		31.0	
Account Merit Rating		*2.4*		*2.1*		*2.0*		*3.9*	

Table 9-14: Overburden Stockpile Socio-economic Sub-Account Analysis

Sub-Account	Weight	Alternative C		Alternative D		Alternative E		Alternative F	
		Rating	Score	Rating	Score	Rating	Score	Rating	Score
Indigenous Land Use	4	4.3	17.0	4.0	16.0	1.8	7.3	5.8	23.0
Account Merit Score		17.0		16.0		7.3		23.0	
Account Merit Rating		*4.3*		*4.0*		*1.8*		*5.8*	

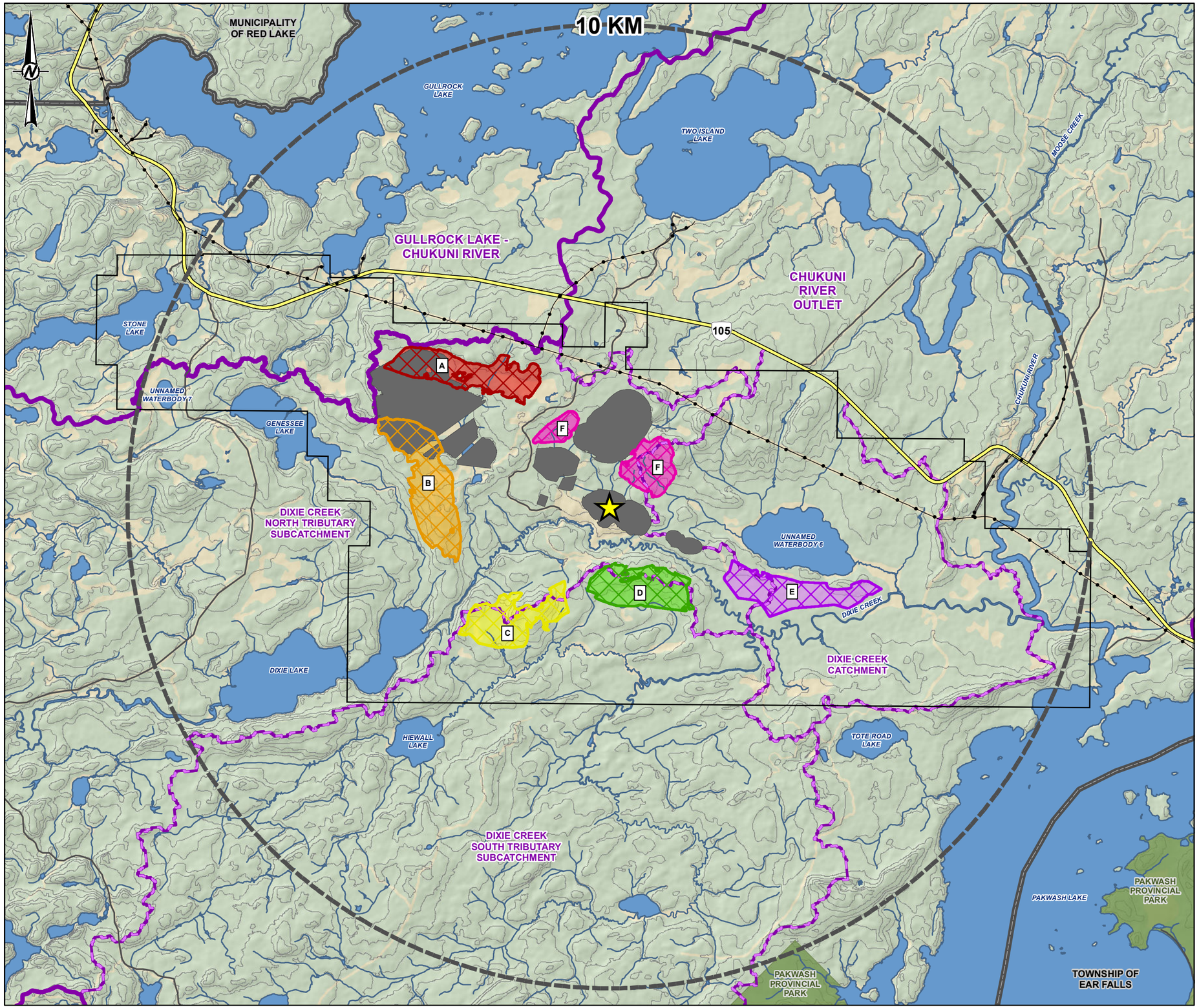
Table 9-15: Overburden Stockpile Multiple Accounts Analysis Summary

Account	Weight	Alternative C		Alternative D		Alternative E		Alternative F	
		Rating	Score	Rating	Score	Rating	Score	Rating	Score
Environment	6	3.1	18.6	3.6	21.6	3.9	23.4	5.0	30.1
Technical	3	1.2	3.6	2.3	7.0	2.5	7.5	5.5	16.6
Project Economics	1.5	2.4	3.7	2.1	3.1	2.0	3.0	3.9	5.8
Socio-economic	3	4.3	12.8	4.0	12.0	1.8	5.5	5.8	17.3
Alternative Merit Score		38.6		43.7		39.4		69.8	
Alternative Merit Rating		*2.9*		*3.2*		*2.9*		*5.2*	

Table 9-16: Overburden Stockpile Sensitivity Analysis

	Alternative C	Alternative D	Alternative E	Alternative F
Base Case	2.9	3.2	2.9	**5.2**
Case 1	2.7	3.0	2.6	**5.0**
Case 2	2.8	3.0	2.7	**5.1**
Case 3	3.3	3.5	2.8	**5.3**
Case 4	2.8	3.3	2.9	**5.3**
Case 5	2.9	3.4	3.0	**5.3**

Notes:
***Bold** indicates preferred Alternative*



LEGEND

- APPROXIMATE OPEN PIT CENTROID
- KEY MINE FEATURE (OPEN PIT, TAILINGS MANAGEMENT FACILITY, MINE ROCK STOCKPILE, LOW GRADE ORE STOCKPILE AND MINE WATER POND)
- OPEN PIT CENTROID BUFFER (LABELED ON MAP)
- PROPERTY BOUNDARY
- PROVINCIAL PARK
- EXISTING TRANSMISSION LINE
- HIGHWAY
- LOCAL ROAD
- LOWER TIER MUNICIPAL BOUNDARY
- WATERCOURSE
- WATERBODY
- CONTOURS (10 M INTERVAL)
- QUATERNARY CATCHMENT
- DIXIE CREEK SUBCATCHMENT

OVERBURDEN STOCKPILE ALTERNATIVES

- ALTERNATIVE A
- ALTERNATIVE B
- ALTERNATIVE C
- ALTERNATIVE D
- ALTERNATIVE E
- ALTERNATIVE F

0 1 2 4

1:80,000 KILOMETRES

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)

1. CONTAINS INFORMATION LICENSED UNDER THE OPEN GOVERNMENT LICENCE - ONTARIO
2. WATERCOURSES AND WATERBODY ACQUIRED FROM LAND INFORMATION ONTARIO (MNRF) AND MODIFIED TO MATCH AERIAL IMAGERY AND LIDAR.
3. ROADS INFORMATION PROVIDED BY GREAT BEAR RESOURCES, AUGUST 2022.
4. PROPERTY BOUNDARY PROVIDED BY GREAT BEAR RESOURCES, AUGUST 2024.
5. COORDINATE SYSTEM: NAD 1983 UTM ZONE 15N

CLIENT
GREAT BEAR RESOURCES

PROJECT
GREAT BEAR PROJECT

TITLE
OVERBURDEN STOCKPILE ALTERNATIVE SITE LOCATIONS

CONSULTANT

wsp

YYYY-MM-DD	2025-08-08
DESIGNED	----
PREPARED	MD
REVIEWED	HL
APPROVED	DR

PROJECT NO.	CONTROL	REV.	FIGURE
CA0031271	0001	A	9-1

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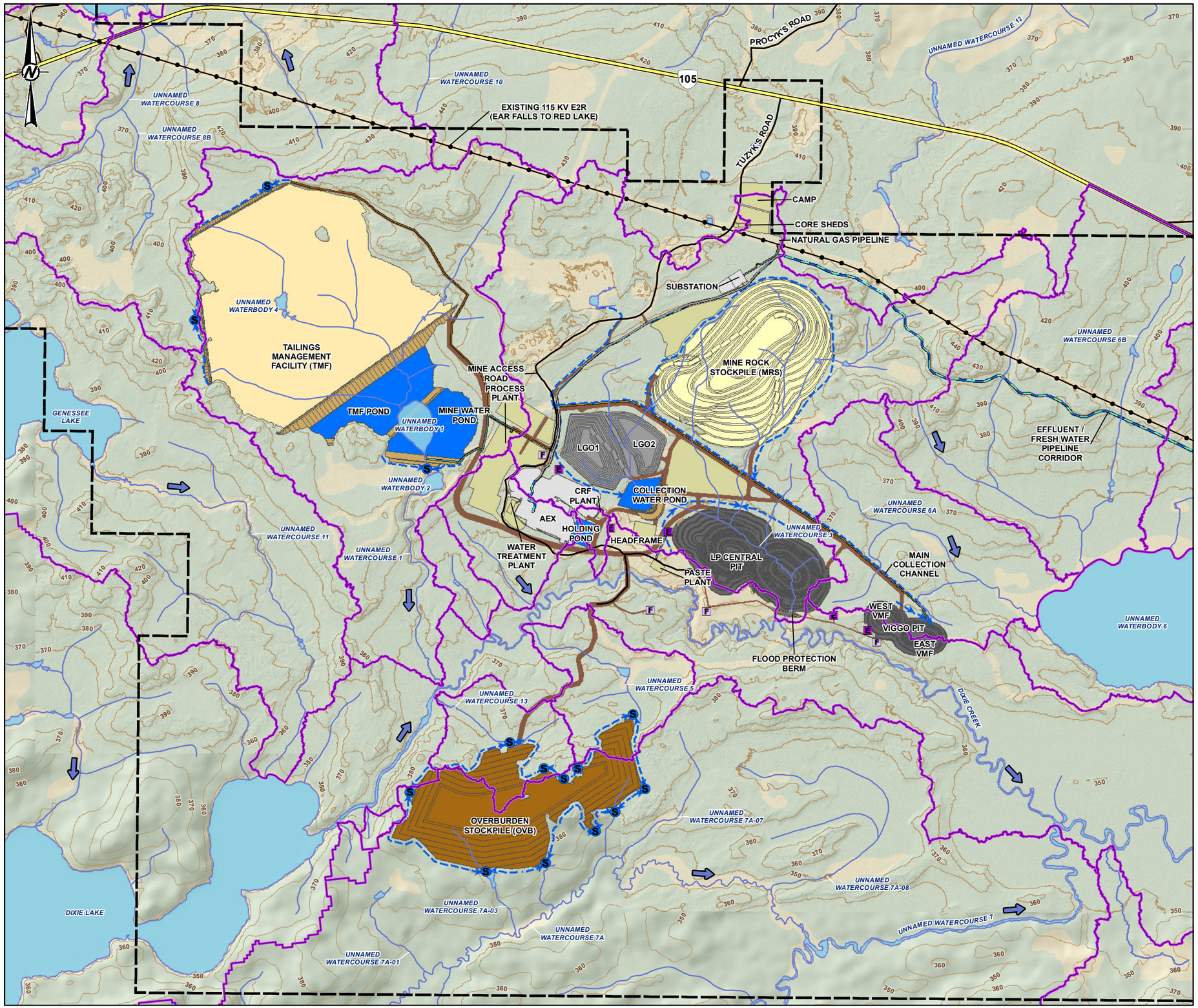

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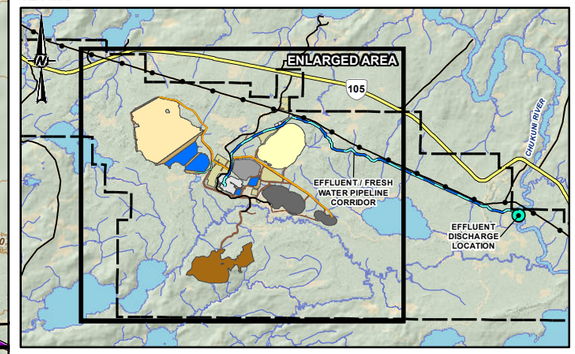

SCALE 1:200,000

LEGEND

- PROPERTY BOUNDARY
- HIGHWAY (INCLUDING NATURAL GAS PIPELINE)
- LOCAL ROAD
- EXISTING TRANSMISSION LINE
- LOCAL SUBCATCHMENT
- WATERCOURSE
- WATERBODY
- CONTOURS (10 M INTERVAL)
- FLOW DIRECTION

PROPOSED MINE FEATURE

- OPEN PIT
- MINE ROCK STOCKPILE (MRS)
- LOW GRADE ORE STOCKPILE (LGO)
- OVERBURDEN STOCKPILE (OVB)
- TAILINGS MANAGEMENT FACILITY (TMF)
- SUMP
- COLLECTION DITCH
- MINE FACILITIES / INFRASTRUCTURE
- DAM
- POND
- ROAD
- ADVANCED EXPLORATION SITE (AEX)
- EXHAUST VENT RAISE
- FRESH AIR VENT RAISE
- TRANSMISSION LINE
- RECLAIM PIPELINE
- TAILINGS PIPELINE
- PASTE PLANT PIPELINE
- EFFLUENT / FRESH WATER PIPELINE CORRIDOR
- EFFLUENT DISCHARGE LOCATION

0 0.5 1 2
1:35,000 KILOMETRES

NOTE(S)
1. ALL LOCATIONS ARE APPROXIMATE
2. VMF: VIGGO MANAGEMENT FACILITY

REFERENCE(S)
1. CONTAINS INFORMATION LICENSED UNDER THE OPEN GOVERNMENT LICENCE - ONTARIO
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5. SITE PLAN BASED ON INFORMATION PROVIDED BY GREAT BEAR RESOURCES, DECEMBER 2024 / JUNE 2025.
6. SUBCATCHMENT BOUNDARIES DELINEATED USING 2022 LIDAR AND THE ONTARIO FLOW ASSESSMENT TOOL (MNRF).
7. COORDINATE SYSTEM: NAD 1983 UTM ZONE 15N

CLIENT
GREAT BEAR RESOURCES

PROJECT
GREAT BEAR PROJECT

TITLE
OVERBURDEN STOCKPILE ALTERNATIVE C CONFIGURATION

CONSULTANT
wsp

YYYY-MM-DD	2025-08-08
DESIGNED	----
PREPARED	MD
REVIEWED	HL
APPROVED	DR

PROJECT NO.	CONTROL	REV.	FIGURE
CA0031271	0001	A	9-2

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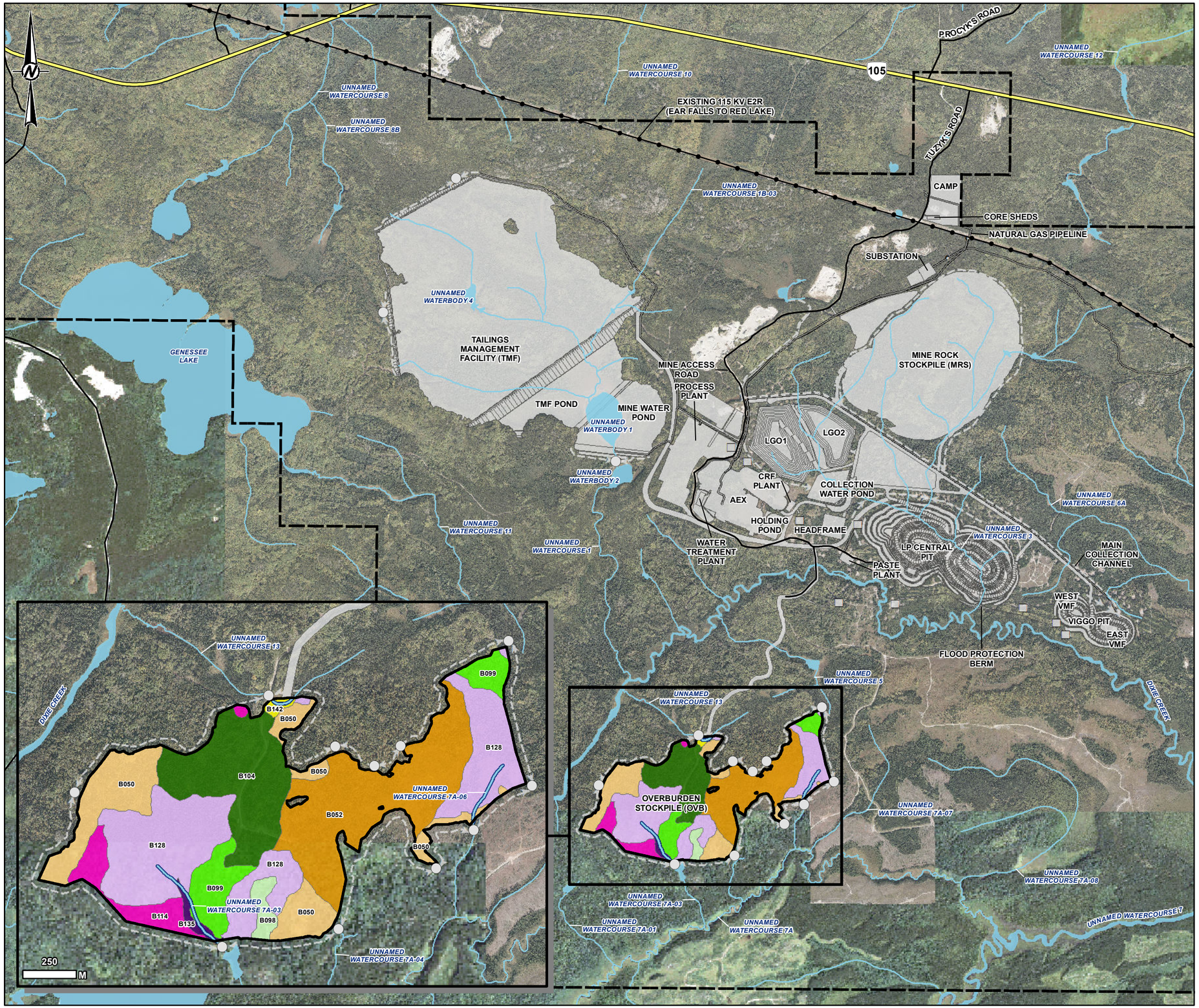

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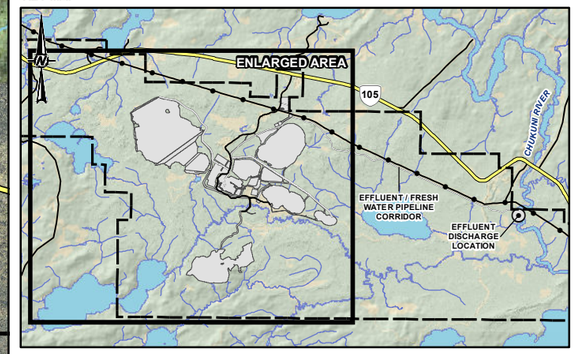

SCALE 1:200,000

LEGEND

- PROPERTY BOUNDARY
- PROPOSED OVERBURDEN STOCKPILE (OVB)
- OTHER PROPOSED MINE FEATURE
- HIGHWAY (INCLUDING NATURAL GAS PIPELINE)
- LOCAL ROAD
- EXISTING TRANSMISSION LINE
- WATERCOURSE
- WATERBODY
- IMPACTED WATERCOURSE

IMPACTED VEGETATION COMMUNITY

- B050: *DRY TO FRESH, COARSE: PINE - BLACK SPRUCE CONIFER*
- B052: *DRY TO FRESH, COARSE: SPRUCE - FIR CONIFER*
- B098: *FRESH, SILTY TO FINE LOAMY: JACK PINE - BLACK SPRUCE DOMINATED*
- B099: *FRESH, SILTY TO FINE LOAMY: PINE - BLACK SPRUCE CONIFER*
- B104: *FRESH, SILTY TO FINE LOAMY: ASPEN - BIRCH HARDWOOD*
- B114: *MOIST, FINE: PINE - BLACK SPRUCE CONIFER*
- B128: *ORGANIC INTERMEDIATE CONIFER SWAMP*
- B135: *ORGANIC THICKET SWAMP*
- B142: *MINERAL MEADOW MARSH*

0 0.5 1 2
1:35,000 KILOMETRES

NOTE(S)
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6. COORDINATE SYSTEM: NAD 1983 UTM ZONE 15N

CLIENT
GREAT BEAR RESOURCES

PROJECT
GREAT BEAR PROJECT

TITLE
OVERBURDEN STOCKPILE ALTERNATIVE C VEGETATION COMMUNITIES AND FISHERIES RESOURCES

CONSULTANT

YYYY-MM-DD	2025-08-11
DESIGNED	----
PREPARED	MD
REVIEWED	HL
APPROVED	DR

PROJECT NO.	CONTROL	REV.	FIGURE
CA0031271	0001	A	9-3

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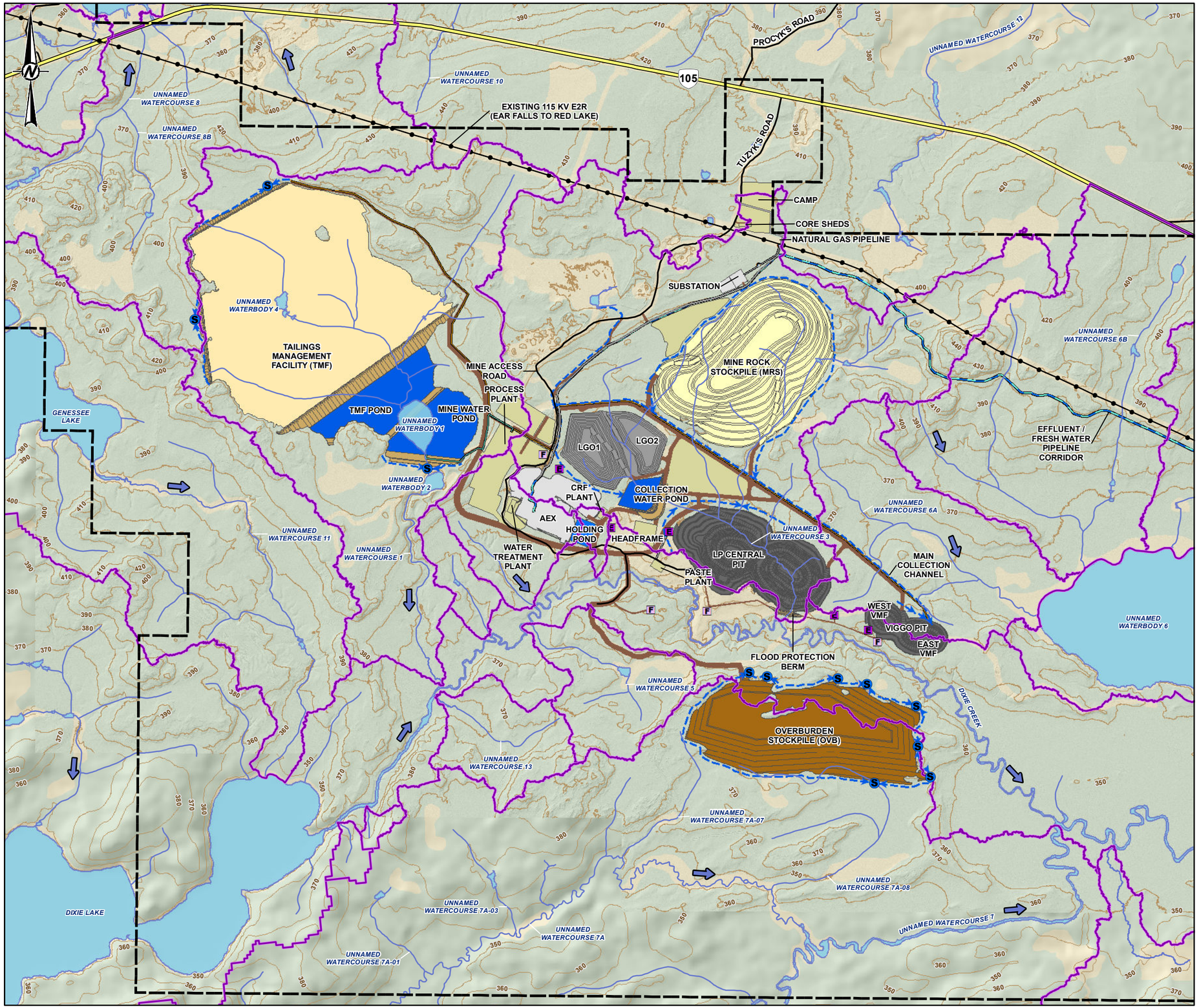

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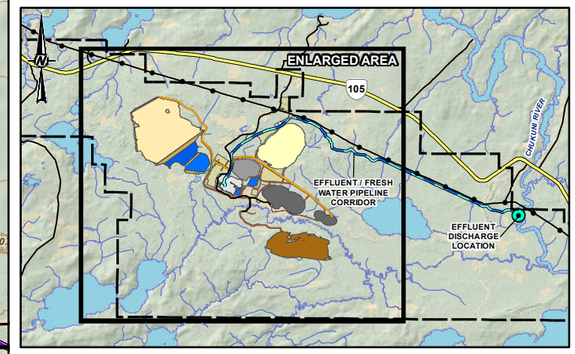

SCALE 1:200,000

LEGEND

- PROPERTY BOUNDARY
- HIGHWAY (INCLUDING NATURAL GAS PIPELINE)
- LOCAL ROAD
- EXISTING TRANSMISSION LINE
- LOCAL SUBCATCHMENT
- WATERCOURSE
- WATERBODY
- CONTOURS (10 M INTERVAL)
- FLOW DIRECTION

PROPOSED MINE FEATURE

- OPEN PIT
- MINE ROCK STOCKPILE (MRS)
- LOW GRADE ORE STOCKPILE (LGO)
- OVERBURDEN STOCKPILE (OVB)
- TAILINGS MANAGEMENT FACILITY (TMF)
- SUMP
- COLLECTION DITCH
- MINE FACILITIES / INFRASTRUCTURE
- DAM
- POND
- ROAD
- ADVANCED EXPLORATION SITE (AEX)
- EXHAUST VENT RAISE
- FRESH AIR VENT RAISE
- TRANSMISSION LINE
- RECLAIM PIPELINE
- TAILINGS PIPELINE
- PASTE PLANT PIPELINE
- EFFLUENT / FRESH WATER PIPELINE CORRIDOR
- EFFLUENT DISCHARGE LOCATION

0 0.5 1 2
1:35,000 KILOMETRES

NOTE(S)
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7. COORDINATE SYSTEM: NAD 1983 UTM ZONE 15N

CLIENT
GREAT BEAR RESOURCES

PROJECT
GREAT BEAR PROJECT

TITLE
OVERBURDEN STOCKPILE ALTERNATIVE D CONFIGURATION

CONSULTANT
wsp

YYYY-MM-DD	2025-08-08
DESIGNED	----
PREPARED	MD
REVIEWED	HL
APPROVED	DR

PROJECT NO.	CONTROL	REV.	FIGURE
CA0031271	0001	A	9-4

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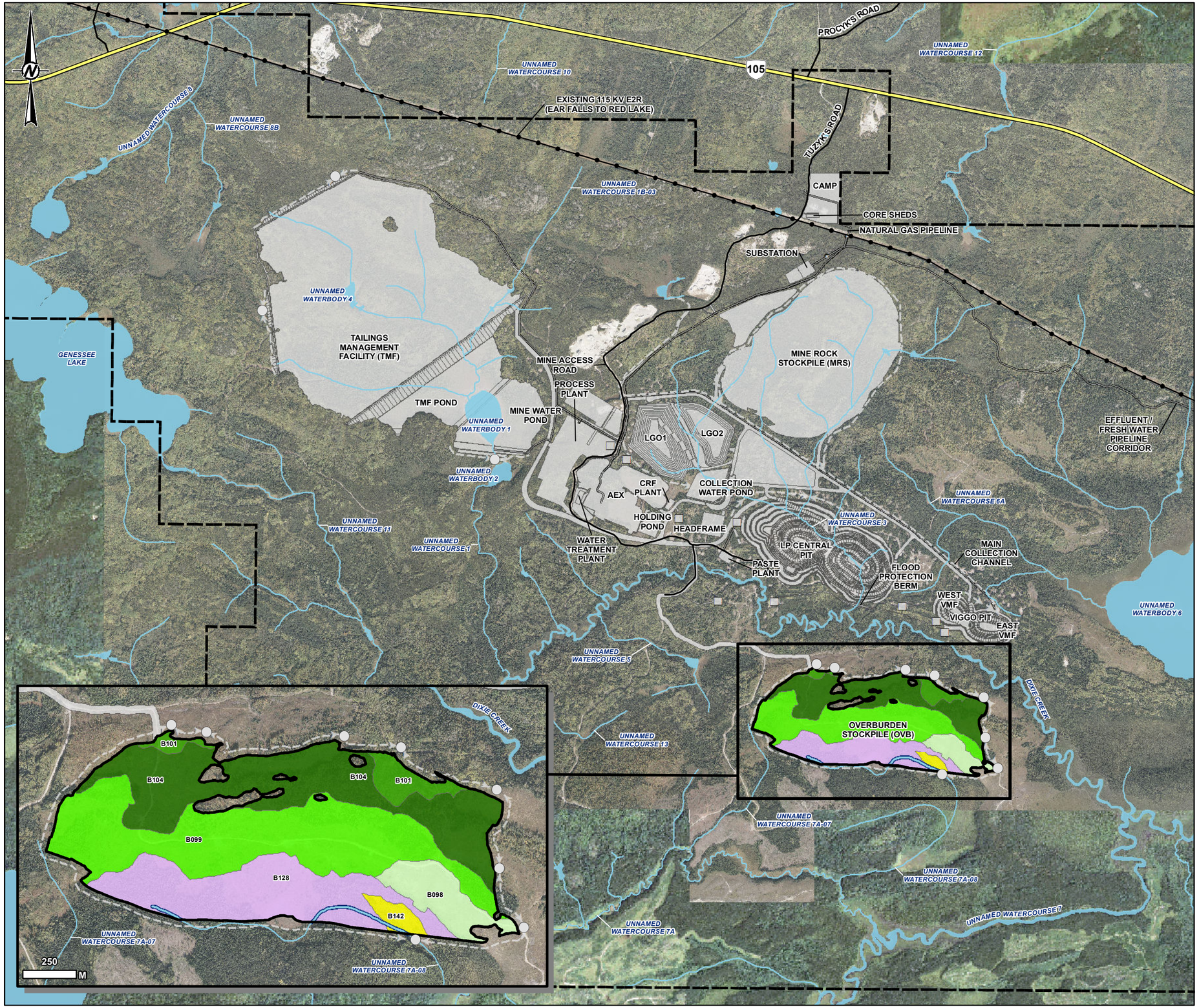

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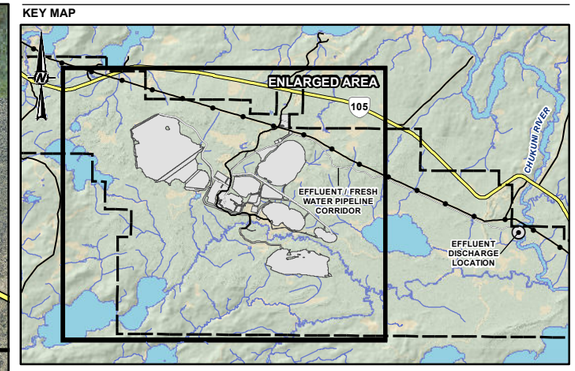

SCALE 1:200,000

LEGEND

- PROPERTY BOUNDARY
- PROPOSED OVERBURDEN STOCKPILE (OVB)
- OTHER PROPOSED MINE FEATURE
- HIGHWAY (INCLUDING NATURAL GAS PIPELINE)
- LOCAL ROAD
- EXISTING TRANSMISSION LINE
- WATERCOURSE
- WATERBODY
- IMPACTED WATERCOURSE

IMPACTED VEGETATION COMMUNITY

- B098: *FRESH, SILTY TO FINE LOAMY: JACK PINE - BLACK SPRUCE DOMINATED*
- B099: *FRESH, SILTY TO FINE LOAMY: PINE - BLACK SPRUCE CONIFER*
- B101: *FRESH, SILTY TO FINE LOAMY: SPRUCE - FIR CONIFER*
- B104: *FRESH, SILTY TO FINE LOAMY: ASPEN - BIRCH HARDWOOD*
- B128: *ORGANIC INTERMEDIATE CONIFER SWAMP*
- B142: *MINERAL MEADOW MARSH*

0 0.5 1 2

1:35,000 KILOMETRES

NOTE(S)

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6. COORDINATE SYSTEM: NAD 1983 UTM ZONE 15N

CLIENT
GREAT BEAR RESOURCES

PROJECT
GREAT BEAR PROJECT

TITLE
OVERBURDEN STOCKPILE ALTERNATIVE D VEGETATION COMMUNITIES AND FISHERIES RESOURCES

CONSULTANT

YYYY-MM-DD	2025-08-11
DESIGNED	----
PREPARED	MD
REVIEWED	HL
APPROVED	DR

PROJECT NO.	CONTROL	REV.	FIGURE
CA0031271	0001	A	9-5

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

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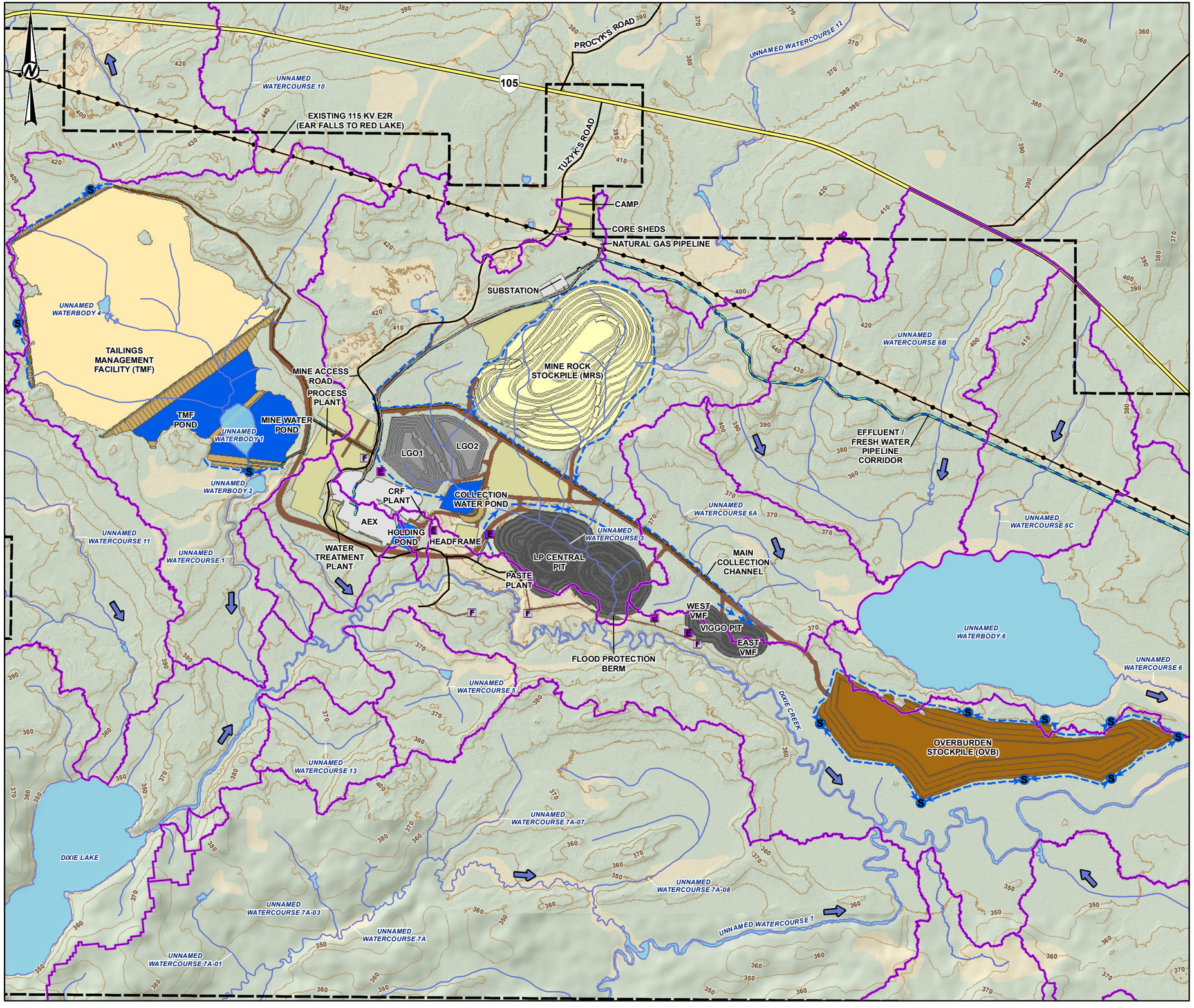

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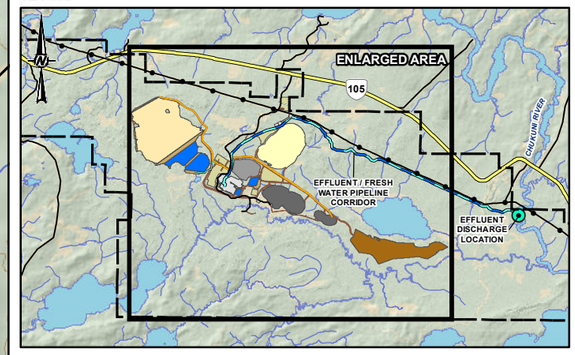

SCALE 1:200,000

LEGEND

- PROPERTY BOUNDARY
- HIGHWAY (INCLUDING NATURAL GAS PIPELINE)
- LOCAL ROAD
- EXISTING TRANSMISSION LINE
- LOCAL SUBCATCHMENT
- WATERCOURSE
- WATERBODY
- CONTOURS (10 M INTERVAL)
- FLOW DIRECTION

PROPOSED MINE FEATURE

- OPEN PIT
- MINE ROCK STOCKPILE (MRS)
- LOW GRADE ORE STOCKPILE (LGO)
- OVERBURDEN STOCKPILE (OVB)
- TAILINGS MANAGEMENT FACILITY (TMF)
- SUMP
- COLLECTION DITCH
- MINE FACILITIES / INFRASTRUCTURE
- DAM
- POND
- ROAD
- ADVANCED EXPLORATION SITE (AEX)
- EXHAUST VENT RAISE
- FRESH AIR VENT RAISE
- TRANSMISSION LINE
- RECLAIM PIPELINE
- TAILINGS PIPELINE
- PASTE PLANT PIPELINE
- EFFLUENT / FRESH WATER PIPELINE CORRIDOR
- EFFLUENT DISCHARGE LOCATION

0 0.5 1 2

1:35,000 KILOMETRES

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE
2. VMF: VIGGO MANAGEMENT FACILITY

REFERENCE(S)

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CLIENT
GREAT BEAR RESOURCES

PROJECT
GREAT BEAR PROJECT

TITLE
OVERBURDEN STOCKPILE ALTERNATIVE E CONFIGURATION

CONSULTANT
wsp

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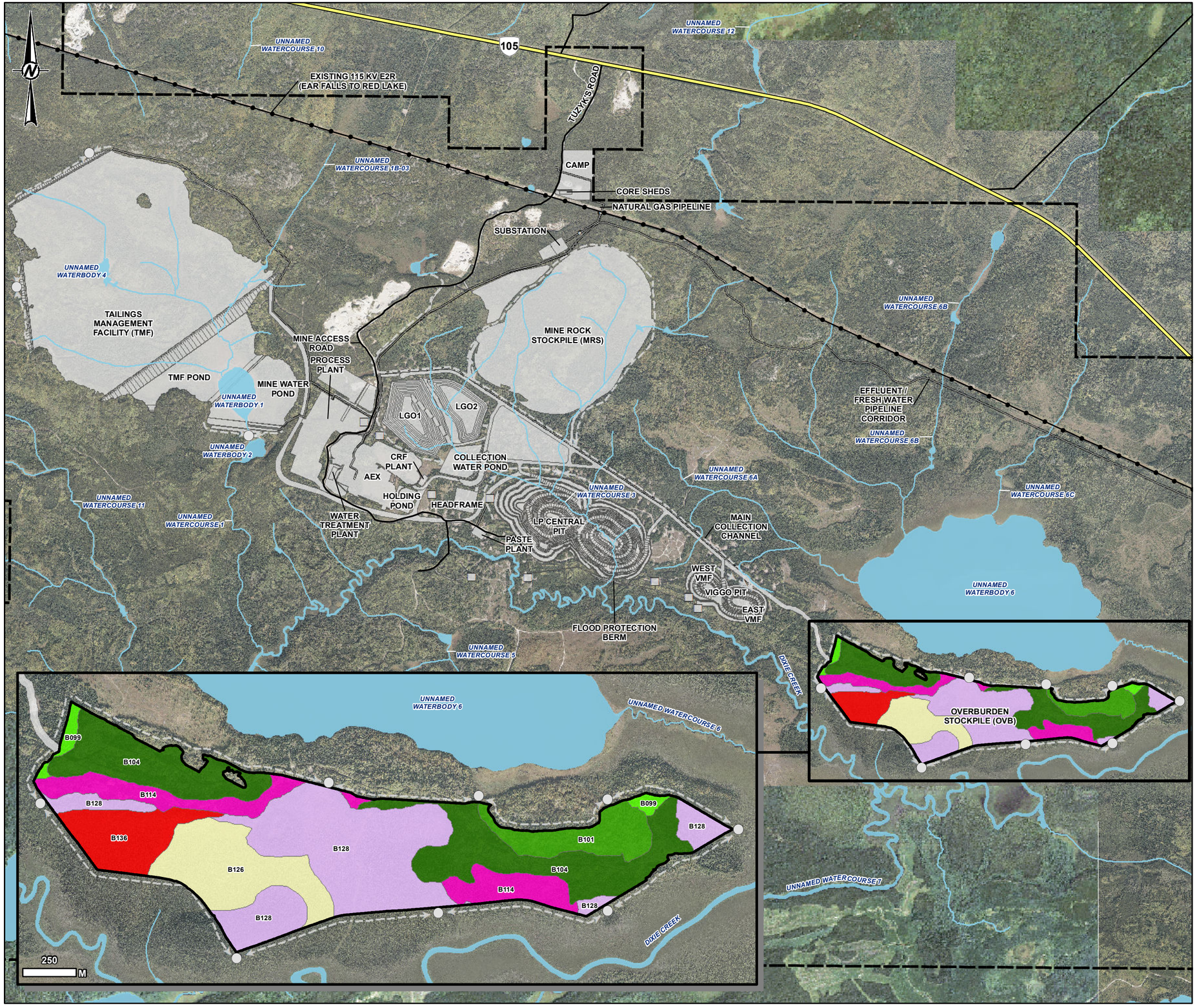
APPROVED	DR

PROJECT NO.	CONTROL	REV.	FIGURE
CA0031271	0001	A	9-6



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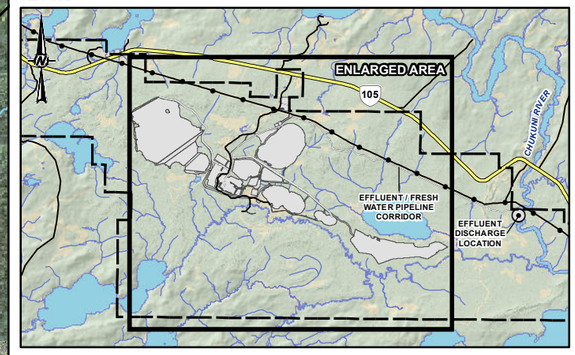

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LEGEND

- PROPERTY BOUNDARY
- PROPOSED OVERBURDEN STOCKPILE (OVB)
- OTHER PROPOSED MINE FEATURE
- HIGHWAY (INCLUDING NATURAL GAS PIPELINE)
- LOCAL ROAD
- EXISTING TRANSMISSION LINE
- WATERCOURSE
- WATERBODY

IMPACTED VEGETATION COMMUNITY

- B099: *FRESH, SILTY TO FINE LOAMY: PINE - BLACK SPRUCE CONIFER*
- B101: *FRESH, SILTY TO FINE LOAMY: SPRUCE - FIR CONIFER*
- B104: *FRESH, SILTY TO FINE LOAMY: ASPEN - BIRCH HARDWOOD*
- B114: *MOIST, FINE: PINE - BLACK SPRUCE CONIFER*
- B126: *LOW TREED BOG*
- B128: *ORGANIC INTERMEDIATE CONIFER SWAMP*
- B136: *SPARSE TREED FEN*

0 0.5 1 2
1:35,000 KILOMETRES

NOTE(S)
1. ALL LOCATIONS ARE APPROXIMATE
2. VMF: VIGGO MANAGEMENT FACILITY

REFERENCE(S)
1. CONTAINS INFORMATION LICENSED UNDER THE OPEN GOVERNMENT LICENCE - ONTARIO
2. CONTOURS ACQUIRED FROM 2022 LIDAR SURVEY.
3. PROPERTY BOUNDARY PROVIDED BY GREAT BEAR RESOURCES, AUGUST 2024.
4. ROADS INFORMATION PROVIDED BY GREAT BEAR RESOURCES, AUGUST 2022.
5. SITE PLAN BASED ON INFORMATION PROVIDED BY GREAT BEAR RESOURCES, DECEMBER 2024 / JUNE 2025.
6. COORDINATE SYSTEM: NAD 1983 UTM ZONE 15N

CLIENT
GREAT BEAR RESOURCES

PROJECT
GREAT BEAR PROJECT

TITLE
OVERBURDEN STOCKPILE ALTERNATIVE E VEGETATION COMMUNITIES AND FISHERIES RESOURCES

CONSULTANT

wsp

YYYY-MM-DD	2025-08-11
DESIGNED	----
PREPARED	MD
REVIEWED	HL
APPROVED	DR

PROJECT NO.	CONTROL	REV.	FIGURE
CA0031271	0001	A	9-7

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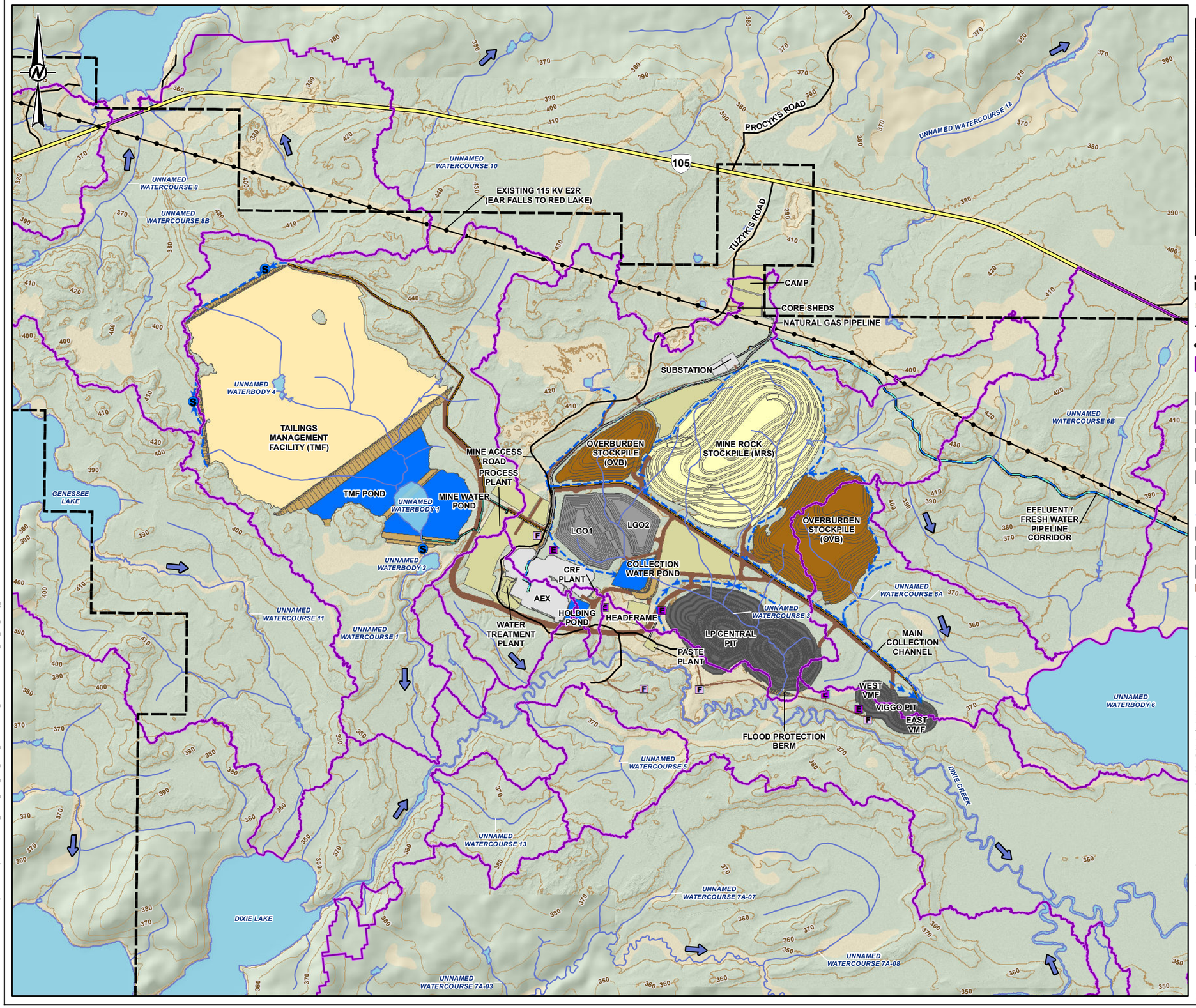

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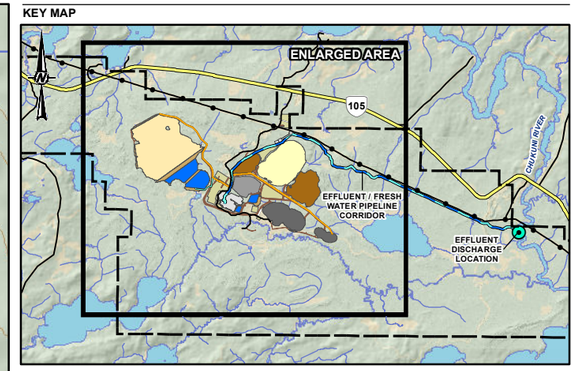


SCALE 1:200,000

LEGEND

- PROPERTY BOUNDARY
- HIGHWAY (INCLUDING NATURAL GAS PIPELINE)
- LOCAL ROAD
- EXISTING TRANSMISSION LINE
- LOCAL SUBCATCHMENT
- WATERCOURSE
- WATERBODY
- CONTOURS (10 M INTERVAL)
- FLOW DIRECTION

PROPOSED MINE FEATURE

- OPEN PIT
- MINE ROCK STOCKPILE (MRS)
- OVERBURDEN STOCKPILE (OVB)
- LOW GRADE ORE STOCKPILE (LGO)
- TAILINGS MANAGEMENT FACILITY (TMF)
- SUMP
- COLLECTION DITCH
- MINE FACILITIES / INFRASTRUCTURE
- DAM
- POND
- ROAD
- ADVANCED EXPLORATION SITE (AEX)
- EXHAUST VENT RAISE
- FRESH AIR VENT RAISE
- TRANSMISSION LINE
- RECLAIM PIPELINE
- TAILINGS PIPELINE
- PASTE PLANT PIPELINE
- EFFLUENT / FRESH WATER PIPELINE CORRIDOR
- EFFLUENT DISCHARGE LOCATION

0 0.5 1 2
1:35,000 KILOMETRES

NOTE(S)
1. ALL LOCATIONS ARE APPROXIMATE
2. VMF: VIGGO MANAGEMENT FACILITY

REFERENCE(S)
1. CONTAINS INFORMATION LICENSED UNDER THE OPEN GOVERNMENT LICENCE - ONTARIO
2. CONTOURS ACQUIRED FROM 2022 LIDAR SURVEY.
3. PROPERTY BOUNDARY PROVIDED BY GREAT BEAR RESOURCES, AUGUST 2024.
4. ROADS INFORMATION PROVIDED BY GREAT BEAR RESOURCES, AUGUST 2022.
5. SITE PLAN BASED ON INFORMATION PROVIDED BY GREAT BEAR RESOURCES, DECEMBER 2024 / JUNE 2025.
6. SUBCATCHMENT BOUNDARIES DELINEATED USING 2022 LIDAR AND THE ONTARIO FLOW ASSESSMENT TOOL (MNRF).
7. COORDINATE SYSTEM: NAD 1983 UTM ZONE 15N

CLIENT
GREAT BEAR RESOURCES

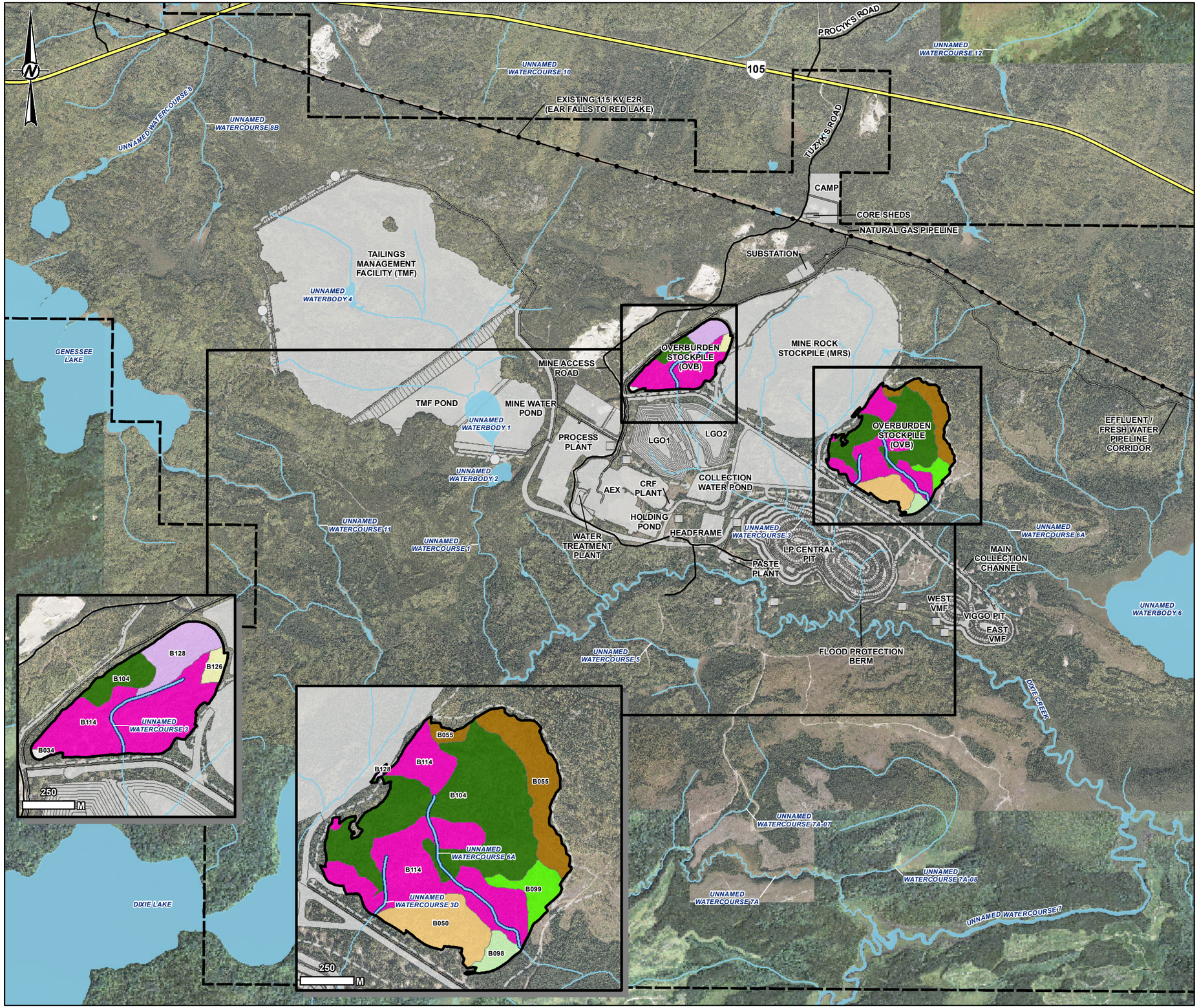
PROJECT
GREAT BEAR PROJECT

TITLE
OVERBURDEN STOCKPILE ALTERNATIVE F CONFIGURATION

CONSULTANT

YYYY-MM-DD	2025-07-08
DESIGNED	----
PREPARED	MD
REVIEWED	HL
APPROVED	DR

PROJECT NO.	CONTROL	REV.	FIGURE
CA0031271	0001	A	9-8



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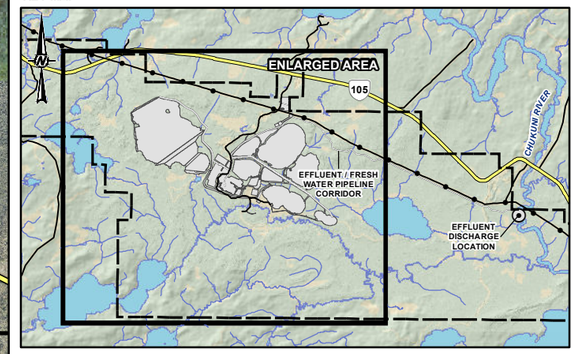

SCALE 1:200,000

LEGEND

- PROPERTY BOUNDARY
- PROPOSED OVERBURDEN STOCKPILE (OVB)
- OTHER PROPOSED MINE FEATURE
- HIGHWAY (INCLUDING NATURAL GAS PIPELINE)
- LOCAL ROAD
- EXISTING TRANSMISSION LINE
- WATERCOURSE
- WATERBODY
- IMPACTED WATERCOURSE

IMPACTED VEGETATION COMMUNITY

- B034: *DRY, SANDY: JACK PINE – BLACK SPRUCE DOMINATED*
- B035: *DRY, SANDY: PINE - BLACK SPRUCE CONIFER*
- B050: *DRY TO FRESH, COARSE: PINE - BLACK SPRUCE CONIFER*
- B055: *DRY TO FRESH, COARSE: ASPEN - BIRCH HARDWOOD*
- B098: *FRESH, SILTY TO FINE LOAMY: JACK PINE - BLACK SPRUCE DOMINATED*
- B099: *FRESH, SILTY TO FINE LOAMY: PINE - BLACK SPRUCE CONIFER*
- B104: *FRESH, SILTY TO FINE LOAMY: ASPEN - BIRCH HARDWOOD*
- B114: *MOIST, FINE: PINE - BLACK SPRUCE CONIFER*
- B126: *LOW TREED BOG*
- B128: *ORGANIC INTERMEDIATE CONIFER SWAMP*

0 0.5 1 2

1:35,000 KILOMETRES

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE
2. VMF: VIGGO MANAGEMENT FACILITY

REFERENCE(S)

1. CONTAINS INFORMATION LICENSED UNDER THE OPEN GOVERNMENT LICENCE - ONTARIO
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4. ROADS INFORMATION PROVIDED BY GREAT BEAR RESOURCES, AUGUST 2022.
5. SITE PLAN BASED ON INFORMATION PROVIDED BY GREAT BEAR RESOURCES, DECEMBER 2024 / JUNE 2025.
6. COORDINATE SYSTEM: NAD 1983 UTM ZONE 15N

CLIENT
GREAT BEAR RESOURCES

PROJECT
GREAT BEAR PROJECT

TITLE
OVERBURDEN STOCKPILE ALTERNATIVE F VEGETATION COMMUNITIES AND FISHERIES RESOURCES

CONSULTANT

wsp

YYYY-MM-DD	2025-07-08
DESIGNED	----
PREPARED	MD
REVIEWED	HL
APPROVED	DR

PROJECT NO.	CONTROL	REV.	FIGURE
CA0031271	0001	A	9-9

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

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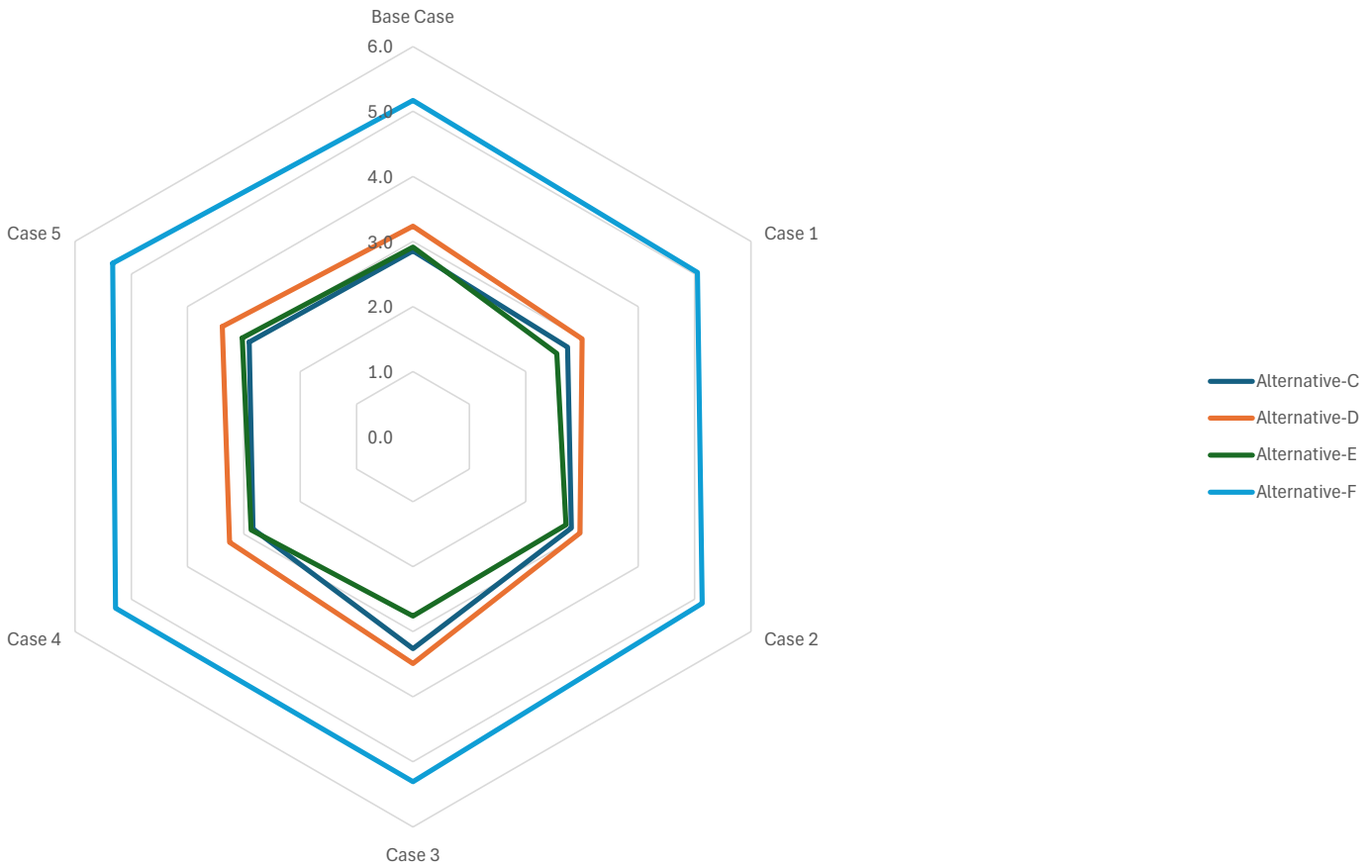


Notes

KINROSS Great Bear

Overburden Stockpile Sensitivity Analysis

Great Bear Project Assessment for Alternatives for Storage of Mine Waste

Great Bear Project

Figure Number		9-10	
Project Number		OMEMA2303	
Date		December 2025	
Drawn	HL	Reviewed	DR

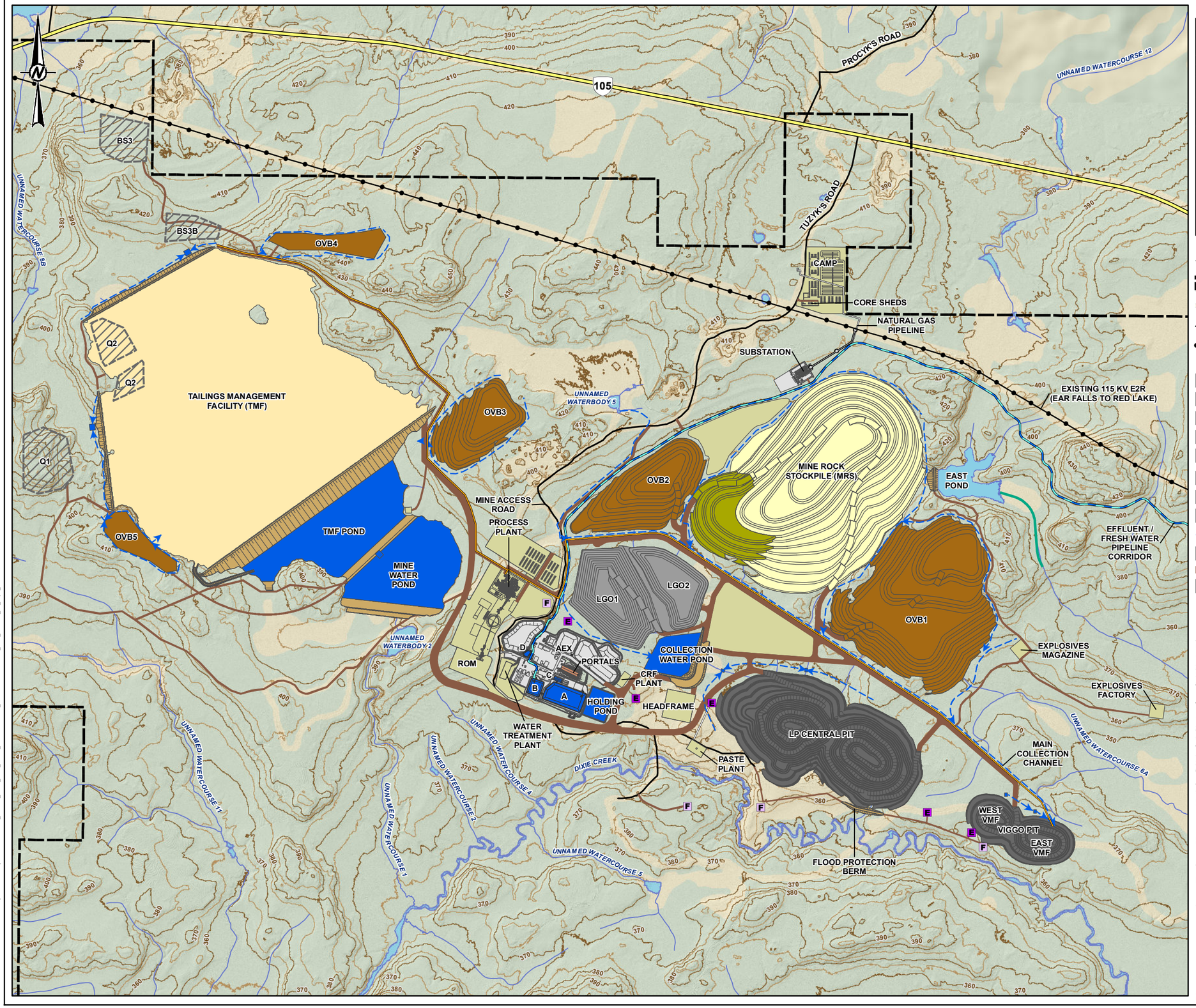
10 CONCLUSIONS

A mine waste alternatives assessment was undertaken for the storage mine wastes which will overprint watercourses and / or waterbodies that are frequented by fish for the Great Bear Project. The MAA methodology as provided in ECCC (2016) was used to evaluate and identify the preferred alternatives for storage of tailings, mine rock, low grade ore, mine water and overburden.

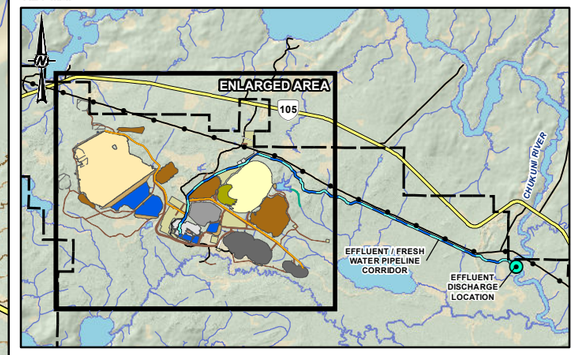
Using the MAA approach the following preferred alternatives were identified for the Great Bear Project:

- TMF: Alternative E was identified as the overall preferred option with an alternative merit ranking of 4.5 out of 6.0. The sensitivity analyses found that Alternative E was preferred for all sensitivity scenarios
- TMF ATD: ATD #3, high-density thickened tailings was identified as the preferred alternative. During the pre-screening only two alternatives remained and ATD #3 was identified in previous studies to have a lower capital, operating and sustaining costs compared to the remaining ATD, and is the economically feasible alternative for the Project
- MRS: Alternative F was identified as the overall preferred option with an alternative merit ranking of 5.1 out of 6.0. All the sensitivity scenarios identified Alternative F as the preferred option for mine rock storage
- LGO: Alternative D was identified as the preferred option for the base case with a merit ranking of 4.1 out of 6.0. The sensitivity analysis identified that Alternative D was the preferred option for low grade ore storage for the majority of the scenarios that were evaluated
- MWP: Alternative B was identified as the overall preferred option with an alternative merit ranking of 4.8 out of 6.0. The MWP MAA sensitivity analysis found that Alternative B was the preferred alternative for all scenarios evaluated
- OVB: Alternative F was identified as the overall preferred option with an alternative merit ranking of 5.2 out of 6.0. All the sensitivity scenarios identified Alternative F as the preferred option for overburden storage

Using these alternatives as determined through this process, the proposed ultimate site plan for the Great Bear Project is shown in Figure 10-1. The sensitivity analysis tables are provided in Appendix F.



KEY MAP



SCALE 1:175,000

LEGEND

- PROPERTY BOUNDARY
- HIGHWAY (INCLUDING ENBRIDGE PIPELINE)
- LOCAL ROAD
- EXISTING TRANSMISSION LINE
- WATERCOURSE
- WATERBODY
- MAJOR CONTOURS (10 M INTERVAL)
- MINOR CONTOURS (5 M INTERVAL)

PROPOSED MINE FEATURE

- OPEN PIT
- MINE ROCK STOCKPILE (NPAG)
- MINE ROCK STOCKPILE (PAG)
- LOW GRADE ORE STOCKPILE (LGO)
- OVERBURDEN STOCKPILE (OVB)
- TAILINGS MANAGEMENT FACILITY (TMF)
- DAM
- POND
- COLLECTION DITCH
- MINE FACILITIES / INFRASTRUCTURE
- ROAD
- PORTAL
- ADVANCED EXPLORATION SITE (AEX)
- ROCK QUARRY (Q) / SAND AND GRAVEL PIT (B)
- DIVERSION CHANNEL
- E EXHAUST VENT RAISE
- F FRESH AIR VENT RAISE
- TRANSMISSION LINE
- TAILINGS PIPELINE
- PASTE PLANT PIPELINE
- EFFLUENT / FRESH WATER PIPELINE CORRIDOR
- EFFLUENT DISCHARGE LOCATION

0 0.25 0.5 1

1:26,500 KILOMETRES

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE
2. VMF: VIGGO MANAGEMENT FACILITY
3. ROM: RUN OF MINE ORE
4. AEX PONDS: A-AEX MINE WATER POND, B-AEX TREATED WATER POND, C-AEX SETTLING POND, D-AEX SEDIMENT POND

REFERENCE(S)

1. CONTAINS INFORMATION LICENSED UNDER THE OPEN GOVERNMENT LICENCE - ONTARIO
2. CONTOURS ACQUIRED FROM 2022 LIDAR SURVEY.
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5. SITE PLAN BASED ON INFORMATION PROVIDED BY GREAT BEAR RESOURCES, DECEMBER 2024 / JUNE 2025.
6. COORDINATE SYSTEM: NAD 1983 UTM ZONE 15N

CLIENT
GREAT BEAR RESOURCES

PROJECT
GREAT BEAR PROJECT

TITLE
SITE PLAN (TOPOGRAPHY)

CONSULTANT

wsp

YYYY-MM-DD	2025-07-08
DESIGNED	----
PREPARED	MD
REVIEWED	----
APPROVED	----

PROJECT NO.	CONTROL	REV.	FIGURE
CA0031271	0001	A	10-1

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

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11 REFERENCES

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- WSP. 2025b. Great Bear Project – Fisheries Resources Baseline Report, prepared by WSP Canada Inc., submitted to Great Bear Resources Ltd., March 2025.

Appendix A
TMF Cost Estimates

Appendix A: Comparative Cost Estimates for the TMF Alternatives

Alternatives	Phase	Task / Component	Quantity	Units	Unit Rate	Task Cost
Alternative E	Construction and Operations	Dam clearing	327,000	m^2	$ 1.25	$ 408,750
		Foundation allowance	327,000	m^2	$ 95.00	$ 31,065,000
		Dam fill volume	3,640,500	m^3	$ 16.00	$ 58,248,000
		TMF perimeter ditching	3455	m	$ 150.00	$ 518,267
		Seepage collection sumps	4	LS	$ 550,000.00	$ 2,200,000
		Tailings pipeline	8509	m	$ 350.00	$ 2,978,054
		Road	4.5	km	$ 150,000.00	$ 672,654
		Annual water treatment estimate	1,921,360	m^3	$ 1.25	$ 2,401,700
		Fish compensation (watercourse)	5.1	km	$ 1,100,000.00	$ 5,599,815
		Fish compensation (waterbody)	1.6	ha	$ 375,000.00	$ 611,063
		Subtotal (Construction and Operations)				*$ 104,703,302*
	Closure	Vegetative cover	3,650,000	m^2	$ 5.00	$ 18,250,000
		Seeding	3,650,000	m^2	$ 0.50	$ 1,825,000
		Scarify and Seed Roads	4.5	km	$ 10,000.00	$ 44,844
		Water Treatment (10 years)	12,008,500	m^3	$ 1.25	$ 15,010,625
		Subtotal (Closure)				*$ 35,130,469*
Alternative E Total ($C)						**$ 139,833,770**
Alternative G	Construction and Operations	Dam clearing	1,850,000	m^2	$ 1.25	$ 2,312,500
		Foundation allowance	1,850,000	m^2	$ 95.00	$ 175,750,000
		Dam fill volume	20,600,000	m^3	$ 16.00	$ 329,600,000
		TMF perimeter ditching	5185	m	$ 150.00	$ 777,677
		Seepage collection sumps	12	LS	$ 550,000.00	$ 6,600,000
		Tailings pipeline	7334	m	$ 350.00	$ 2,566,848
		Road	2.1	km	$ 150,000.00	$ 319,328
		Annual water treatment estimate	1,426,544	m^3	$ 1.25	$ 1,783,180
		Fish compensation (watercourse)	4.8	km	$ 1,100,000.00	$ 5,278,348
		Fish compensation (waterbody)	0.3	ha	$ 375,000.00	$ 113,418
		Subtotal (Construction and Operations)				*$ 525,101,300*
	Closure	Vegetative cover	2,710,000	m^2	$ 5.00	$ 13,550,000
		Seeding	2,710,000	m^2	$ 0.50	$ 1,355,000
		Scarify and Seed Roads	2.1	km	$ 10,000.00	$ 21,289
		Water Treatment (10 years)	8,915,900	m^3	$ 1.25	$ 11,144,875
		Subtotal (Closure)				*$ 26,071,164*
Alternative G Total ($C)						**$ 551,172,463**
Alternative H	Construction and Operations	Dam clearing	1,030,000	m^2	$ 1.25	$ 1,287,500
		Foundation allowance	1,030,000	m^2	$ 95.00	$ 97,850,000
		Dam fill volume	8,900,000	m^3	$ 16.00	$ 142,400,000
		TMF perimeter ditching	5936	m	$ 150.00	$ 890,446
		Seepage collection sumps	6	LS	$ 550,000.00	$ 3,300,000
		Tailings pipeline	9415	m	$ 350.00	$ 3,295,349
		Road	5.7	km	$ 150,000.00	$ 860,966
		Annual water treatment estimate	2,647,792	m^3	$ 1.25	$ 3,309,740
		Fish compensation (watercourse)	9.5	km	$ 1,100,000.00	$ 10,436,838
		Fish compensation (waterbody)	2.1	ha	$ 375,000.00	$ 789,590
		Subtotal (Construction and Operations)				*$ 264,420,429*
	Closure	Vegetative cover	5,030,000	m^2	$ 5.00	$ 25,150,000
		Seeding	5,030,000	m^2	$ 0.50	$ 2,515,000
		Scarify and Seed Roads	5.7	km	$ 10,000.00	$ 57,398
		Water Treatment (10 years)	1,654,870	m^3	$ 1.25	$ 2,068,588
		Subtotal (Closure)				*$ 29,790,985*
Alternative H Total ($C)						**$ 294,211,414**
Alternative I	Construction and Operations	Dam clearing	2,680,000	m^2	$ 1.25	$ 3,350,000
		Foundation allowance	2,680,000	m^2	$ 95.00	$ 254,600,000
		Dam fill volume	39,700,000	m^3	$ 16.00	$ 635,200,000
		TMF perimeter ditching	5823	m	$ 150.00	$ 873,376
		Seepage collection sumps	7	LS	$ 550,000.00	$ 3,850,000
		Tailings pipeline	15376	m	$ 350.00	$ 5,381,594
		Road	5.7	km	$ 150,000.00	$ 861,973
		Annual water treatment estimate	1,752,912	m^3	$ 1.25	$ 2,191,140
		Fish compensation (watercourse)	1.4	km	$ 1,100,000.00	$ 1,532,243
		Fish compensation (waterbody)	0.0	ha	$ 375,000.00	$ -
		Subtotal (Construction and Operations)				*$ 907,840,326*
	Closure	Vegetative cover	3,330,000	m^2	$ 5.00	$ 16,650,000
		Seeding	3,330,000	m^2	$ 0.50	$ 1,665,000
		Scarify and Seed Roads	5.7	km	$ 10,000.00	$ 57,465
		Water Treatment (10 years)	10,955,700	m^3	$ 1.25	$ 13,694,625
		Subtotal (Closure)				*$ 32,067,090*
Alternative I Total ($C)						**$ 939,907,416**

Alternative J	Construction and Operations	Dam clearing	1,520,000	m^2	$	1.25	$ 1,900,000
		Foundation allowance	1,520,000	m^2	$	95.00	$ 144,400,000
		Dam fill volume	35,500,000	m^3	$	16.00	$ 568,000,000
		TMF perimeter ditching	5334	m	$	150.00	$ 800,077
		Seepage collection sumps	5	LS	$	550,000.00	$ 2,750,000
		Tailings pipeline	10418	m	$	350.00	$ 3,646,176
		Road	5.2	km	$	150,000.00	$ 784,649
		Annual water treatment estimate	989,632	m^3	$	1.25	$ 1,237,040
		Fish compensation (watercourse)	0.0	km	$	1,100,000.00	$ -
		Fish compensation (waterbody)	0.0	ha	$	375,000.00	$ -
		Subtotal (Construction and Operations)					*$ 723,517,942*
	Closure	Vegetative cover	1,880,000	m^2	$	5.00	$ 9,400,000
		Seeding	1,880,000	m^2	$	0.50	$ 940,000
		Scarify and Seed Roads	5.2	km	$	10,000.00	$ 52,310
		Water Treatment (10 years)	6,185,200	m^3	$	1.25	$ 7,731,500
		Subtotal (Closure)					*$ 18,123,810*
Alternative J Total ($C)							**$ 741,641,752**
Alternative O	Construction and Operations	Dam clearing	1,680,000	m^2	$	1.25	$ 2,100,000
		Foundation allowance	1,680,000	m^2	$	95.00	$ 159,600,000
		Dam fill volume	19,100,000	m^3	$	16.00	$ 305,600,000
		TMF perimeter ditching	4679	m	$	150.00	$ 701,796
		Seepage collection sumps	11	LS	$	550,000.00	$ 6,050,000
		Tailings pipeline	10116	m	$	350.00	$ 3,540,581
		Road	2.7	km	$	150,000.00	$ 409,659
		Annual water treatment estimate	1,695,008	m^3	$	1.25	$ 2,118,760
		Fish compensation (watercourse)	6.3	km	$	1,100,000.00	$ 6,972,362
		Fish compensation (waterbody)	0.0	ha	$	375,000.00	$ -
		Subtotal (Construction and Operations)					*$ 487,093,158*
	Closure	Vegetative cover	3,220,000	m^2	$	5.00	$ 16,100,000
		Seeding	3,220,000	m^2	$	0.50	$ 1,610,000
		Scarify and Seed Roads	2.7	km	$	10,000.00	$ 27,311
		Water Treatment (10 years)	10,593,800	m^3	$	1.25	$ 13,242,250
		Subtotal (Closure)					*$ 30,979,561*
Alternative O Total ($C)							**$ 518,072,719**

Appendix B
MRS Cost Estimates

Appendix B: Comparative Cost Estimates for the MRS Alternatives

Alternatives	Phase	Task / Component	Quantity	Units	Unit Rate	Task Cost
Alternative C	Construction and Operations	MRS Clearing	2,792,608	m^2	$ 1.25	$ 3,490,760
		MRS perimeter ditching	6559	m	$ 150.00	$ 983,867
		Seepage collection basin	11	LS	$ 550,000.00	$ 6,050,000
		Water pipeline	6105	m	$ 350.00	$ 2,136,869
		Road	2.3	km	$ 150,000.00	$ 344,298
		Annual water treatment estimate	1,010,645	m^3	$ 1.25	$ 1,263,306
		Fish compensation (watercourse)	2.6	km	$ 1,100,000.00	$ 2,839,598
		Fish compensation (waterbody)	0.58	ha	$ 375,000.00	$ 218,244
		Subtotal (Construction and Operations)				*$ 17,326,943*
	Closure	Grading / contouring	2,792,608	m^2	$ 3.00	$ 8,377,824
		Low permeability soil (1.5 m)	4,188,912	m^3	$ 4.55	$ 19,059,549
		Soil / growth media	2,792,608	m^2	$ 5.00	$ 13,963,040
		Vegetation (standard seed mix)	2,792,608	m^2	$ 0.50	$ 1,396,304
		Scarify and seed roads	2.3	km	$ 20,000.00	$ 45,906
		Subtotal (Closure)				*$ 42,842,623*
Alternative C Total ($C)						**$ 60,169,566**
Alternatives	**Phase**	**Task / Component**	**Quantity**	**Units**	**Unit Rate**	**Task Cost**
Alternative D	Construction and Operations	MRS Clearing	2,620,297	m^2	$ 1.25	$ 3,275,372
		MRS perimeter ditching	7204	m	$ 150.00	$ 1,080,538
		Seepage collection basin	13	LS	$ 550,000.00	$ 7,150,000
		Water pipeline	5472	m	$ 350.00	$ 1,915,124
		Road	2.1	km	$ 150,000.00	$ 309,829
		Annual water treatment estimate	948,286	m^3	$ 1.25	$ 1,185,357
		Fish compensation (watercourse)	2.2	km	$ 1,100,000.00	$ 2,425,816
		Fish compensation (waterbody)	0.00	ha	$ 375,000.00	$ -
		Subtotal (Construction and Operations)				*$ 17,342,035*
	Closure	Grading / contouring	2,620,297	m^2	$ 3.00	$ 7,860,892
		Low permeability soil (1.5 m)	3,930,446	m^3	$ 4.55	$ 17,883,529
		Soil / growth media	2,620,297	m^2	$ 5.00	$ 13,101,487
		Vegetation (standard seed mix)	2,620,297	m^2	$ 0.50	$ 1,310,149
		Scarify and seed roads	2.1	km	$ 20,000.00	$ 41,311
		Subtotal (Closure)				*$ 40,197,367*
Alternative D Total ($C)						**$ 57,539,402**
Alternatives	**Phase**	**Task / Component**	**Quantity**	**Units**	**Unit Rate**	**Task Cost**
Alternative E	Construction and Operations	MRS Clearing	4,750,637	m^2	$ 1.25	$ 5,938,296
		MRS perimeter ditching	15079	m	$ 150.00	$ 2,261,914
		Seepage collection basin	16	LS	$ 550,000.00	$ 8,800,000
		Water pipeline	1468	m	$ 350.00	$ 513,627
		Road	2.2	km	$ 150,000.00	$ 327,038
		Annual water treatment estimate	1,719,255	m^3	$ 1.25	$ 2,149,069
		Fish compensation (watercourse)	0.0	km	$ 1,100,000.00	$ -
		Fish compensation (waterbody)	0.00	ha	$ 375,000.00	$ -
		Subtotal (Construction and Operations)				*$ 19,989,945*
	Closure	Grading / contouring	4,750,637	m^2	$ 3.00	$ 14,251,911
		Low permeability soil (1.5 m)	7,125,955	m^3	$ 4.55	$ 32,423,097
		Soil / growth media	4,750,637	m^2	$ 5.00	$ 23,753,184
		Vegetation (standard seed mix)	4,750,637	m^2	$ 0.50	$ 2,375,318
		Scarify and seed roads	2.2	km	$ 20,000.00	$ 43,605
		Subtotal (Closure)				*$ 72,847,115*
Alternative E Total ($C)						**$ 92,837,061**
Alternatives	**Phase**	**Task / Component**	**Quantity**	**Units**	**Unit Rate**	**Task Cost**
Alternative F	Construction and Operations	MRS Clearing	1,650,074	m^2	$ 1.25	$ 2,062,592
		MRS perimeter ditching	4263	m	$ 150.00	$ 639,481
		Seepage collection basin	0	LS	$ 550,000.00	$ -
		Water pipeline	0	m	$ 350.00	$ -
		Road	0.7	km	$ 150,000.00	$ 110,305
		Annual water treatment estimate	597,162	m^3	$ 1.25	$ 746,452
		Fish compensation (watercourse)	5.1	km	$ 1,100,000.00	$ 5,656,034
		Fish compensation (waterbody)	0.14	ha	$ 375,000.00	$ 53,076
		Subtotal (Construction and Operations)				*$ 9,267,940*
	Closure	Grading / contouring	1,650,074	m^2	$ 3.00	$ 4,950,221
		Low permeability soil (1.5 m)	2,475,111	m^3	$ 4.55	$ 11,261,753
		Soil / growth media	1,650,074	m^2	$ 5.00	$ 8,250,369
		Vegetation (standard seed mix)	1,650,074	m^2	$ 0.50	$ 825,037
		Scarify and seed roads	0.7	km	$ 20,000.00	$ 14,707
		Subtotal (Closure)				*$ 25,302,087*
Alternative F Total ($C)						**$ 34,570,027**

Appendix C
LGO Cost Estimates

Appendix C: Comparative Cost Estimates for the LGO Alternatives

Alternatives	Phase	Task / Component	Quantity	Units	Unit Rate	Task Cost
Alternative A	Construction and Operations	LGO Clearing	458,465	m^2	$ 1.25	$ 573,082
		LGO perimeter ditching	2608	m	$ 150.00	$ 391,237
		Seepage collection basin	2	LS	$ 550,000.00	$ 1,100,000
		Water pipeline	2833	m	$ 350.00	$ 991,658
		Road	1.0	km	$ 150,000.00	$ 156,953
		Annual water treatment estimate	165,919	m^3	$ 1.25	$ 207,398
		Fish compensation (watercourse)	0.0	km	$ 1,100,000.00	$ -
		Fish compensation (waterbody)	0.00	ha	$ 375,000.00	$ -
		Subtotal (Construction and Operations)				*$ 3,420,328*
	Closure	Grading / contouring LGO footprint	458,465	m^2	$ 3.00	$ 1,375,396
		Low permeability soil (1.5 m) LGO footprint	687,698	m^3	$ 4.55	$ 3,129,025
		Soil / growth media LGO footprint	458,465	m^2	$ 5.00	$ 2,292,326
		Vegetation (standard seed mix) LGO footprint	458,465	m^2	$ 0.50	$ 229,233
		Scarify and seed roads	1.0	km	$ 20,000.00	$ 20,927
		Subtotal (Closure)				*$ 7,046,907*
Alternative A Total ($C)						**$ 10,467,234**
Alternatives	**Phase**	**Task / Component**	**Quantity**	**Units**	**Unit Rate**	**Task Cost**
Alternative B	Construction and Operations	LGO Clearing	391,412	m^2	$ 1.25	$ 489,265
		LGO perimeter ditching	2352	m	$ 150.00	$ 352,779
		Seepage collection basin	8	LS	$ 550,000.00	$ 4,400,000
		Water pipeline	2597	m	$ 350.00	$ 908,826
		Road	0.2	km	$ 150,000.00	$ 35,380
		Annual water treatment estimate	141,652	m^3	$ 1.25	$ 177,065
		Fish compensation (watercourse)	1.1	km	$ 1,100,000.00	$ 1,252,144
		Fish compensation (waterbody)	0.16	ha	$ 375,000.00	$ 60,694
		Subtotal (Construction and Operations)				*$ 7,676,152*
	Closure	Grading / contouring LGO footprint	391,412	m^2	$ 3.00	$ 1,174,235
		Low permeability soil (1.5 m) LGO footprint	587,118	m^3	$ 4.55	$ 2,671,385
		Soil / growth media LGO footprint	391,412	m^2	$ 5.00	$ 1,957,059
		Vegetation (standard seed mix) LGO footprint	391,412	m^2	$ 0.50	$ 195,706
		Scarify and seed roads	0.2	km	$ 20,000.00	$ 4,717
		Subtotal (Closure)				*$ 6,003,103*
Alternative B Total ($C)						**$ 13,679,255**
Alternatives	**Phase**	**Task / Component**	**Quantity**	**Units**	**Unit Rate**	**Task Cost**
Alternative C	Construction and Operations	LGO Clearing	481,933	m^2	$ 1.25	$ 602,416
		LGO perimeter ditching	2777	m	$ 150.00	$ 416,483
		Seepage collection basin	2	LS	$ 550,000.00	$ 1,100,000
		Water pipeline	3733	m	$ 350.00	$ 1,306,440
		Road	1.5	km	$ 150,000.00	$ 224,907
		Annual water treatment estimate	174,411	m^3	$ 1.25	$ 218,014
		Fish compensation (watercourse)	0.0	km	$ 1,100,000.00	$ -
		Fish compensation (waterbody)	0.00	ha	$ 375,000.00	$ -
		Subtotal (Construction and Operations)				*$ 3,868,260*
	Closure	Grading / contouring LGO footprint	481,933	m^2	$ 3.00	$ 1,445,798
		Low permeability soil (1.5 m) LGO footprint	722,899	m^3	$ 4.55	$ 3,289,190
		Soil / growth media LGO footprint	481,933	m^2	$ 5.00	$ 2,409,663
		Vegetation (standard seed mix) LGO footprint	481,933	m^2	$ 0.50	$ 240,966
		Scarify and seed roads	1.5	km	$ 20,000.00	$ 29,988
		Subtotal (Closure)				*$ 7,415,605*
Alternative C Total ($C)						**$ 11,283,865**
Alternatives	**Phase**	**Task / Component**	**Quantity**	**Units**	**Unit Rate**	**Task Cost**
Alternative D	Construction and Operations	LGO Clearing	498,462	m^2	$ 1.25	$ 623,077
		LGO perimeter ditching	1098	m	$ 150.00	$ 164,732
		Seepage collection basin	1	LS	$ 550,000.00	$ 550,000
		Water pipeline	872	m	$ 350.00	$ 305,033
		Road	0.4	km	$ 150,000.00	$ 62,852
		Annual water treatment estimate	180,393	m^3	$ 1.25	$ 225,492
		Fish compensation (watercourse)	1.4	km	$ 1,100,000.00	$ 1,581,860
		Fish compensation (waterbody)	0.00	ha	$ 375,000.00	$ -
		Subtotal (Construction and Operations)				*$ 3,513,045*
	Closure	Grading / contouring LGO footprint	498,462	m^2	$ 3.00	$ 1,495,385
		Low permeability soil (1.5 m) LGO footprint	747,692	m^3	$ 4.55	$ 3,402,001
		Soil / growth media LGO footprint	498,462	m^2	$ 5.00	$ 2,492,308
		Vegetation (standard seed mix) LGO footprint	498,462	m^2	$ 0.50	$ 249,231
		Scarify and seed roads	0.4	km	$ 20,000.00	$ 8,380
		Subtotal (Closure)				*$ 7,647,305*
Alternative D Total ($C)						**$ 11,160,350**

Appendix D
MWP Cost Estimates

Appendix D: Comparative Cost Estimates for the MWP Alternatives

Alternatives	Phase	Task / Component	Quantity	Units	Unit Rate	Task Cost
Alternative A	Construction and Operations	Dam clearing	30,000	m^2	$ 1.25	$ 37,500
		Foundation allowance	30,000	m^2	$ 95.00	$ 2,850,000
		Dam fill volume	115,000	m^3	$ 16.00	$ 1,840,000
		MWP perimeter ditching	1148	m	$ 150.00	$ 172,154
		Seepage collection basin	9	LS	$ 550,000.00	$ 4,950,000
		MWP pipeline	5157	m	$ 350.00	$ 1,805,104
		Road	1.4	km	$ 150,000.00	$ 207,874
		Fish compensation (watercourse)	0	km	$ 1,100,000.00	$ -
		Fish compensation (waterbody)	0	ha	$ 375,000.00	$ -
		Subtotal (Construction and Operations)				*$ 11,862,632*
	Closure	Vegetative cover	310,000	m^2	$ 5.00	$ 1,550,000
		Seeding	310,000	m^2	$ 0.50	$ 155,000
		Scarify and seed roads	1.4	km	$ 20,000.00	$ 27,717
		Subtotal (Closure)				*$ 1,732,717*
Alternative A Total ($C)						**$ 13,595,349**
Alternative B	Construction and Operations	Dam clearing	3,800	m^2	$ 1.25	$ 4,750
		Foundation allowance	3,800	m^2	$ 95.00	$ 361,000
		Dam fill volume	233,200	m^3	$ 16.00	$ 3,731,200
		Sheet Piles	1	LS	$ 19,000.00	$ 19,000
		MWP perimeter ditching	669	m	$ 150.00	$ 100,325
		Seepage collection basin	1	LS	$ 550,000.00	$ 550,000
		MWP pipeline	1216	m	$ 350.00	$ 425,532
		Road	0.3	km	$ 150,000.00	$ 39,397
		Fish compensation (watercourse)	0.2	km	$ 1,100,000.00	$ 198,406
		Fish compensation (waterbody)	7.5	ha	$ 375,000.00	$ 2,800,502
		Subtotal (Construction and Operations)				*$ 8,230,114*
	Closure	Vegetative cover	204,570	m^2	$ 5.00	$ 1,022,850
		Seeding	204,570	m^2	$ 0.50	$ 102,285
		Scarify and seed roads	0.3	km	$ 20,000.00	$ 5,253
		Subtotal (Closure)				*$ 1,130,388*
Alternative B Total ($C)						**$ 9,360,502**
Alternative F	Construction and Operations	Dam clearing	280,000	m^2	$ 1.25	$ 350,000
		Foundation allowance	280,000	m^2	$ 95.00	$ 26,600,000
		Dam fill volume	1,600,000	m^3	$ 16.00	$ 25,600,000
		MWP perimeter ditching	1,836	m	$ 150.00	$ 275,429
		Seepage collection basin	5	LS	$ 550,000.00	$ 2,750,000
		MWP pipeline	3,887	m	$ 350.00	$ 1,360,498
		Road	0.7	km	$ 150,000.00	$ 99,059
		Fish compensation (watercourse)	1.8	km	$ 1,100,000.00	$ 1,925,399
		Fish compensation (waterbody)	0.3	ha	$ 375,000.00	$ 97,417
		Subtotal (Construction and Operations)				*$ 59,057,802*
	Closure	Vegetative cover	351,600	m^2	$ 5.00	$ 1,758,000
		Seeding	351,600	m^2	$ 0.50	$ 175,800
		Scarify and seed roads	0.7	km	$ 20,000.00	$ 13,208
		Subtotal (Closure)				*$ 1,947,008*
Alternative F Total ($C)						**$ 61,004,810**

Appendix E
OVB Cost Estimates

Appendix E: Comparative Cost Estimates for the OVB Alternatives

Alternatives	Phase	Task / Component	Quantity	Units	Unit Rate	Task Cost
Alternative C	Construction and Operations	OVB Clearing	1,494,070	m^2	$ 1.25	$ 1,867,588
		OVB perimeter ditching	7213	m	$ 150.00	$ 1,082,007
		Settling basin	11	LS	$ 550,000.00	$ 6,050,000
		Road	2.3	km	$ 150,000.00	$ 352,004
		Fish compensation (watercourse)	0.9	km	$ 1,100,000.00	$ 962,761
		Fish compensation (waterbody)	0.0	ha	$ 375,000.00	$ -
		Subtotal (Construction and Operations)				*$ 10,314,360*
	Closure	Grading / contouring OVB footprint	1,494,070	m^2	$ 3.00	$ 4,482,211
		Vegetation (standard seed mix) OVB footprint	1,494,070	m^2	$ 0.50	$ 747,035
		Scarify and seed roads	2.3	km	$ 20,000.00	$ 46,934
		Subtotal (Closure)				*$ 5,276,180*
Alternative C Total ($C)						**$ 15,590,540**

Alternatives	Phase	Task / Component	Quantity	Units	Unit Rate	Task Cost
Alternative D	Construction and Operations	OVB Clearing	1,484,152	m^2	$ 1.25	$ 1,855,189
		OVB perimeter ditching	5432	m	$ 150.00	$ 814,834
		Settling basin	8	LS	$ 550,000.00	$ 4,400,000
		Road	2.5	km	$ 150,000.00	$ 373,163
		Fish compensation (watercourse)	0.7	km	$ 1,100,000.00	$ 730,360
		Fish compensation (waterbody)	0.0	ha	$ 375,000.00	$ -
		Subtotal (Construction and Operations)				*$ 8,173,547*
	Closure	Grading / contouring OVB footprint	1,484,152	m^2	$ 3.00	$ 4,452,455
		Vegetation (standard seed mix) OVB footprint	1,484,152	m^2	$ 0.50	$ 742,076
		Scarify and seed roads	2.5	km	$ 20,000.00	$ 49,755
		Subtotal (Closure)				*$ 5,244,286*
Alternative D Total ($C)						**$ 13,417,832**

Alternatives	Phase	Task / Component	Quantity	Units	Unit Rate	Task Cost
Alternative E	Construction and Operations	OVB Clearing	1,636,444	m^2	$ 1.25	$ 2,045,555
		OVB perimeter ditching	7136	m	$ 150.00	$ 1,070,374
		Settling basin	8	LS	$ 550,000.00	$ 4,400,000
		Road	1.3	km	$ 150,000.00	$ 197,838
		Fish compensation (watercourse)	0.0	km	$ 1,100,000.00	$ -
		Fish compensation (waterbody)	0.0	ha	$ 375,000.00	$ -
		Subtotal (Construction and Operations)				*$ 7,713,767*
	Closure	Grading / contouring OVB footprint	1,636,444	m^2	$ 3.00	$ 4,909,331
		Vegetation (standard seed mix) OVB footprint	1,636,444	m^2	$ 0.50	$ 818,222
		Scarify and seed roads	1.3	km	$ 20,000.00	$ 26,378
		Subtotal (Closure)				*$ 5,753,932*
Alternative E Total ($C)						**$ 13,467,698**

Alternatives	Phase	Task / Component	Quantity	Units	Unit Rate	Task Cost
Alternative F	Construction and Operations	OVB Clearing	1,269,698	m^2	$ 1.25	$ 1,587,122
		OVB perimeter ditching	2294	m	$ 150.00	$ 344,030
		Settling basin	0	LS	$ 550,000.00	$ -
		Road	0.3	km	$ 150,000.00	$ 50,261
		Fish compensation (watercourse)	1.8	km	$ 1,100,000.00	$ 1,991,612
		Fish compensation (waterbody)	0.0	ha	$ 375,000.00	$ -
		Subtotal (Construction and Operations)				*$ 3,973,025*
	Closure	Grading / contouring OVB footprint	1,269,698	m^2	$ 3.00	$ 3,809,093
		Vegetation (standard seed mix) OVB footprint	1,269,698	m^2	$ 0.50	$ 634,849
		Scarify and seed roads	0.3	km	$ 20,000.00	$ 6,701
		Subtotal (Closure)				*$ 4,450,643*
Alternative F Total ($C)						**$ 8,423,668**

Appendix F
Sensitivity Analysis

Great Bear Project - TMF

Quantitative analysis for indicators related to Environment Account					Alternative-E		Alternative-G		Alternative-H		Alternative-I		Alternative-J		Alternative-O	
Account	**Sub-account**	**ID**	**Indicator**	**Indicator Weight (W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**
Environment	Fisheries Resources	2	Loss of Fish Habitat (Waterbodies)	6	2	**12**	5	**30**	1	**6**	6	**36**	6	**36**	6	**36**
		2	Loss of Fish Habitat (Watercourses)	5	3	**15**	3	**15**	1	**5**	5	**25**	6	**30**	3	**15**
		2	Number of Watercourse Crossings	4	4	**16**	5	**20**	3	**12**	5	**20**	3	**12**	5	**20**
				Sub-account merit score (∑(SxW))		**43**		**65**		**23**		**81**		**78**		**71**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**2.9**		**4.3**		**1.5**		**5.4**		**5.2**		**4.7**
	Atmospheric Emissions	3	Noise Emissions	1	5	**5**	5	**5**	1	**1**	2	**2**	2	**2**	6	**6**
		3	Greenhouse Gases (GHG) Emissions	1	6	**6**	3	**3**	5	**5**	1	**1**	1	**1**	3	**3**
		3	Fugitive Dust	2	4	**8**	5	**10**	1	**2**	4	**8**	6	**12**	4	**8**
				Sub-account merit score (∑(SxW))		**19**		**18**		**8**		**11**		**15**		**17**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**4.8**		**4.5**		**2.0**		**2.8**		**3.8**		**4.3**
	Terrestrial and Water Resources	4	TMF Footprint	5	6	**30**	3	**15**	1	**5**	1	**5**	6	**30**	2	**10**
		4	Number of Subcatchment Areas Affected	5	6	**30**	3	**15**	6	**30**	4	**20**	5	**25**	4	**20**
		4	Haul / Access Road Corridors	2	3	**6**	6	**12**	1	**2**	1	**2**	2	**4**	5	**10**
				Sub-account merit score (∑(SxW))		**66**		**42**		**37**		**27**		**59**		**40**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**5.5**		**3.5**		**3.1**		**2.3**		**4.9**		**3.3**
	Species at Risk	5	Direct Loss of Wolverine Habitat	4	1	**4**	6	**24**	2	**8**	5	**20**	6	**24**	1	**4**
		5	Direct Loss of Caribou Habitat	3	5	**15**	5	**15**	5	**15**	5	**15**	6	**18**	1	**3**
		5	Direct Loss of Avian SAR Habitat	2	6	**12**	4	**8**	1	**2**	1	**2**	6	**12**	4	**8**
		5	Direct Loss of Bat Foraging Habitat	2	3	**6**	5	**10**	1	**2**	5	**10**	6	**12**	2	**4**
		5	Direct Loss of Maternity Roosting Habitat	2	4	**8**	4	**8**	1	**2**	3	**6**	6	**12**	4	**8**
				Sub-account merit score (∑(SxW))		**45**		**65**		**29**		**53**		**78**		**27**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**3.5**		**5.0**		**2.2**		**4.1**		**6.0**		**2.1**

Quantitative analysis for sub-accounts related to Environment Account			Alternative-E		Alternative-G		Alternative-H		Alternative-I		Alternative-J		Alternative-O	
Account	**Sub-account**	**Sub-Account Weight (W)**	**Sub-account merit rating**	**Sub-account merit score**	**Sub-account merit rating**	**Sub-account merit score**	**Sub-account merit rating**	**Sub-account merit score**	**Sub-account merit rating**	**Sub-account merit score**	**Sub-account merit rating**	**Sub-account merit score**	**Sub-account merit rating**	**Sub-account merit score**
Environment	Fisheries Resources	**6**	2.9	**17.2**	4.3	**26.0**	1.5	**9.2**	5.4	**32.4**	5.2	**31.2**	4.7	**28.4**
	Atmospheric Emissions	**2**	4.8	**9.5**	4.5	**9.0**	2.0	**4.0**	2.8	**5.5**	3.8	**7.5**	4.3	**8.5**
	Terrestrial and Water Resources	**3**	5.5	**16.5**	3.5	**10.5**	3.1	**9.3**	2.3	**6.8**	4.9	**14.8**	3.3	**10.0**
	Species at Risk	**6**	3.5	**20.8**	5.0	**30.0**	2.2	**13.4**	4.1	**24.5**	6.0	**36.0**	2.1	**12.5**
	Account merit score (Σ{Rs × W})			**64.0**		**75.5**		**35.8**		**69.1**		**89.5**		**59.4**
	Account merit rating (Ra = Σ{Rs×W}/ ΣW)			**3.8**		**4.4**		**2.1**		**4.1**		**5.3**		**3.5**

Quantitative analysis for indicators related to Technical Account					Alternative-E		Alternative-G		Alternative-H		Alternative-I		Alternative-J		Alternative-O	
Account	**Sub-account**	**ID**	**Indicator**	**Indicator Weight (W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**
Technical	Design and Construction Factors	1	Storage to Dam Construction Fill Volume Ratio	**5**	**6**	**30**	**2**	**10**	**4**	**20**	**1**	**5**	**1**	**5**	**2**	**10**
		1	Total Number of Independent Water and	**2**	**4**	**8**	**4**	**8**	**5**	**10**	**6**	**12**	**6**	**12**	**4**	**8**
		1	Total Length of Water and Tailings	**4**	**3**	**12**	**1**	**4**	**5**	**20**	**1**	**4**	**3**	**12**	**5**	**20**
		1	Complexity of Seepage Collection Pumping	**2**	**6**	**12**	**1**	**2**	**5**	**10**	**4**	**8**	**6**	**12**	**1**	**2**
				Sub-account merit score (∑(SxW))		**62**		**24**		**60**		**29**		**41**		**40**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**4.77**		**1.85**		**4.62**		**2.23**		**3.15**		**3.08**
	Technical Considerations	2	Maximum TMF Dam Height	**6**	**6**	**36**	**2**	**12**	**6**	**36**	**4**	**24**	**1**	**6**	**5**	**30**
		2	Dam Monitoring and Maintenance	**6**	**6**	**36**	**2**	**12**	**5**	**30**	**3**	**18**	**1**	**6**	**4**	**24**
				Sub-account merit score (∑(SxW))		**72**		**24**		**66**		**42**		**12**		**54**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**6.00**		**2.00**		**5.50**		**3.50**		**1.00**		**4.50**

Quantitative analysis for sub-accounts related to Technical Account			Alternative-E		Alternative-G		Alternative-H		Alternative-I		Alternative-J		Alternative-O	
Account	Sub-account	Sub-Account Weight (W)	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score
Technical	Design and Construction Factors	6	4.8	28.6	1.8	11.1	4.6	27.7	2.2	13.4	3.2	18.9	3.1	18.5
	Technical Considerations	6	6.0	36.0	2.0	12.0	5.5	33.0	3.5	21.0	1.0	6.0	4.5	27.0
	Account merit score (Σ{Rs × W})			64.6		23.1		60.7		34.4		24.9		45.5
	Account merit rating (Ra = Σ{Rs×W}/ ΣW)			5.4		1.9		5.1		2.9		2.1		3.8

Quantitative analysis for indicators related to Economical Account					Alternative-E		Alternative-G		Alternative-H		Alternative-I		Alternative-J		Alternative-O	
Account	Sub-account	ID	Indicator	Indicator Weight (W)	Indicator Value (S)	Indicator Merit Score (S × W)	Indicator Value (S)	Indicator Merit Score (S × W)	Indicator Value (S)	Indicator Merit Score (S × W)	Indicator Value (S)	Indicator Merit Score (S × W)	Indicator Value (S)	Indicator Merit Score (S × W)	Indicator Value (S)	Indicator Merit Score (S × W)
Economical	Capital Costs	1	Site Preparation and Initial TMF Dam Construction Costs	6	6	36	3	18	5	30	1	6	2	12	4	24
		1	Road Construction	2	3	6	5	10	1	2	1	2	2	4	5	10
		1	Habitat Offset / Compensation Costs	4	3	12	4	16	1	4	5	20	6	24	3	12
		1	Conveyance Costs (Pipeline, Conveyor, Stacker, Trucks)	3	6	18	6	18	5	15	1	3	4	12	4	12
		1	Seepage Collection Infrastructure Costs	2	6	12	1	2	4	8	4	8	5	10	2	4
				Sub-account merit score (∑(SxW))		84		64		59		39		62		62
				Sub-account merit rating (RS=∑(SxW)/∑W)		4.94		3.76		3.47		2.29		3.65		3.65
	Operating Cost	2	Annual Tailings Operating Costs	4	5	20	6	24	4	16	1	4	4	16	4	16
		2	Water Treatment Costs	4	5	20	6	24	1	4	5	20	6	24	5	20
				Sub-account merit score (∑(SxW))		40		48		20		24		40		36
				Sub-account merit rating (RS=∑(SxW)/∑W)		5.00		6.00		2.50		3.00		5.00		4.50
	Closure Cost	3	TMF Cover and Reclamation Costs	5	3	15	4	20	1	5	3	15	5	25	3	15
		3	Road Reclamation Costs	2	3	6	6	12	1	2	1	2	2	4	5	10
		3	Water Management Infrastructure Reclamation Costs	4	1	4	3	12	6	24	2	8	4	16	2	8
		3	Inspection / Maintenance / Operations / Monitoring Costs	3	3	9	1	3	5	15	1	3	3	9	5	15
				Sub-account merit score (∑(SxW))		34		47		46		28		54		48
				Sub-account merit rating (RS=∑(SxW)/∑W)		2.4		3.4		3.3		2.0		3.9		3.4

Quantitative analysis for sub-accounts related to Economical Account			Alternative-E		Alternative-G		Alternative-H		Alternative-I		Alternative-J		Alternative-O	
Account	Sub-account	Sub-Account Weight (W)	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score
Economical	Capital Costs	6	4.9	29.6	3.8	22.6	3.5	20.8	2.3	13.8	3.6	21.9	3.6	21.9
	Operating Cost	4	5.0	20.0	6.0	24.0	2.5	10.0	3.0	12.0	5.0	20.0	4.5	18.0
	Closure Cost	5	2.4	12.1	3.4	16.8	3.3	16.4	2.0	10.0	3.9	19.3	3.4	17.1
	Account merit score (Σ{Rs × W})			61.8		63.4		47.3		35.8		61.2		57.0
	Account merit rating (Ra = Σ{Rs×W}/ ΣW)			4.1		4.2		3.2		2.4		4.1		3.8

Quantitative analysis for indicators related to Socio-Economical Account					Alternative-E		Alternative-G		Alternative-H		Alternative-I		Alternative-J		Alternative-O	
Account	Sub-account	ID	Indicator	Indicator Weight (W)	Indicator Value (S)	Indicator Merit Score (S × W)	Indicator Value (S)	Indicator Merit Score (S × W)	Indicator Value (S)	Indicator Merit Score (S × W)	Indicator Value (S)	Indicator Merit Score (S × W)	Indicator Value (S)	Indicator Merit Score (S × W)	Indicator Value (S)	Indicator Merit Score (S × W)
Socio-Economical	Indigenous Land Use	1	Wild Rice	2	6	12	6	12	6	12	6	12	6	12	6	12
		1	Moose Late Wintering Habitat	3	4	12	4	12	1	3	4	12	6	18	4	12
		1	Moose Foraging Habitat	3	5	15	6	18	1	3	6	18	6	18	2	6
		1	Loss of Indigenous Land Uses	4	6	24	4	16	1	4	1	4	6	24	4	16
				Sub-account merit score (∑(SxW))		63		58		22		46		72		46
				Sub-account merit rating (RS=∑(SxW)/∑W)		5.3		4.8		1.8		3.8		6.0		3.8
	Potential Adverse Safety and Environmental Consequences	3	Public Safety Hazard Potential (runout)	6	5	30	2	12	3	18	2	12	1	6	5	30
		3	Public Safety Dam Height	6	6	36	2	12	6	36	4	24	1	6	5	30
		3	Aesthetics	1	2	2	4	4	6	6	6	6	1	1	6	6
				Sub-account merit score (∑(SxW))		68		28		60		42		13		66
				Sub-account merit rating (RS=∑(SxW)/∑W)		5.2		2.2		4.6		3.2		1.0		5.1

Quantitative analysis for sub-accounts related to Socio-Economical Account			Alternative-E		Alternative-G		Alternative-H		Alternative-I		Alternative-J		Alternative-O	
Account	Sub-account	Sub-Account Weight (W)	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score
Socio-Economical	Indigenous Land Use	4	5.3	21.0	4.8	19.3	1.8	7.3	3.8	15.3	6.0	24.0	3.8	15.3
	Potential Adverse Safety and Environmental Consequences	6	5.2	31.4	2.2	12.9	4.6	27.7	3.2	19.4	1.0	6.0	5.1	30.5
		Account merit score (Σ{Rs × W})		52.4		32.3		35.0		34.7		30.0		45.8
		Account merit rating (Ra = Σ{Rs×W}/ ΣW)		5.2		3.2		3.5		3.5		3.0		4.6

Quantitative analysis for accounts		Alternative-E		Alternative-G		Alternative-H		Alternative-I		Alternative-J		Alternative-O	
Account	Account Weight (W)	Account Merit Rating (Ra)	Account Merit score (Ra × W)	Account Merit Rating (Ra)	Account Merit score (Ra × W)	Account Merit Rating (Ra)	Account Merit score (Ra × W)	Account Merit Rating (Ra)	Account Merit score (Ra × W)	Account Merit Rating (Ra)	Account Merit score (Ra × W)	Account Merit Rating (Ra)	Account Merit score (Ra × W)
Environmental	6	3.8	22.6	4.4	26.6	2.1	12.6	4.1	24.4	5.3	31.6	3.5	21.0
Technical	6	5.4	32.3	1.9	11.5	5.1	30.3	2.9	17.2	2.1	12.5	3.8	22.7
Economical	6	4.1	24.7	4.2	25.3	3.2	18.9	2.4	14.3	4.1	24.5	3.8	22.8
Socio-Economical	6	5.2	31.4	3.2	19.4	3.5	21.0	3.5	20.8	3.0	18.0	4.6	27.5
	Alternative merit score (Σ{Ra × W})		111.0		82.9		82.9		76.7		86.5		94.0
	Alternative merit rating (A = Σ{Ra×W}/ ΣW)		4.6		3.5		3.5		3.2		3.6		3.9

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Quantitative analysis for indicators related to Environment Account					Alternative-C		Alternative-D		Alternative-E		Alternative-F	
Account	**Sub-account**	**ID**	**Indicator**	**Indicator Weight (W)**	**Indicator Value (S)**	**Indicator Merit Score**	**Indicator Value (S)**	**Indicator Merit Score**	**Indicator Value (S)**	**Indicator Merit Score**	**Indicator Value (S)**	**Indicator Merit Score**
Environment	Fisheries Resources	2	Loss of Fish Habitat (Waterbodies)	6	1	**6**	6	**36**	6	**36**	5	**30**
		2	Loss of Fish Habitat (Watercourses)	6	3	**18**	4	**24**	6	**36**	1	**6**
		2	Number of Watercourse Crossings	2	4	**8**	5	**10**	5	**10**	6	**12**
				Sub-account merit score (∑(SxW))		**32**		**70**		**82**		**48**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**2.3**		**5.0**		**5.9**		**3.4**
	Atmospheric Emissions	3	Noise Emissions	2	5	**10**	6	**12**	1	**2**	6	**12**
		3	Greenhouse Gases (GHG) Emissions	3	2	**6**	3	**9**	1	**3**	6	**18**
				Sub-account merit score (∑(SxW))		**16**		**21**		**5**		**30**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**3.2**		**4.2**		**1.0**		**6.0**
	Terrestrial and Water Resources	4	MRS Footprint	5	4	**20**	5	**25**	1	**5**	6	**30**
		4	Number of Subcatchment Areas Affected	6	3	**18**	4	**24**	3	**18**	6	**36**
		4	Haul / Access Road Corridor Footprint	2	1	**2**	2	**4**	2	**4**	5	**10**
				Sub-account merit score (∑(SxW))		**40**		**53**		**27**		**76**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**3.1**		**4.1**		**2.1**		**5.8**
	Species at Risk	5	Direct Loss of Wolverine Habitat	4	5	**20**	5	**20**	1	**4**	6	**24**
		5	Direct Loss of Caribou Habitat	3	3	**9**	5	**15**	1	**3**	6	**18**
		5	Direct Loss of Avian SAR Habitat	2	4	**8**	5	**10**	1	**2**	6	**12**
		5	Direct Loss of Bat Foraging Habitat	2	5	**10**	5	**10**	1	**2**	6	**12**
		5	Direct Loss of Maternity Roosting Habitat	2	4	**8**	4	**8**	1	**2**	6	**12**
				Sub-account merit score (∑(SxW))		**55**		**63**		**13**		**78**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**4.2**		**4.8**		**1.0**		**6.0**

Quantitative analysis for sub-accounts related to Environment Account			Alternative-C		Alternative-D		Alternative-E		Alternative-F	
Account	**Sub-account**	**Sub-Account Weight (W)**	**Sub-account merit rating**	**Sub-account merit score**	**Sub-account merit rating**	**Sub-account merit score**	**Sub-account merit rating**	**Sub-account merit score**	**Sub-account merit rating**	**Sub-account merit score**
Environment	Fisheries Resources	**6**	2.3	**13.7**	5.0	**30.0**	5.9	**35.1**	3.4	**20.6**
	Atmospheric Emissions	**3**	3.2	**9.6**	4.2	**12.6**	1.0	**3.0**	6.0	**18.0**
	Terrestrial and Water Resources	**3**	3.1	**9.2**	4.1	**12.2**	2.1	**6.2**	5.8	**17.5**
	Species at Risk	**3**	4.2	**12.7**	4.8	**14.5**	1.0	**3.0**	6.0	**18.0**
		Account merit score (Σ{Rs × W})		**45.2**		**69.4**		**47.4**		**74.1**
		Account merit rating (Ra = Σ{Rs×W}/ ΣW)		**3.0**		**4.6**		**3.2**		**4.9**

Quantitative analysis for indicators related to Technical Account					Alternative-C		Alternative-D		Alternative-E		Alternative-F	
Account	**Sub-account**	**ID**	**Indicator**	**Indicator Weight (W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**
Technical	Design and Construction Factors	1	Haul Distance	**2**	**2**	**4**	**3**	**6**	**1**	**2**	**6**	**12**
		1	Length of Perimeter Ditching	**4**	**4**	**16**	**4**	**16**	**1**	**4**	**6**	**24**
				Sub-account merit score (∑(SxW))		**20**		**22**		**6**		**36**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**3.3**		**3.7**		**1.0**		**6.0**
	Technical Considerations	2	Stockpile Height	**4**	**2**	**8**	**4**	**16**	**6**	**24**	**1**	**4**
		2	Complexity of Facility Water Management	**3**	**4**	**12**	**2**	**6**	**1**	**3**	**6**	**18**
				Sub-account merit score (∑(SxW))		**20**		**22**		**27**		**22**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**2.9**		**3.1**		**3.9**		**3.1**

Quantitative analysis for sub-accounts related to Technical Account			Alternative-C		Alternative-D		Alternative-E		Alternative-F	
Account	**Sub-account**	**Sub-Account Weight (W)**	**Sub-account merit rating**	**Sub-account merit score**	**Sub-account merit rating**	**Sub-account merit score**	**Sub-account merit rating**	**Sub-account merit score**	**Sub-account merit rating**	**Sub-account merit score**
Technical	Design and Construction Factors	**6**	3.3	**20.0**	3.7	**22.0**	1.0	**6.0**	6.0	**36.0**
	Technical Considerations	**4**	2.9	**11.4**	3.1	**12.6**	3.9	**15.4**	3.1	**12.6**
		Account merit score (Σ{Rs × W})		**31.4**		**34.6**		**21.4**		**48.6**
		Account merit rating (Ra = Σ{Rs×W}/ ΣW)		**3.1**		**3.5**		**2.1**		**4.9**

Quantitative analysis for indicators related to Economical Account					Alternative-C		Alternative-D		Alternative-E		Alternative-F	
Account	**Sub-account**	**ID**	**Indicator**	**Indicator Weight (W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**
Economical	Capital Costs	1	Habitat Offset / Compensation Costs	**4**	**3**	**12**	**4**	**16**	**6**	**24**	**1**	**4**
		1	Haul / Access Road Construction Costs	**2**	**4**	**8**	**5**	**10**	**1**	**2**	**6**	**12**
				Sub-account merit score (∑(SxW))		**20**		**26**		**26**		**16**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**3.3**		**4.3**		**4.3**		**2.7**
	Operating Cost	2	Transportation of Mine Rock to the MRS	**6**	**2**	**12**	**3**	**18**	**5**	**30**	**6**	**36**
		2	Water Management	**4**	**2**	**8**	**2**	**8**	**1**	**4**	**6**	**24**
		2	Water Treatment Costs	**4**	**3**	**12**	**4**	**16**	**1**	**4**	**5**	**20**
				Sub-account merit score (∑(SxW))		**32**		**42**		**38**		**80**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**2.3**		**3.0**		**2.7**		**5.7**
	Closure Cost	3	MRS Cover and Reclamation Costs	**5**	**4**	**20**	**4**	**20**	**1**	**5**	**5**	**25**
		3	Inspection / Maintenance / Operations / Monitoring Costs	**3**	**4**	**12**	**5**	**15**	**1**	**3**	**6**	**18**
		3	Road Reclamation Costs	**2**	**1**	**2**	**2**	**4**	**2**	**4**	**6**	**12**
				Sub-account merit score (∑(SxW))		**34**		**39**		**12**		**55**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**3.4**		**3.9**		**1.2**		**5.5**

Quantitative analysis for sub-accounts related to Economical Account			Alternative-C		Alternative-D		Alternative-E		Alternative-F	
Account	Sub-account	Sub-Account Weight (W)	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score
Economical	Capital Costs	3	3.3	10.0	4.3	13.0	4.3	13.0	2.7	8.0
	Operating Cost	6	2.3	13.7	3.0	18.0	2.7	16.3	5.7	34.3
	Closure Cost	5	3.4	17.0	3.9	19.5	1.2	6.0	5.5	27.5
		Account merit score (Σ{Rs × W})		40.7		50.5		35.3		69.8
		Account merit rating (Ra = Σ{Rs×W}/ ΣW)		2.9		3.6		2.5		5.0

Quantitative analysis for indicators related to Socio-Economical Account					Alternative-C		Alternative-D		Alternative-E		Alternative-F	
Account	Sub-account	ID	Indicator	Indicator Weight (W)	Indicator Value (S)	Indicator Merit Score (S × W)	Indicator Value (S)	Indicator Merit Score (S × W)	Indicator Value (S)	Indicator Merit Score (S × W)	Indicator Value (S)	Indicator Merit Score (S × W)
Socio-Economical	Indigenous Land Use	1	Wild Rice	2	6	12	6	12	6	12	6	12
		1	Moose Late Wintering Habitat	3	4	12	4	12	1	3	6	18
		1	Moose Foraging Habitat	3	5	15	5	15	1	3	6	18
		1	Loss of Indigenous Land Uses	4	4	16	5	20	1	4	6	24
				Sub-account merit score (∑(SxW))		55		59		22		72
				Sub-account merit rating (RS=∑(SxW)/∑W)		4.6		4.9		1.8		6.0

Quantitative analysis for sub-accounts related to Socio-Economical Account			Alternative-C		Alternative-D		Alternative-E		Alternative-F	
Account	Sub-account	Sub-Account Weight (W)	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score
Socio-Econ	Indigenous Land Use	4	4.6	18.3	4.9	19.7	1.8	7.3	6.0	24.0
		Account merit score (Σ{Rs × W})		18.3		19.7		7.3		24.0
		Account merit rating (Ra = Σ{Rs×W}/ ΣW)		4.6		4.9		1.8		6.0

Quantitative analysis for accounts		Alternative-C		Alternative-D		Alternative-E		Alternative-F	
Account	Account Weight (W)	Account Merit Rating (Ra)	Account Merit score (Ra × W)	Account Merit Rating (Ra)	Account Merit score (Ra × W)	Account Merit Rating (Ra)	Account Merit score (Ra × W)	Account Merit Rating (Ra)	Account Merit score (Ra × W)
Environmental	6	3.0	18.1	4.6	27.7	3.2	18.9	4.9	29.6
Technical	6	3.1	18.9	3.5	20.7	2.1	12.9	4.9	29.1
Economical	6	2.9	17.4	3.6	21.6	2.5	15.1	5.0	29.9
Socio-Economical	6	4.6	27.5	4.9	29.5	1.8	11.0	6.0	36.0
	Alternative merit score (Σ{Ra × W})		81.9		99.6		57.9		124.7
	Alternative merit rating (A = Σ{Ra×W}/ ΣW)		3.4		4.2		2.4		5.2

Appendix F
Sensitivity Analysis

Great Bear Project - LGO

Quantitative analysis for indicators related to Environment Account					Alternative-A		Alternative-B		Alternative-C		Alternative-D	
Account	**Sub-account**	**ID**	**Indicator**	**Indicator Weight (W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**
Environment	Fisheries Resources	2	Loss of Fish Habitat (Waterbodies)	6	6	**36**	4	**24**	6	**36**	6	**36**
		2	Loss of Fish Habitat (Watercourses)	6	6	**36**	1	**6**	6	**36**	1	**6**
		2	Number of Watercourse Crossings	2	6	**12**	6	**12**	5	**10**	6	**12**
				Sub-account merit score (∑(SxW))		**84**		**42**		**82**		**54**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**6.0**		**3.0**		**5.9**		**3.9**
	Atmospheric Emissions	3	Noise Emissions	2	2	**4**	4	**8**	1	**2**	5	**10**
		3	Greenhouse Gases (GHG) Emissions	3	1	**3**	4	**12**	2	**6**	6	**18**
				Sub-account merit score (∑(SxW))		**7**		**20**		**8**		**28**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**1.4**		**4.0**		**1.6**		**5.6**
	Terrestrial and Water Resources	4	LGO Footprint	5	3	**15**	6	**30**	2	**10**	2	**10**
		4	Compact Design	5	2	**10**	2	**10**	1	**5**	6	**30**
		4	Number of Subcatchment Areas Affected	6	3	**18**	4	**24**	6	**36**	6	**36**
		4	Haul / Access Road Corridor Footprint	5	3	**15**	5	**25**	1	**5**	5	**25**
				Sub-account merit score (∑(SxW))		**58**		**89**		**56**		**101**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**2.8**		**4.2**		**2.7**		**4.8**
	Species at Risk	5	Direct Loss of Wolverine Habitat	4	5	**20**	6	**24**	6	**24**	1	**4**
		5	Direct Loss of Caribou Habitat	3	5	**15**	6	**18**	3	**9**	1	**3**
		5	Direct Loss of Avian SAR Habitat	2	3	**6**	6	**12**	2	**4**	2	**4**
		5	Direct Loss of Bat Foraging Habitat	2	2	**4**	5	**10**	6	**12**	1	**2**
		5	Direct Loss of Maternity Roosting Habitat	2	6	**12**	6	**12**	2	**4**	2	**4**
				Sub-account merit score (∑(SxW))		**57**		**76**		**53**		**17**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**4.4**		**5.8**		**4.1**		**1.3**

Quantitative analysis for sub-accounts related to Environment Account			Alternative-A		Alternative-B		Alternative-C		Alternative-D	
Account	**Sub-account**	**Sub-Account Weight (W)**	**Sub-account merit rating**	**Sub-account merit score**	**Sub-account merit rating**	**Sub-account merit score**	**Sub-account merit rating**	**Sub-account merit score**	**Sub-account merit rating**	**Sub-account merit score**
Environment	Fisheries Resources	**6**	6.0	**36.0**	3.0	**18.0**	5.9	**35.1**	3.9	**23.1**
	Atmospheric Emissions	**3**	1.4	**4.2**	4.0	**12.0**	1.6	**4.8**	5.6	**16.8**
	Terrestrial and Water Resources	**3**	2.8	**8.3**	4.2	**12.7**	2.7	**8.0**	4.8	**14.4**
	Species at Risk	**3**	4.4	**13.2**	5.8	**17.5**	4.1	**12.2**	1.3	**3.9**
	Account merit score (Σ{Rs × W})			**61.6**		**60.3**		**60.2**		**58.3**
	Account merit rating (Ra = Σ{Rs×W}/ ΣW)			**4.1**		**4.0**		**4.0**		**3.9**

Quantitative analysis for indicators related to Technical Account					Alternative-A		Alternative-B		Alternative-C		Alternative-D	
Account	**Sub-account**	**ID**	**Indicator**	**Indicator Weight (W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**
Technical	Design and Construction Factors	1	Haul Distance	**6**	**1**	**6**	**4**	**24**	**2**	**12**	**6**	**36**
		1	Length of Perimeter Ditching	**4**	**2**	**8**	**3**	**12**	**2**	**8**	**5**	**20**
				Sub-account merit score (∑(SxW))		**14**		**36**		**20**		**56**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**1.4**		**3.6**		**2.0**		**5.6**
	Operational Considerations	3	Complexity of Facility Water Management	**3**	**5**	**15**	**1**	**3**	**5**	**15**	**6**	**18**
		3	Stockpile Height	**3**	**6**	**18**	**3**	**9**	**2**	**6**	**1**	**3**
				Sub-account merit score (∑(SxW))		**33**		**12**		**21**		**21**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**5.5**		**2.0**		**3.5**		**3.5**

Quantitative analysis for sub-accounts related to Technical Account			Alternative-A		Alternative-B		Alternative-C		Alternative-D	
Account	**Sub-account**	**Sub-Account Weight (W)**	**Sub-account merit rating**	**Sub-account merit score**	**Sub-account merit rating**	**Sub-account merit score**	**Sub-account merit rating**	**Sub-account merit score**	**Sub-account merit rating**	**Sub-account merit score**
Technical	Design and Construction Factors	**6**	1.4	**8.4**	3.6	**21.6**	2.0	**12.0**	5.6	**33.6**
	Operational Considerations	**3**	5.5	**16.5**	2.0	**6.0**	3.5	**10.5**	3.5	**10.5**
	Account merit score (Σ{Rs × W})			**24.9**		**27.6**		**22.5**		**44.1**
	Account merit rating (Ra = Σ{Rs×W}/ ΣW)			**2.8**		**3.1**		**2.5**		**4.9**

Quantitative analysis for indicators related to Economical Account					Alternative-A		Alternative-B		Alternative-C		Alternative-D	
Account	**Sub-account**	**ID**	**Indicator**	**Indicator Weight (W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**
Economical	Capital Costs	1	Habitat Offset / Compensation Costs	**4**	**6**	**24**	**1**	**4**	**6**	**24**	**1**	**4**
		1	Haul / Access Road Construction Costs	**2**	**3**	**6**	**4**	**8**	**2**	**4**	**3**	**6**
				Sub-account merit score (∑(SxW))		**30**		**12**		**28**		**10**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**5.0**		**2.0**		**4.7**		**1.7**
	Operating Cost	2	Transportation of Mine Rock to the LGO	**6**	**1**	**6**	**4**	**24**	**2**	**12**	**6**	**36**
		2	Water Management	**4**	**4**	**16**	**1**	**4**	**4**	**16**	**6**	**24**
				Sub-account merit score (∑(SxW))		**22**		**28**		**28**		**60**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**2.2**		**2.8**		**2.8**		**6.0**
	Closure Cost	3	LGO Cover and Reclamation Costs	**5**	**2**	**10**	**2**	**10**	**2**	**10**	**1**	**5**
		3	Inspection / Maintenance / Operations / Monitoring Costs	**3**	**3**	**9**	**6**	**18**	**2**	**6**	**2**	**6**
		3	Road Reclamation Costs	**2**	**3**	**6**	**6**	**12**	**1**	**2**	**6**	**12**
				Sub-account merit score (∑(SxW))		**25**		**40**		**18**		**23**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**2.5**		**4.0**		**1.8**		**2.3**

Quantitative analysis for sub-accounts related to Economical Account			Alternative-A		Alternative-B		Alternative-C		Alternative-D	
Account	Sub-account	Sub-Account Weight (W)	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score
Economical	Capital Costs	3	5.0	15.0	2.0	6.0	4.7	14.0	1.7	5.0
	Operating Cost	6	2.2	13.2	2.8	16.8	2.8	16.8	6.0	36.0
	Closure Cost	5	2.5	12.5	4.0	20.0	1.8	9.0	2.3	11.5
		Account merit score (Σ{Rs × W})		40.7		42.8		39.8		52.5
		Account merit rating (Ra = Σ{Rs×W}/ ΣW)		2.9		3.1		2.8		3.8

Quantitative analysis for indicators related to Socio-Economical Account					Alternative-A		Alternative-B		Alternative-C		Alternative-D	
Account	Sub-account	ID	Indicator	Indicator Weight (W)	Indicator Value (S)	Indicator Merit Score (S × W)	Indicator Value (S)	Indicator Merit Score (S × W)	Indicator Value (S)	Indicator Merit Score (S × W)	Indicator Value (S)	Indicator Merit Score (S × W)
Socio-Economical	Indigenous Land Use	1	Wild Rice	2	6	12	6	12	6	12	6	12
		1	Moose Late Wintering Habitat	3	3	9	6	18	2	6	2	6
		1	Moose Foraging Habitat	3	1	3	6	18	6	18	6	18
		1	Loss of Indigenous Land Uses	4	3	12	6	24	2	8	2	8
				Sub-account merit score (∑(SxW))		36		72		44		44
				Sub-account merit rating (RS=∑(SxW)/∑W)		3.0		6.0		3.7		3.7
	Operational Impact (Aesthetics)	2	Aesthetics	1	5	5	1	1	4	4	3	3
		2	Compact Design	3	2	6	2	6	1	3	6	18
				Sub-account merit score (∑(SxW))		11		7		7		21
				Sub-account merit rating (RS=∑(SxW)/∑W)		2.8		1.8		1.8		5.3

Quantitative analysis for sub-accounts related to Socio-Economical Account			Alternative-A		Alternative-B		Alternative-C		Alternative-D	
Account	Sub-account	Sub-Account Weight (W)	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score
Socio-Economical	Indigenous Land Use	4	3.0	12.0	6.0	24.0	3.7	14.7	3.7	14.7
	Operational Impact (Aesthetics)	1	2.8	2.8	1.8	1.8	1.8	1.8	5.3	5.3
		Account merit score (Σ{Rs × W})		14.8		25.8		16.4		19.9
		Account merit rating (Ra = Σ{Rs×W}/ ΣW)		3.0		5.2		3.3		4.0

Quantitative analysis for accounts		Alternative-A		Alternative-B		Alternative-C		Alternative-D	
Account	Account Weight (W)	Account Merit Rating (Ra)	Account Merit score (Ra × W)	Account Merit Rating (Ra)	Account Merit score (Ra × W)	Account Merit Rating (Ra)	Account Merit score (Ra × W)	Account Merit Rating (Ra)	Account Merit score (Ra × W)
Environmental	6	4.1	24.7	4.0	24.1	4.0	24.1	3.9	23.3
Technical	6	2.8	16.6	3.1	18.4	2.5	15.0	4.9	29.4
Economical	6	2.9	17.4	3.1	18.3	2.8	17.1	3.8	22.5
Socio-Economical	6	3.0	17.7	5.2	30.9	3.3	19.7	4.0	23.9
	Alternative merit score (Σ{Ra × W})		76.4		91.7		75.8		99.1
	Alternative merit rating (A = Σ{Ra×W}/ ΣW)		3.2		3.8		3.2		4.1

Great Bear Project - MWP

Quantitative analysis for indicators related to Environment Account					Alternative-A		Alternative-B		Alternative-F	
Account	**Sub-account**	**ID**	**Indicator**	**Indicator Weight (W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**
Environment	Water Resources	1	Including the TMF Subcatchment	5	5	**25**	6	**30**	5	**25**
		1	Storage Capacity	6	4	**24**	2	**12**	6	**36**
				Sub-account merit score (∑(SxW))		**49**		**42**		**61**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**4.5**		**3.8**		**5.5**
	Fisheries Resources	2	Loss of Fish Habitat (Waterbodies)	6	6	**36**	1	**6**	6	**36**
		2	Loss of Fish Habitat (Watercourses)	5	5	**25**	6	**30**	1	**5**
		2	Number of Watercourse Crossings	2	6	**12**	6	**12**	4	**8**
				Sub-account merit score (∑(SxW))		**73**		**48**		**49**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**5.6**		**3.7**		**3.8**
	Atmospheric Emissions	3	Noise Emissions	1	2	**2**	5	**5**	4	**4**
		3	Greenhouse Gases (GHG) Emissions	1	6	**6**	6	**6**	6	**6**
				Sub-account merit score (∑(SxW))		**8**		**11**		**10**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**4.0**		**5.5**		**5.0**
	Terrestrial Resources	4	MWP Footprint	5	1	**5**	4	**20**	1	**5**
		4	Haul / Access Road Corridors	2	1	**2**	6	**12**	4	**8**
				Sub-account merit score (∑(SxW))		**7**		**32**		**13**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**1.0**		**4.6**		**1.9**
	Species at Risk	5	Direct Loss of Wolverine Habitat	4	1	**4**	2	**8**	6	**24**
		5	Direct Loss of Caribou Habitat	3	2	**6**	6	**18**	3	**9**
		5	Direct Loss of Avian SAR Habitat	2	2	**4**	6	**12**	1	**2**
		5	Direct Loss of Bat Foraging Habitat	2	2	**4**	1	**2**	6	**12**
		5	Direct Loss of Maternity Roosting Habitat	2	3	**6**	6	**12**	2	**4**
				Sub-account merit score (∑(SxW))		**24**		**52**		**51**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**1.8**		**4.0**		**3.9**

Quantitative analysis for sub-accounts related to Environment Account			Alternative-A		Alternative-B		Alternative-F	
Account	**Sub-account**	**Sub-Account Weight (W)**	**Sub-account merit rating**	**Sub-account merit score**	**Sub-account merit rating**	**Sub-account merit score**	**Sub-account merit rating**	**Sub-account merit score**
Environment	Water Resources	**6**	4.5	**26.7**	3.8	**22.9**	5.5	**33.3**
	Fisheries Resources	**6**	5.6	**33.7**	3.7	**22.2**	3.8	**22.6**
	Atmospheric Emissions	**2**	4.0	**8.0**	5.5	**11.0**	5.0	**10.0**
	Terrestrial Resources	**3**	1.0	**3.0**	4.6	**13.7**	1.9	**5.6**
	Species at Risk	**3**	1.8	**5.5**	4.0	**12.0**	3.9	**11.8**
		Account merit score (Σ{Rs × W})		**77.0**		**81.8**		**83.2**
		Account merit rating (Ra = Σ{Rs×W}/ ΣW)		**3.8**		**4.1**		**4.2**

Quantitative analysis for indicators related to Technical Account					Alternative-A		Alternative-B		Alternative-F	
Account	**Sub-account**	**ID**	**Indicator**	**Indicator Weight (W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**
Technical	Design and Construction Factors	1	Storage to Dam Construction Fill Volume Ratio	**6**	**6**	**36**	**5**	**30**	**2**	**12**
		1	Total Number of Independent Water	**2**	**1**	**2**	**6**	**12**	**4**	**8**
		1	Total Length of Water Management Dams	**4**	**4**	**16**	**6**	**24**	**1**	**4**
		1	Complexity of Seepage Collection Pumping	**2**	**1**	**2**	**6**	**12**	**3**	**6**
				Sub-account merit score (∑(SxW))		**56**		**78**		**30**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**4.0**		**5.6**		**2.1**
	Technical Considerations	2	Maximum MWP Dam Height	**6**	**5**	**30**	**6**	**36**	**1**	**6**
		2	Dam Monitoring and Maintenance	**2**	**4**	**8**	**6**	**12**	**1**	**2**
				Sub-account merit score (∑(SxW))		**38**		**48**		**8**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**4.8**		**6.0**		**1.0**

Quantitative analysis for sub-accounts related to Technical Account			Alternative-A		Alternative-B		Alternative-F	
Account	**Sub-account**	**Sub-Account Weight (W)**	**Sub-account merit rating**	**Sub-account merit score**	**Sub-account merit rating**	**Sub-account merit score**	**Sub-account merit rating**	**Sub-account merit score**
Technical	Design and Construction Factors	**6**	4.0	**24.0**	5.6	**33.4**	2.1	**12.9**
	Technical Considerations	**6**	4.8	**28.5**	6.0	**36.0**	1.0	**6.0**
	Account merit score (Σ{Rs × W})			**52.5**		**69.4**		**18.9**
	Account merit rating (Ra = Σ{Rs×W}/ ΣW)			**4.4**		**5.8**		**1.6**

Quantitative analysis for indicators related to Economical Account					Alternative-A		Alternative-B		Alternative-F	
Account	**Sub-account**	**ID**	**Indicator**	**Indicator Weight (W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**
Economical	Capital Costs	1	Site Preparation and Dam Construction Costs	**6**	**6**	**36**	**6**	**36**	**1**	**6**
		1	Road Construction	**2**	**5**	**10**	**6**	**12**	**5**	**10**
		1	Habitat Offset / Compensation Costs	**4**	**6**	**24**	**1**	**4**	**3**	**12**
		1	Conveyance Costs (Pipeline)	**3**	**3**	**9**	**5**	**15**	**4**	**12**
		1	Seepage Collection Infrastructure Costs	**2**	**1**	**2**	**6**	**12**	**3**	**6**
				Sub-account merit score (∑(SxW))		**81**		**79**		**46**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**4.8**		**4.6**		**2.7**
	Closure Cost	2	MWP Reclamation Costs	**3**	**3**	**9**	**4**	**12**	**3**	**9**
		2	Road Reclamation Costs	**2**	**1**	**2**	**6**	**12**	**5**	**10**
		2	Inspection / Maintenance / Operations / Monitoring Costs	**3**	**4**	**12**	**6**	**18**	**1**	**3**
				Sub-account merit score (∑(SxW))		**23**		**42**		**22**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**2.9**		**5.3**		**2.8**

Quantitative analysis for sub-accounts related to Economical Account			Alternative-A		Alternative-B		Alternative-F	
Account	Sub-account	Sub-Account Weight (W)	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score
Economical	Capital Costs	6	4.8	28.6	4.6	27.9	2.7	16.2
	Closure Cost	5	2.9	14.4	5.3	26.3	2.8	13.8
		Account merit score (Σ{Rs × W})		43.0		54.1		30.0
		Account merit rating (Ra = Σ{Rs×W}/ ΣW)		3.9		4.9		2.7

Quantitative analysis for indicators related to Socio-Economical Account					Alternative-A		Alternative-B		Alternative-F	
Account	Sub-account	ID	Indicator	Indicator Weight (W)	Indicator Value (S)	Indicator Merit Score (S × W)	Indicator Value (S)	Indicator Merit Score (S × W)	Indicator Value (S)	Indicator Merit Score (S × W)
Socio-Economical	Indigenous Land Use	1	Wild Rice	2	6	12	1	2	6	12
		1	Moose Late Wintering Habitat	3	3	9	6	18	1	3
		1	Moose Foraging Habitat	3	3	9	3	9	6	18
		1	Loss of Indigenous Land Uses	4	3	12	6	24	1	4
				Sub-account merit score (∑(SxW))		42		53		37
				Sub-account merit rating (RS=∑(SxW)/∑W)		3.5		4.4		3.1
	Potential Adverse Safety and Environmental Consequences	3	Public Safety Hazard Potential (runout)	6	5	30	6	36	2	12
		3	Public Safety Hazard Potential (dam height)	6	3	18	5	30	1	6
		3	Aesthetics	1	1	1	3	3	6	6
				Sub-account merit score (∑(SxW))		49		69		24
				Sub-account merit rating (RS=∑(SxW)/∑W)		3.8		5.3		1.8

Quantitative analysis for sub-accounts related to Socio-Economical Account			Alternative-A		Alternative-B		Alternative-F	
Account	Sub-account	Sub-Account Weight (W)	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score
Socio-Economical	Indigenous Land Use	4	3.5	14.0	4.4	17.7	3.1	12.3
	Potential Adverse Safety and Environmental Consequences	6	3.8	22.6	5.3	31.8	1.8	11.1
		Account merit score (Σ{Rs × W})		36.6		49.5		23.4
		Account merit rating (Ra = Σ{Rs×W}/ ΣW)		3.7		5.0		2.3

Quantitative analysis for accounts		Alternative-A		Alternative-B		Alternative-F	
Account	Account Weight (W)	Account Merit Rating (Ra)	Account Merit score (Ra × W)	Account Merit Rating (Ra)	Account Merit score (Ra × W)	Account Merit Rating (Ra)	Account Merit score (Ra × W)
Environmental	6	3.8	23.1	4.1	24.5	4.2	25.0
Technical	6	4.4	26.3	5.8	34.7	1.6	9.4
Economical	6	3.9	23.4	4.9	29.5	2.7	16.4
Socio-Economical	6	3.7	22.0	5.0	29.7	2.3	14.0
	Alternative merit score (Σ{Ra × W})		94.7		118.5		64.8
	Alternative merit rating (A = Σ{Ra×W}/ ΣW)		3.9		4.9		2.7

Great Bear Project - OVB

Quantitative analysis for indicators related to Environment Account					Alternative-C		Alternative-D		Alternative-E		Alternative-F	
Account	**Sub-account**	**ID**	**Indicator**	**Indicator Weight (W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**
Environment	Fisheries Resources	2	Loss of Fish Habitat (Waterbodies)	6	6	**36**	6	**36**	6	**36**	6	**36**
		2	Loss of Fish Habitat (Watercourses)	6	2	**12**	3	**18**	6	**36**	1	**6**
		2	Number of Watercourse Crossings	2	4	**8**	5	**10**	6	**12**	6	**12**
				Sub-account merit score (∑(SxW))		**56**		**64**		**84**		**54**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**4.0**		**4.6**		**6.0**		**3.9**
	Atmospheric Emissions	3	Noise Emissions	2	2	**4**	1	**2**	5	**10**	6	**12**
		3	Greenhouse Gases (GHG) Emissions	3	2	**6**	2	**6**	1	**3**	6	**18**
				Sub-account merit score (∑(SxW))		**10**		**8**		**13**		**30**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**2.0**		**1.6**		**2.6**		**6.0**
	Terrestrial and Water Resources	4	OVB Footprint	5	3	**15**	3	**15**	1	**5**	6	**30**
		4	Number of Subcatchment Areas Affected	6	3	**18**	5	**30**	5	**30**	5	**30**
		4	Haul / Access Road Corridor Footprint	2	2	**4**	1	**2**	4	**8**	6	**12**
				Sub-account merit score (∑(SxW))		**37**		**47**		**43**		**72**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**2.8**		**3.6**		**3.3**		**5.5**
	Species at Risk	5	Direct Loss of Wolverine Habitat	4	2	**8**	3	**12**	1	**4**	6	**24**
		5	Direct Loss of Caribou Habitat	3	4	**12**	5	**15**	1	**3**	6	**18**
		5	Direct Loss of Avian SAR Habitat	2	3	**6**	3	**6**	1	**2**	6	**12**
		5	Direct Loss of Bat Foraging Habitat	2	3	**6**	4	**8**	1	**2**	6	**12**
		5	Direct Loss of Maternity Roosting Habitat	2	1	**2**	3	**6**	5	**10**	5	**10**
				Sub-account merit score (∑(SxW))		**34**		**47**		**21**		**76**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**2.6**		**3.6**		**1.6**		**5.8**

Quantitative analysis for sub-accounts related to Environment Account			Alternative-C		Alternative-D		Alternative-E		Alternative-F	
Account	**Sub-account**	**Sub-Account Weight (W)**	**Sub-account merit rating**	**Sub-account merit score**	**Sub-account merit rating**	**Sub-account merit score**	**Sub-account merit rating**	**Sub-account merit score**	**Sub-account merit rating**	**Sub-account merit score**
Environment	Fisheries Resources	**6**	4.0	**24.0**	4.6	**27.4**	6.0	**36.0**	3.9	**23.1**
	Atmospheric Emissions	**3**	2.0	**6.0**	1.6	**4.8**	2.6	**7.8**	6.0	**18.0**
	Terrestrial and Water Resources	**3**	2.8	**8.5**	3.6	**10.8**	3.3	**9.9**	5.5	**16.6**
	Species at Risk	**3**	2.6	**7.8**	3.6	**10.8**	1.6	**4.8**	5.8	**17.5**
		Account merit score (Σ{Rs × W})		**46.4**		**53.9**		**58.6**		**75.3**
		Account merit rating (Ra = Σ{Rs×W}/ ΣW)		**3.1**		**3.6**		**3.9**		**5.0**

Quantitative analysis for indicators related to Technical Account					Alternative-C		Alternative-D		Alternative-E		Alternative-F	
Account	**Sub-account**	**ID**	**Indicator**	**Indicator Weight (W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**
Technical	Design and Construction Factors	1	Haul Distance	**2**	**2**	**4**	**2**	**4**	**1**	**2**	**6**	**12**
		1	Length of Perimeter Ditching	**4**	**1**	**4**	**3**	**12**	**1**	**4**	**6**	**24**
				Sub-account merit score (∑(SxW))		**8**		**16**		**6**		**36**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**1.3**		**2.7**		**1.0**		**6.0**
	Technical Considerations	2	Stockpile Height	**4**	**1**	**4**	**1**	**4**	**6**	**24**	**4**	**16**
		2	Complexity of Facility Water Management	**3**	**1**	**3**	**3**	**9**	**3**	**9**	**6**	**18**
				Sub-account merit score (∑(SxW))		**7**		**13**		**33**		**34**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**1.0**		**1.9**		**4.7**		**4.9**

Quantitative analysis for sub-accounts related to Technical Account			Alternative-C		Alternative-D		Alternative-E		Alternative-F	
Account	**Sub-account**	**Sub-Account Weight (W)**	**Sub-account merit rating**	**Sub-account merit score**	**Sub-account merit rating**	**Sub-account merit score**	**Sub-account merit rating**	**Sub-account merit score**	**Sub-account merit rating**	**Sub-account merit score**
Technical	Design and Construction Factors	**6**	1.3	**8.0**	2.7	**16.0**	1.0	**6.0**	6.0	**36.0**
	Technical Considerations	**4**	1.0	**4.0**	1.9	**7.4**	4.7	**18.9**	4.9	**19.4**
	Account merit score (Σ{Rs × W})			**12.0**		**23.4**		**24.9**		**55.4**
	Account merit rating (Ra = Σ{Rs×W}/ ΣW)			**1.2**		**2.3**		**2.5**		**5.5**

Quantitative analysis for indicators related to Economical Account					Alternative-C		Alternative-D		Alternative-E		Alternative-F	
Account	**Sub-account**	**ID**	**Indicator**	**Indicator Weight (W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**
Economical	Capital and Operational Cost Considerations	1	Habitat Offset / Compensation Costs	**4**	**4**	**16**	**5**	**20**	**6**	**24**	**1**	**4**
		1	Transportation of Mine Rock to the OVB	**6**	**2**	**12**	**2**	**12**	**1**	**6**	**6**	**36**
		1	Haul / Access Road Construction Costs	**2**	**1**	**2**	**1**	**2**	**1**	**2**	**2**	**4**
				Sub-account merit score (∑(SxW))		**30**		**34**		**32**		**44**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**2.5**		**2.8**		**2.7**		**3.7**
	Closure Cost	3	OVB Cover and Reclamation Costs	**5**	**1**	**5**	**1**	**5**	**1**	**5**	**2**	**10**
		3	Inspection / Maintenance / Operations / Monitoring Costs	**3**	**3**	**9**	**3**	**9**	**1**	**3**	**6**	**18**
		3	Road Reclamation Costs	**2**	**5**	**10**	**1**	**2**	**4**	**8**	**6**	**12**
				Sub-account merit score (∑(SxW))		**24**		**16**		**16**		**40**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**2.4**		**1.6**		**1.6**		**4.0**

Quantitative analysis for sub-accounts related to Economical Account			Alternative-C		Alternative-D		Alternative-E		Alternative-F	
Account	Sub-account	Sub-Account Weight (W)	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score
Economical	Capital and Operational Cost Considerations	3	2.5	7.5	2.8	8.5	2.7	8.0	3.7	11.0
	Closure Cost	5	2.4	12.0	1.6	8.0	1.6	8.0	4.0	20.0
		Account merit score (Σ{Rs × W})		19.5		16.5		16.0		31.0
		Account merit rating (Ra = Σ{Rs×W}/ ΣW)		2.4		2.1		2.0		3.9

Quantitative analysis for indicators related to Socio-Economical Account					Alternative-C		Alternative-D		Alternative-E		Alternative-F	
Account	Sub-account	ID	Indicator	Indicator Weight (W)	Indicator Value (S)	Indicator Merit Score (S × W)	Indicator Value (S)	Indicator Merit Score (S × W)	Indicator Value (S)	Indicator Merit Score (S × W)	Indicator Value (S)	Indicator Merit Score (S × W)
Socio-Economical	Indigenous Land Use	1	Wild Rice	2	6	12	6	12	6	12	6	12
		1	Moose Late Wintering Habitat	3	3	9	3	9	1	3	6	18
		1	Moose Foraging Habitat	3	6	18	5	15	1	3	5	15
		1	Loss of Indigenous Land Uses	4	3	12	3	12	1	4	6	24
				Sub-account merit score (∑(SxW))		51		48		22		69
				Sub-account merit rating (RS=∑(SxW)/∑W)		4.3		4.0		1.8		5.8

Quantitative analysis for sub-accounts related to Socio-Economical Account			Alternative-C		Alternative-D		Alternative-E		Alternative-F	
Account	Sub-account	Sub-Account Weight (W)	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score
Socio-Econ	Indigenous Land Use	4	4.3	17.0	4.0	16.0	1.8	7.3	5.8	23.0
		Account merit score (Σ{Rs × W})		17.0		16.0		7.3		23.0
		Account merit rating (Ra = Σ{Rs×W}/ ΣW)		4.3		4.0		1.8		5.8

Quantitative analysis for accounts		Alternative-C		Alternative-D		Alternative-E		Alternative-F	
Account	Account Weight (W)	Account Merit Rating (Ra)	Account Merit score (Ra × W)	Account Merit Rating (Ra)	Account Merit score (Ra × W)	Account Merit Rating (Ra)	Account Merit score (Ra × W)	Account Merit Rating (Ra)	Account Merit score (Ra × W)
Environmental	6	3.1	18.6	3.6	21.6	3.9	23.4	5.0	30.1
Technical	6	1.2	7.2	2.3	14.1	2.5	14.9	5.5	33.3
Economical	6	2.4	14.6	2.1	12.4	2.0	12.0	3.9	23.3
Socio-Economical	6	4.3	25.5	4.0	24.0	1.8	11.0	5.8	34.5
	Alternative merit score (Σ{Ra × W})		65.9		72.0		61.3		121.1
	Alternative merit rating (A = Σ{Ra×W}/ ΣW)		2.7		3.0		2.6		5.0

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Quantitative analysis for indicators related to Environment Account					Alternative-E		Alternative-G		Alternative-H		Alternative-I		Alternative-J		Alternative-O	
Account	**Sub-account**	**ID**	**Indicator**	**Indicator Weight (W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**
Environment	Fisheries Resources	2	Loss of Fish Habitat (Waterbodies)	6	2	**12**	5	**30**	1	**6**	6	**36**	6	**36**	6	**36**
		2	Loss of Fish Habitat (Watercourses)	6	3	**18**	3	**18**	1	**6**	5	**30**	6	**36**	3	**18**
		2	Number of Watercourse Crossings	6	4	**24**	5	**30**	3	**18**	5	**30**	3	**18**	5	**30**
				Sub-account merit score (∑(SxW))		**54**		**78**		**30**		**96**		**90**		**84**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**3.0**		**4.3**		**1.7**		**5.3**		**5.0**		**4.7**
	Atmospheric Emissions	3	Noise Emissions	6	5	**30**	5	**30**	1	**6**	2	**12**	2	**12**	6	**36**
		3	Greenhouse Gases (GHG) Emissions	6	6	**36**	3	**18**	5	**30**	1	**6**	1	**6**	3	**18**
		3	Fugitive Dust	6	4	**24**	5	**30**	1	**6**	4	**24**	6	**36**	4	**24**
				Sub-account merit score (∑(SxW))		**90**		**78**		**42**		**42**		**54**		**78**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**5.0**		**4.3**		**2.3**		**2.3**		**3.0**		**4.3**
	Terrestrial and Water Resources	4	TMF Footprint	6	6	**36**	3	**18**	1	**6**	1	**6**	6	**36**	2	**12**
		4	Number of Subcatchment Areas Affected	6	6	**36**	3	**18**	6	**36**	4	**24**	5	**30**	4	**24**
		4	Haul / Access Road Corridors	6	3	**18**	6	**36**	1	**6**	1	**6**	2	**12**	5	**30**
				Sub-account merit score (∑(SxW))		**90**		**72**		**48**		**36**		**78**		**66**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**5.0**		**4.0**		**2.7**		**2.0**		**4.3**		**3.7**
	Species at Risk	5	Direct Loss of Wolverine Habitat	6	1	**6**	6	**36**	2	**12**	5	**30**	6	**36**	1	**6**
		5	Direct Loss of Caribou Habitat	6	5	**30**	5	**30**	5	**30**	5	**30**	6	**36**	1	**6**
		5	Direct Loss of Avian SAR Habitat	6	6	**36**	4	**24**	1	**6**	1	**6**	6	**36**	4	**24**
		5	Direct Loss of Bat Foraging Habitat	6	3	**18**	5	**30**	1	**6**	5	**30**	6	**36**	2	**12**
		5	Direct Loss of Maternity Roosting Habitat	6	4	**24**	4	**24**	1	**6**	3	**18**	6	**36**	4	**24**
				Sub-account merit score (∑(SxW))		**114**		**144**		**60**		**114**		**180**		**72**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**3.8**		**4.8**		**2.0**		**3.8**		**6.0**		**2.4**

Quantitative analysis for sub-accounts related to Environment Account			Alternative-E		Alternative-G		Alternative-H		Alternative-I		Alternative-J		Alternative-O	
Account	**Sub-account**	**Sub-Account Weight (W)**	**Sub-account merit rating**	**Sub-account merit score**	**Sub-account merit rating**	**Sub-account merit score**	**Sub-account merit rating**	**Sub-account merit score**	**Sub-account merit rating**	**Sub-account merit score**	**Sub-account merit rating**	**Sub-account merit score**	**Sub-account merit rating**	**Sub-account merit score**
Environment	Fisheries Resources	**6**	3.0	**18.0**	4.3	**26.0**	1.7	**10.0**	5.3	**32.0**	5.0	**30.0**	4.7	**28.0**
	Atmospheric Emissions	**6**	5.0	**30.0**	4.3	**26.0**	2.3	**14.0**	2.3	**14.0**	3.0	**18.0**	4.3	**26.0**
	Terrestrial and Water Resources	**6**	5.0	**30.0**	4.0	**24.0**	2.7	**16.0**	2.0	**12.0**	4.3	**26.0**	3.7	**22.0**
	Species at Risk	**6**	3.8	**22.8**	4.8	**28.8**	2.0	**12.0**	3.8	**22.8**	6.0	**36.0**	2.4	**14.4**
	Account merit score (Σ{Rs × W})			**100.8**		**104.8**		**52.0**		**80.8**		**110.0**		**90.4**
	Account merit rating (Ra = Σ{Rs×W}/ ΣW)			**4.2**		**4.4**		**2.2**		**3.4**		**4.6**		**3.8**

Quantitative analysis for indicators related to Technical Account					Alternative-E		Alternative-G		Alternative-H		Alternative-I		Alternative-J		Alternative-O	
Account	**Sub-account**	**ID**	**Indicator**	**Indicator Weight (W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**
Technical	Design and Construction Factors	1	Storage to Dam Construction Fill Volume Ratio	**6**	**6**	**36**	**2**	**12**	**4**	**24**	**1**	**6**	**1**	**6**	**2**	**12**
		1	Total Number of Independent Water and	**6**	**4**	**24**	**4**	**24**	**5**	**30**	**6**	**36**	**6**	**36**	**4**	**24**
		1	Total Length of Water and Tailings	**6**	**3**	**18**	**1**	**6**	**5**	**30**	**1**	**6**	**3**	**18**	**5**	**30**
		1	Complexity of Seepage Collection Pumping	**6**	**6**	**36**	**1**	**6**	**5**	**30**	**4**	**24**	**6**	**36**	**1**	**6**
				Sub-account merit score (∑(SxW))		**114**		**48**		**114**		**72**		**96**		**72**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**4.75**		**2.00**		**4.75**		**3.00**		**4.00**		**3.00**
	Technical Considerations	2	Maximum TMF Dam Height	**6**	**6**	**36**	**2**	**12**	**6**	**36**	**4**	**24**	**1**	**6**	**5**	**30**
		2	Dam Monitoring and Maintenance	**6**	**6**	**36**	**2**	**12**	**5**	**30**	**3**	**18**	**1**	**6**	**4**	**24**
				Sub-account merit score (∑(SxW))		**72**		**24**		**66**		**42**		**12**		**54**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**6.00**		**2.00**		**5.50**		**3.50**		**1.00**		**4.50**

Quantitative analysis for sub-accounts related to Technical Account			Alternative-E		Alternative-G		Alternative-H		Alternative-I		Alternative-J		Alternative-O	
Account	Sub-account	Sub-Account Weight (W)	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score
Technical	Design and Construction Factors	6	4.8	28.5	2.0	12.0	4.8	28.5	3.0	18.0	4.0	24.0	3.0	18.0
	Technical Considerations	6	6.0	36.0	2.0	12.0	5.5	33.0	3.5	21.0	1.0	6.0	4.5	27.0
		Account merit score (Σ{Rs × W})		64.5		24.0		61.5		39.0		30.0		45.0
		Account merit rating (Ra = Σ{Rs×W}/ ΣW)		5.4		2.0		5.1		3.3		2.5		3.8

Quantitative analysis for indicators related to Economical Account					Alternative-E		Alternative-G		Alternative-H		Alternative-I		Alternative-J		Alternative-O	
Account	Sub-account	ID	Indicator	Indicator Weight (W)	Indicator Value (S)	Indicator Merit Score (S × W)	Indicator Value (S)	Indicator Merit Score (S × W)	Indicator Value (S)	Indicator Merit Score (S × W)	Indicator Value (S)	Indicator Merit Score (S × W)	Indicator Value (S)	Indicator Merit Score (S × W)	Indicator Value (S)	Indicator Merit Score (S × W)
Economical	Capital Costs	1	Site Preparation and Initial TMF Dam Construction Costs	6	6	36	3	18	5	30	1	6	2	12	4	24
		1	Road Construction	6	3	18	5	30	1	6	1	6	2	12	5	30
		1	Habitat Offset / Compensation Costs	6	3	18	4	24	1	6	5	30	6	36	3	18
		1	Conveyance Costs (Pipeline, Conveyor, Stacker, Trucks)	6	6	36	6	36	5	30	1	6	4	24	4	24
		1	Seepage Collection Infrastructure Costs	6	6	36	1	6	4	24	4	24	5	30	2	12
				Sub-account merit score (∑(SxW))		144		114		96		72		114		108
				Sub-account merit rating (RS=∑(SxW)/∑W)		4.80		3.80		3.20		2.40		3.80		3.60
	Operating Cost	2	Annual Tailings Operating Costs	6	5	30	6	36	4	24	1	6	4	24	4	24
		2	Water Treatment Costs	6	5	30	6	36	1	6	5	30	6	36	5	30
				Sub-account merit score (∑(SxW))		60		72		30		36		60		54
				Sub-account merit rating (RS=∑(SxW)/∑W)		5.00		6.00		2.50		3.00		5.00		4.50
	Closure Cost	3	TMF Cover and Reclamation Costs	6	3	18	4	24	1	6	3	18	5	30	3	18
		3	Road Reclamation Costs	6	3	18	6	36	1	6	1	6	2	12	5	30
		3	Water Management Infrastructure Reclamation Costs	6	1	6	3	18	6	36	2	12	4	24	2	12
		3	Inspection / Maintenance / Operations / Monitoring Costs	6	3	18	1	6	5	30	1	6	3	18	5	30
				Sub-account merit score (∑(SxW))		60		84		78		42		84		90
				Sub-account merit rating (RS=∑(SxW)/∑W)		2.5		3.5		3.3		1.8		3.5		3.8

Quantitative analysis for sub-accounts related to Economical Account			Alternative-E		Alternative-G		Alternative-H		Alternative-I		Alternative-J		Alternative-O	
Account	Sub-account	Sub-Account Weight (W)	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score
Economical	Capital Costs	6	4.8	28.8	3.8	22.8	3.2	19.2	2.4	14.4	3.8	22.8	3.6	21.6
	Operating Cost	6	5.0	30.0	6.0	36.0	2.5	15.0	3.0	18.0	5.0	30.0	4.5	27.0
	Closure Cost	6	2.5	15.0	3.5	21.0	3.3	19.5	1.8	10.5	3.5	21.0	3.8	22.5
	Account merit score (Σ{Rs × W})			73.8		79.8		53.7		42.9		73.8		71.1
	Account merit rating (Ra = Σ{Rs×W}/ ΣW)			4.1		4.4		3.0		2.4		4.1		4.0

Quantitative analysis for indicators related to Socio-Economical Account					Alternative-E		Alternative-G		Alternative-H		Alternative-I		Alternative-J		Alternative-O	
Account	Sub-account	ID	Indicator	Indicator Weight (W)	Indicator Value (S)	Indicator Merit Score (S × W)	Indicator Value (S)	Indicator Merit Score (S × W)	Indicator Value (S)	Indicator Merit Score (S × W)	Indicator Value (S)	Indicator Merit Score (S × W)	Indicator Value (S)	Indicator Merit Score (S × W)	Indicator Value (S)	Indicator Merit Score (S × W)
Socio-Economical	Indigenous Land Use	1	Wild Rice	6	6	36	6	36	6	36	6	36	6	36	6	36
		1	Moose Late Wintering Habitat	6	4	24	4	24	1	6	4	24	6	36	4	24
		1	Moose Foraging Habitat	6	5	30	6	36	1	6	6	36	6	36	2	12
		1	Loss of Indigenous Land Uses	6	6	36	4	24	1	6	1	6	6	36	4	24
				Sub-account merit score (∑(SxW))		126		120		54		102		144		96
				Sub-account merit rating (RS=∑(SxW)/∑W)		5.3		5.0		2.3		4.3		6.0		4.0
	Potential Adverse Safety and Environmental Consequences	3	Public Safety Hazard Potential (runout)	6	5	30	2	12	3	18	2	12	1	6	5	30
		3	Public Safety Dam Height	6	6	36	2	12	6	36	4	24	1	6	5	30
		3	Aesthetics	6	2	12	4	24	6	36	6	36	1	6	6	36
				Sub-account merit score (∑(SxW))		78		48		90		72		18		96
				Sub-account merit rating (RS=∑(SxW)/∑W)		4.3		2.7		5.0		4.0		1.0		5.3

Quantitative analysis for sub-accounts related to Socio-Economical Account			Alternative-E		Alternative-G		Alternative-H		Alternative-I		Alternative-J		Alternative-O	
Account	Sub-account	Sub-Account Weight (W)	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score
Socio-Economical	Indigenous Land Use	6	5.3	31.5	5.0	30.0	2.3	13.5	4.3	25.5	6.0	36.0	4.0	24.0
	Potential Adverse Safety and Environmental Consequences	6	4.3	26.0	2.7	16.0	5.0	30.0	4.0	24.0	1.0	6.0	5.3	32.0
		Account merit score (Σ{Rs × W})		57.5		46.0		43.5		49.5		42.0		56.0
		Account merit rating (Ra = Σ{Rs×W}/ ΣW)		4.8		3.8		3.6		4.1		3.5		4.7

Quantitative analysis for accounts		Alternative-E		Alternative-G		Alternative-H		Alternative-I		Alternative-J		Alternative-O	
Account	Account Weight (W)	Account Merit Rating (Ra)	Account Merit score (Ra × W)	Account Merit Rating (Ra)	Account Merit score (Ra × W)	Account Merit Rating (Ra)	Account Merit score (Ra × W)	Account Merit Rating (Ra)	Account Merit score (Ra × W)	Account Merit Rating (Ra)	Account Merit score (Ra × W)	Account Merit Rating (Ra)	Account Merit score (Ra × W)
Environmental	6	4.2	25.2	4.4	26.2	2.2	13.0	3.4	20.2	4.6	27.5	3.8	22.6
Technical	6	5.4	32.3	2.0	12.0	5.1	30.8	3.3	19.5	2.5	15.0	3.8	22.5
Economical	6	4.1	24.6	4.4	26.6	3.0	17.9	2.4	14.3	4.1	24.6	4.0	23.7
Socio-Economical	6	4.8	28.8	3.8	23.0	3.6	21.8	4.1	24.8	3.5	21.0	4.7	28.0
	Alternative merit score (Σ{Ra × W})		110.8		87.8		83.4		78.8		88.1		96.8
	Alternative merit rating (A = Σ{Ra×W}/ ΣW)		4.6		3.7		3.5		3.3		3.7		4.0

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Quantitative analysis for indicators related to Environment Account					Alternative-C		Alternative-D		Alternative-E		Alternative-F	
Account	**Sub-account**	**ID**	**Indicator**	**Indicator Weight (W)**	**Indicator Value (S)**	**Indicator Merit Score**	**Indicator Value (S)**	**Indicator Merit Score**	**Indicator Value (S)**	**Indicator Merit Score**	**Indicator Value (S)**	**Indicator Merit Score**
Environment	Fisheries Resources	2	Loss of Fish Habitat (Waterbodies)	6	1	**6**	6	**36**	6	**36**	5	**30**
		2	Loss of Fish Habitat (Watercourses)	6	3	**18**	4	**24**	6	**36**	1	**6**
		2	Number of Watercourse Crossings	6	4	**24**	5	**30**	5	**30**	6	**36**
				Sub-account merit score (∑(SxW))		**48**		**90**		**102**		**72**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**2.7**		**5.0**		**5.7**		**4.0**
	Atmospheric Emissions	3	Noise Emissions	6	5	**30**	6	**36**	1	**6**	6	**36**
		3	Greenhouse Gases (GHG) Emissions	6	2	**12**	3	**18**	1	**6**	6	**36**
				Sub-account merit score (∑(SxW))		**42**		**54**		**12**		**72**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**3.5**		**4.5**		**1.0**		**6.0**
	Terrestrial and Water Resources	4	MRS Footprint	6	4	**24**	5	**30**	1	**6**	6	**36**
		4	Number of Subcatchment Areas Affected	6	3	**18**	4	**24**	3	**18**	6	**36**
		4	Haul / Access Road Corridor Footprint	6	1	**6**	2	**12**	2	**12**	5	**30**
				Sub-account merit score (∑(SxW))		**48**		**66**		**36**		**102**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**2.7**		**3.7**		**2.0**		**5.7**
	Species at Risk	5	Direct Loss of Wolverine Habitat	6	5	**30**	5	**30**	1	**6**	6	**36**
		5	Direct Loss of Caribou Habitat	6	3	**18**	5	**30**	1	**6**	6	**36**
		5	Direct Loss of Avian SAR Habitat	6	4	**24**	5	**30**	1	**6**	6	**36**
		5	Direct Loss of Bat Foraging Habitat	6	5	**30**	5	**30**	1	**6**	6	**36**
		5	Direct Loss of Maternity Roosting Habitat	6	4	**24**	4	**24**	1	**6**	6	**36**
				Sub-account merit score (∑(SxW))		**126**		**144**		**30**		**180**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**4.2**		**4.8**		**1.0**		**6.0**

Quantitative analysis for sub-accounts related to Environment Account			Alternative-C		Alternative-D		Alternative-E		Alternative-F	
Account	**Sub-account**	**Sub-Account Weight (W)**	**Sub-account merit rating**	**Sub-account merit score**	**Sub-account merit rating**	**Sub-account merit score**	**Sub-account merit rating**	**Sub-account merit score**	**Sub-account merit rating**	**Sub-account merit score**
Environment	Fisheries Resources	**6**	2.7	**16.0**	5.0	**30.0**	5.7	**34.0**	4.0	**24.0**
	Atmospheric Emissions	**6**	3.5	**21.0**	4.5	**27.0**	1.0	**6.0**	6.0	**36.0**
	Terrestrial and Water Resources	**6**	2.7	**16.0**	3.7	**22.0**	2.0	**12.0**	5.7	**34.0**
	Species at Risk	**6**	4.2	**25.2**	4.8	**28.8**	1.0	**6.0**	6.0	**36.0**
		Account merit score (Σ{Rs × W})		**78.2**		**107.8**		**58.0**		**130.0**
		Account merit rating (Ra = Σ{Rs×W}/ ΣW)		**3.3**		**4.5**		**2.4**		**5.4**

Quantitative analysis for indicators related to Technical Account					Alternative-C		Alternative-D		Alternative-E		Alternative-F	
Account	**Sub-account**	**ID**	**Indicator**	**Indicator Weight (W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**
Technical	Design and Construction Factors	1	Haul Distance	**6**	**2**	**12**	**3**	**18**	**1**	**6**	**6**	**36**
		1	Length of Perimeter Ditching	**6**	**4**	**24**	**4**	**24**	**1**	**6**	**6**	**36**
				Sub-account merit score (∑(SxW))		**36**		**42**		**12**		**72**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**3.0**		**3.5**		**1.0**		**6.0**
	Technical Considerations	2	Stockpile Height	**6**	**2**	**12**	**4**	**24**	**6**	**36**	**1**	**6**
		2	Complexity of Facility Water Management	**6**	**4**	**24**	**2**	**12**	**1**	**6**	**6**	**36**
				Sub-account merit score (∑(SxW))		**36**		**36**		**42**		**42**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**3.0**		**3.0**		**3.5**		**3.5**

Quantitative analysis for sub-accounts related to Technical Account			Alternative-C		Alternative-D		Alternative-E		Alternative-F	
Account	**Sub-account**	**Sub-Account Weight (W)**	**Sub-account merit rating**	**Sub-account merit score**	**Sub-account merit rating**	**Sub-account merit score**	**Sub-account merit rating**	**Sub-account merit score**	**Sub-account merit rating**	**Sub-account merit score**
Technical	Design and Construction Factors	**6**	3.0	**18.0**	3.5	**21.0**	1.0	**6.0**	6.0	**36.0**
	Technical Considerations	**6**	3.0	**18.0**	3.0	**18.0**	3.5	**21.0**	3.5	**21.0**
		Account merit score (Σ{Rs × W})		**36.0**		**39.0**		**27.0**		**57.0**
		Account merit rating (Ra = Σ{Rs×W}/ ΣW)		**3.0**		**3.3**		**2.3**		**4.8**

Quantitative analysis for indicators related to Economical Account					Alternative-C		Alternative-D		Alternative-E		Alternative-F	
Account	**Sub-account**	**ID**	**Indicator**	**Indicator Weight (W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**
Economical	Capital Costs	1	Habitat Offset / Compensation Costs	**6**	**3**	**18**	**4**	**24**	**6**	**36**	**1**	**6**
		1	Haul / Access Road Construction Costs	**6**	**4**	**24**	**5**	**30**	**1**	**6**	**6**	**36**
				Sub-account merit score (∑(SxW))		**42**		**54**		**42**		**42**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**3.5**		**4.5**		**3.5**		**3.5**
	Operating Cost	2	Transportation of Mine Rock to the MRS	**6**	**2**	**12**	**3**	**18**	**5**	**30**	**6**	**36**
		2	Water Management	**6**	**2**	**12**	**2**	**12**	**1**	**6**	**6**	**36**
		2	Water Treatment Costs	**6**	**3**	**18**	**4**	**24**	**1**	**6**	**5**	**30**
				Sub-account merit score (∑(SxW))		**42**		**54**		**42**		**102**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**2.3**		**3.0**		**2.3**		**5.7**
	Closure Cost	3	MRS Cover and Reclamation Costs	**6**	**4**	**24**	**4**	**24**	**1**	**6**	**5**	**30**
		3	Inspection / Maintenance / Operations / Monitoring Costs	**6**	**4**	**24**	**5**	**30**	**1**	**6**	**6**	**36**
		3	Road Reclamation Costs	**6**	**1**	**6**	**2**	**12**	**2**	**12**	**6**	**36**
				Sub-account merit score (∑(SxW))		**54**		**66**		**24**		**102**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**3.0**		**3.7**		**1.3**		**5.7**

Quantitative analysis for sub-accounts related to Economical Account			Alternative-C		Alternative-D		Alternative-E		Alternative-F	
Account	Sub-account	Sub-Account Weight (W)	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score
Economical	Capital Costs	6	3.5	21.0	4.5	27.0	3.5	21.0	3.5	21.0
	Operating Cost	6	2.3	14.0	3.0	18.0	2.3	14.0	5.7	34.0
	Closure Cost	6	3.0	18.0	3.7	22.0	1.3	8.0	5.7	34.0
		Account merit score (Σ{Rs × W})		53.0		67.0		43.0		89.0
		Account merit rating (Ra = Σ{Rs×W}/ ΣW)		2.9		3.7		2.4		4.9

Quantitative analysis for indicators related to Socio-Economical Account					Alternative-C		Alternative-D		Alternative-E		Alternative-F	
Account	Sub-account	ID	Indicator	Indicator Weight (W)	Indicator Value (S)	Indicator Merit Score (S × W)	Indicator Value (S)	Indicator Merit Score (S × W)	Indicator Value (S)	Indicator Merit Score (S × W)	Indicator Value (S)	Indicator Merit Score (S × W)
Socio-Economical	Indigenous Land Use	1	Wild Rice	6	6	36	6	36	6	36	6	36
		1	Moose Late Wintering Habitat	6	4	24	4	24	1	6	6	36
		1	Moose Foraging Habitat	6	5	30	5	30	1	6	6	36
		1	Loss of Indigenous Land Uses	6	4	24	5	30	1	6	6	36
				Sub-account merit score (∑(SxW))		114		120		54		144
				Sub-account merit rating (RS=∑(SxW)/∑W)		4.8		5.0		2.3		6.0

Quantitative analysis for sub-accounts related to Socio-Economical Account			Alternative-C		Alternative-D		Alternative-E		Alternative-F	
Account	Sub-account	Sub-Account Weight (W)	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score
Socio-Econ	Indigenous Land Use	6	4.8	28.5	5.0	30.0	2.3	13.5	6.0	36.0
		Account merit score (Σ{Rs × W})		28.5		30.0		13.5		36.0
		Account merit rating (Ra = Σ{Rs×W}/ ΣW)		4.8		5.0		2.3		6.0

Quantitative analysis for accounts		Alternative-C		Alternative-D		Alternative-E		Alternative-F	
Account	Account Weight (W)	Account Merit Rating (Ra)	Account Merit score (Ra × W)	Account Merit Rating (Ra)	Account Merit score (Ra × W)	Account Merit Rating (Ra)	Account Merit score (Ra × W)	Account Merit Rating (Ra)	Account Merit score (Ra × W)
Environmental	6	3.3	19.6	4.5	27.0	2.4	14.5	5.4	32.5
Technical	6	3.0	18.0	3.3	19.5	2.3	13.5	4.8	28.5
Economical	6	2.9	17.7	3.7	22.3	2.4	14.3	4.9	29.7
Socio-Economical	6	4.8	28.5	5.0	30.0	2.3	13.5	6.0	36.0
	Alternative merit score (Σ{Ra × W})		83.7		98.8		55.8		126.7
	Alternative merit rating (A = Σ{Ra×W}/ ΣW)		3.5		4.1		2.3		5.3

Great Bear Project - LGO

Quantitative analysis for indicators related to Environment Account					Alternative-A		Alternative-B		Alternative-C		Alternative-D	
Account	**Sub-account**	**ID**	**Indicator**	**Indicator Weight (W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**
Environment	Fisheries Resources	2	Loss of Fish Habitat (Waterbodies)	6	6	**36**	4	**24**	6	**36**	6	**36**
		2	Loss of Fish Habitat (Watercourses)	6	6	**36**	1	**6**	6	**36**	1	**6**
		2	Number of Watercourse Crossings	6	6	**36**	6	**36**	5	**30**	6	**36**
				Sub-account merit score (∑(SxW))		**108**		**66**		**102**		**78**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**6.0**		**3.7**		**5.7**		**4.3**
	Atmospheric Emissions	3	Noise Emissions	6	2	**12**	4	**24**	1	**6**	5	**30**
		3	Greenhouse Gases (GHG) Emissions	6	1	**6**	4	**24**	2	**12**	6	**36**
				Sub-account merit score (∑(SxW))		**18**		**48**		**18**		**66**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**1.5**		**4.0**		**1.5**		**5.5**
	Terrestrial and Water Resources	4	LGO Footprint	6	3	**18**	6	**36**	2	**12**	2	**12**
		4	Compact Design	6	2	**12**	2	**12**	1	**6**	6	**36**
		4	Number of Subcatchment Areas Affected	6	3	**18**	4	**24**	6	**36**	6	**36**
		4	Haul / Access Road Corridor Footprint	6	3	**18**	5	**30**	1	**6**	5	**30**
				Sub-account merit score (∑(SxW))		**66**		**102**		**60**		**114**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**2.8**		**4.3**		**2.5**		**4.8**
	Species at Risk	5	Direct Loss of Wolverine Habitat	6	5	**30**	6	**36**	6	**36**	1	**6**
		5	Direct Loss of Caribou Habitat	6	5	**30**	6	**36**	3	**18**	1	**6**
		5	Direct Loss of Avian SAR Habitat	6	3	**18**	6	**36**	2	**12**	2	**12**
		5	Direct Loss of Bat Foraging Habitat	6	2	**12**	5	**30**	6	**36**	1	**6**
		5	Direct Loss of Maternity Roosting Habitat	6	6	**36**	6	**36**	2	**12**	2	**12**
				Sub-account merit score (∑(SxW))		**126**		**174**		**114**		**42**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**4.2**		**5.8**		**3.8**		**1.4**

Quantitative analysis for sub-accounts related to Environment Account			Alternative-A		Alternative-B		Alternative-C		Alternative-D	
Account	**Sub-account**	**Sub-Account Weight (W)**	**Sub-account merit rating**	**Sub-account merit score**	**Sub-account merit rating**	**Sub-account merit score**	**Sub-account merit rating**	**Sub-account merit score**	**Sub-account merit rating**	**Sub-account merit score**
Environment	Fisheries Resources	**6**	6.0	**36.0**	3.7	**22.0**	5.7	**34.0**	4.3	**26.0**
	Atmospheric Emissions	**6**	1.5	**9.0**	4.0	**24.0**	1.5	**9.0**	5.5	**33.0**
	Terrestrial and Water Resources	**6**	2.8	**16.5**	4.3	**25.5**	2.5	**15.0**	4.8	**28.5**
	Species at Risk	**6**	4.2	**25.2**	5.8	**34.8**	3.8	**22.8**	1.4	**8.4**
		Account merit score (Σ{Rs × W})		**86.7**		**106.3**		**80.8**		**95.9**
		Account merit rating (Ra = Σ{Rs×W}/ ΣW)		**3.6**		**4.4**		**3.4**		**4.0**

Quantitative analysis for indicators related to Technical Account					Alternative-A		Alternative-B		Alternative-C		Alternative-D	
Account	**Sub-account**	**ID**	**Indicator**	**Indicator Weight (W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**
Technical	Design and Construction Factors	1	Haul Distance	**6**	**1**	**6**	**4**	**24**	**2**	**12**	**6**	**36**
		1	Length of Perimeter Ditching	**6**	**2**	**12**	**3**	**18**	**2**	**12**	**5**	**30**
				Sub-account merit score (∑(SxW))		**18**		**42**		**24**		**66**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**1.5**		**3.5**		**2.0**		**5.5**
	Operational Considerations	3	Complexity of Facility Water Management	**6**	**5**	**30**	**1**	**6**	**5**	**30**	**6**	**36**
		3	Stockpile Height	**6**	**6**	**36**	**3**	**18**	**2**	**12**	**1**	**6**
				Sub-account merit score (∑(SxW))		**66**		**24**		**42**		**42**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**5.5**		**2.0**		**3.5**		**3.5**

Quantitative analysis for sub-accounts related to Technical Account			Alternative-A		Alternative-B		Alternative-C		Alternative-D	
Account	**Sub-account**	**Sub-Account Weight (W)**	**Sub-account merit rating**	**Sub-account merit score**	**Sub-account merit rating**	**Sub-account merit score**	**Sub-account merit rating**	**Sub-account merit score**	**Sub-account merit rating**	**Sub-account merit score**
Technical	Design and Construction Factors	**6**	1.5	**9.0**	3.5	**21.0**	2.0	**12.0**	5.5	**33.0**
	Operational Considerations	**6**	5.5	**33.0**	2.0	**12.0**	3.5	**21.0**	3.5	**21.0**
		Account merit score (Σ{Rs × W})		**42.0**		**33.0**		**33.0**		**54.0**
		Account merit rating (Ra = Σ{Rs×W}/ ΣW)		**3.5**		**2.8**		**2.8**		**4.5**

Quantitative analysis for indicators related to Economical Account					Alternative-A		Alternative-B		Alternative-C		Alternative-D	
Account	**Sub-account**	**ID**	**Indicator**	**Indicator Weight (W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**
Economical	Capital Costs	1	Habitat Offset / Compensation Costs	**6**	**6**	**36**	**1**	**6**	**6**	**36**	**1**	**6**
		1	Haul / Access Road Construction Costs	**6**	**3**	**18**	**4**	**24**	**2**	**12**	**3**	**18**
				Sub-account merit score (∑(SxW))		**54**		**30**		**48**		**24**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**4.5**		**2.5**		**4.0**		**2.0**
	Operating Cost	2	Transportation of Mine Rock to the LGO	**6**	**1**	**6**	**4**	**24**	**2**	**12**	**6**	**36**
		2	Water Management	**6**	**4**	**24**	**1**	**6**	**4**	**24**	**6**	**36**
				Sub-account merit score (∑(SxW))		**30**		**30**		**36**		**72**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**2.5**		**2.5**		**3.0**		**6.0**
	Closure Cost	3	LGO Cover and Reclamation Costs	**6**	**2**	**12**	**2**	**12**	**2**	**12**	**1**	**6**
		3	Inspection / Maintenance / Operations / Monitoring Costs	**6**	**3**	**18**	**6**	**36**	**2**	**12**	**2**	**12**
		3	Road Reclamation Costs	**6**	**3**	**18**	**6**	**36**	**1**	**6**	**6**	**36**
				Sub-account merit score (∑(SxW))		**48**		**84**		**30**		**54**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**2.7**		**4.7**		**1.7**		**3.0**

Quantitative analysis for sub-accounts related to Economical Account			Alternative-A		Alternative-B		Alternative-C		Alternative-D	
Account	Sub-account	Sub-Account Weight (W)	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score
Economical	Capital Costs	6	4.5	27.0	2.5	15.0	4.0	24.0	2.0	12.0
	Operating Cost	6	2.5	15.0	2.5	15.0	3.0	18.0	6.0	36.0
	Closure Cost	6	2.7	16.0	4.7	28.0	1.7	10.0	3.0	18.0
		Account merit score (Σ{Rs × W})		58.0		58.0		52.0		66.0
		Account merit rating (Ra = Σ{Rs×W}/ ΣW)		3.2		3.2		2.9		3.7

Quantitative analysis for indicators related to Socio-Economical Account					Alternative-A		Alternative-B		Alternative-C		Alternative-D	
Account	Sub-account	ID	Indicator	Indicator Weight (W)	Indicator Value (S)	Indicator Merit Score (S × W)	Indicator Value (S)	Indicator Merit Score (S × W)	Indicator Value (S)	Indicator Merit Score (S × W)	Indicator Value (S)	Indicator Merit Score (S × W)
Socio-Economical	Indigenous Land Use	1	Wild Rice	6	6	36	6	36	6	36	6	36
		1	Moose Late Wintering Habitat	6	3	18	6	36	2	12	2	12
		1	Moose Foraging Habitat	6	1	6	6	36	6	36	6	36
		1	Loss of Indigenous Land Uses	6	3	18	6	36	2	12	2	12
				Sub-account merit score (∑(SxW))		78		144		96		96
				Sub-account merit rating (RS=∑(SxW)/∑W)		3.3		6.0		4.0		4.0
	Operational Impact (Aesthetics)	2	Aesthetics	6	5	30	1	6	4	24	3	18
		2	Compact Design	6	2	12	2	12	1	6	6	36
				Sub-account merit score (∑(SxW))		42		18		30		54
				Sub-account merit rating (RS=∑(SxW)/∑W)		3.5		1.5		2.5		4.5

Quantitative analysis for sub-accounts related to Socio-Economical Account			Alternative-A		Alternative-B		Alternative-C		Alternative-D	
Account	Sub-account	Sub-Account Weight (W)	Sub-account merit rating (Rs)	Sub-account merit score (Rs × W)	Sub-account merit rating (Rs)	Sub-account merit score (Rs × W)	Sub-account merit rating (Rs)	Sub-account merit score (Rs × W)	Sub-account merit rating (Rs)	Sub-account merit score (Rs × W)
Socio-Economical	Indigenous Land Use	6	3.3	19.5	6.0	36.0	4.0	24.0	4.0	24.0
	Operational Impact (Aesthetics)	6	3.5	21.0	1.5	9.0	2.5	15.0	4.5	27.0
		Account merit score (Σ{Rs × W})		40.5		45.0		39.0		51.0
		Account merit rating (Ra = Σ{Rs×W}/ ΣW)		3.4		3.8		3.3		4.3

Quantitative analysis for accounts		Alternative-A		Alternative-B		Alternative-C		Alternative-D	
Account	Account Weight (W)	Account Merit Rating (Ra)	Account Merit score (Ra × W)	Account Merit Rating (Ra)	Account Merit score (Ra × W)	Account Merit Rating (Ra)	Account Merit score (Ra × W)	Account Merit Rating (Ra)	Account Merit score (Ra × W)
Environmental	6	3.6	21.7	4.4	26.6	3.4	20.2	4.0	24.0
Technical	6	3.5	21.0	2.8	16.5	2.8	16.5	4.5	27.0
Economical	6	3.2	19.3	3.2	19.3	2.9	17.3	3.7	22.0
Socio-Economical	6	3.4	20.3	3.8	22.5	3.3	19.5	4.3	25.5
	Alternative merit score (Σ{Ra × W})		82.3		84.9		73.5		98.5
	Alternative merit rating (A = Σ{Ra×W}/ ΣW)		3.4		3.5		3.1		4.1

Great Bear Project- MWP

Quantitative analysis for indicators related to Environment Account					Alternative-A		Alternative-B		Alternative-F	
Account	**Sub-account**	**ID**	**Indicator**	**Indicator Weight (W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**
Environment	Water Resources	1	Including the TMF Subcatchment	6	5	**30**	6	**36**	5	**30**
		1	Storage Capacity	6	4	**24**	2	**12**	6	**36**
				Sub-account merit score (∑(SxW))		**54**		**48**		**66**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**4.5**		**4.0**		**5.5**
	Fisheries Resources	2	Loss of Fish Habitat (Waterbodies)	6	6	**36**	1	**6**	6	**36**
		2	Loss of Fish Habitat (Watercourses)	6	5	**30**	6	**36**	1	**6**
		2	Number of Watercourse Crossings	6	6	**36**	6	**36**	4	**24**
				Sub-account merit score (∑(SxW))		**102**		**78**		**66**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**5.7**		**4.3**		**3.7**
	Atmospheric Emissions	3	Noise Emissions	6	2	**12**	5	**30**	4	**24**
		3	Greenhouse Gases (GHG) Emissions	6	6	**36**	6	**36**	6	**36**
				Sub-account merit score (∑(SxW))		**48**		**66**		**60**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**4.0**		**5.5**		**5.0**
	Terrestrial Resources	4	MWP Footprint	6	1	**6**	4	**24**	1	**6**
		4	Haul / Access Road Corridors	6	1	**6**	6	**36**	4	**24**
				Sub-account merit score (∑(SxW))		**12**		**60**		**30**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**1.0**		**5.0**		**2.5**
	Species at Risk	5	Direct Loss of Wolverine Habitat	6	1	**6**	2	**12**	6	**36**
		5	Direct Loss of Caribou Habitat	6	2	**12**	6	**36**	3	**18**
		5	Direct Loss of Avian SAR Habitat	6	2	**12**	6	**36**	1	**6**
		5	Direct Loss of Bat Foraging Habitat	6	2	**12**	1	**6**	6	**36**
		5	Direct Loss of Maternity Roosting Habitat	6	3	**18**	6	**36**	2	**12**
				Sub-account merit score (∑(SxW))		**60**		**126**		**108**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**2.0**		**4.2**		**3.6**

Quantitative analysis for sub-accounts related to Environment Account			Alternative-A		Alternative-B		Alternative-F	
Account	**Sub-account**	**Sub-Account Weight (W)**	**Sub-Account Merit Rating**	**Sub-Account Merit Score**	**Sub-Account Merit Rating**	**Sub-Account Merit Score**	**Sub-Account Merit Rating**	**Sub-Account Merit Score**
Environment	Water Resources	**6**	4.5	**27.0**	4.0	**24.0**	5.5	**33.0**
	Fisheries Resources	**6**	5.7	**34.0**	4.3	**26.0**	3.7	**22.0**
	Atmospheric Emissions	**6**	4.0	**24.0**	5.5	**33.0**	5.0	**30.0**
	Terrestrial Resources	**6**	1.0	**6.0**	5.0	**30.0**	2.5	**15.0**
	Species at Risk	**6**	2.0	**12.0**	4.2	**25.2**	3.6	**21.6**
		Account merit score (Σ{Rs × W})		**103.0**		**138.2**		**121.6**
		Account merit rating (Ra = Σ{Rs×W}/ ΣW)		**3.4**		**4.6**		**4.1**

Quantitative analysis for indicators related to Technical Account					Alternative-A		Alternative-B		Alternative-F	
Account	**Sub-account**	**ID**	**Indicator**	**Indicator Weight (W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**
Technical	Design and Construction Factors	1	Storage to Dam Construction Fill Volume Ratio	**6**	**6**	**36**	**5**	**30**	**2**	**12**
		1	Total Number of Independent Water	**6**	**1**	**6**	**6**	**36**	**4**	**24**
		1	Total Length of Water Management Dams	**6**	**4**	**24**	**6**	**36**	**1**	**6**
		1	Complexity of Seepage Collection Pumping	**6**	**1**	**6**	**6**	**36**	**3**	**18**
				Sub-account merit score (∑(SxW))		**72**		**138**		**60**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**3.0**		**5.8**		**2.5**
	Technical Considerations	2	Maximum MWP Dam Height	**6**	**5**	**30**	**6**	**36**	**1**	**6**
		2	Dam Monitoring and Maintenance	**6**	**4**	**24**	**6**	**36**	**1**	**6**
				Sub-account merit score (∑(SxW))		**54**		**72**		**12**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**4.5**		**6.0**		**1.0**

Quantitative analysis for sub-accounts related to Technical Account			Alternative-A		Alternative-B		Alternative-F	
Account	**Sub-account**	**Sub-Account Weight (W)**	**Sub-Account Merit Rating**	**Sub-Account Merit Score**	**Sub-Account Merit Rating**	**Sub-Account Merit Score**	**Sub-Account Merit Rating**	**Sub-Account Merit Score**
Technical	Design and Construction Factors	**6**	3.0	**18.0**	5.8	**34.5**	2.5	**15.0**
	Technical Considerations	**6**	4.5	**27.0**	6.0	**36.0**	1.0	**6.0**
	Account merit score (Σ{Rs × W})			**45.0**		**70.5**		**21.0**
	Account merit rating (Ra = Σ{Rs×W}/ ΣW)			**3.8**		**5.9**		**1.8**

Quantitative analysis for indicators related to Economical Account					Alternative-A		Alternative-B		Alternative-F	
Account	**Sub-account**	**ID**	**Indicator**	**Indicator Weight (W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**
Economical	Capital Costs	1	Site Preparation and Dam Construction Costs	**6**	**6**	**36**	**6**	**36**	**1**	**6**
		1	Road Construction	**6**	**5**	**30**	**6**	**36**	**5**	**30**
		1	Habitat Offset / Compensation Costs	**6**	**6**	**36**	**1**	**6**	**3**	**18**
		1	Conveyance Costs (Pipeline)	**6**	**3**	**18**	**5**	**30**	**4**	**24**
		1	Seepage Collection Infrastructure Costs	**6**	**1**	**6**	**6**	**36**	**3**	**18**
				Sub-account merit score (∑(SxW))		**126**		**144**		**96**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**4.2**		**4.8**		**3.2**
	Closure Cost	2	MWP Reclamation Costs	**6**	**3**	**18**	**4**	**24**	**3**	**18**
		2	Road Reclamation Costs	**6**	**1**	**6**	**6**	**36**	**5**	**30**
		2	Inspection / Maintenance / Operations / Monitoring Costs	**6**	**4**	**24**	**6**	**36**	**1**	**6**
				Sub-account merit score (∑(SxW))		**48**		**96**		**54**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**2.7**		**5.3**		**3.0**

Quantitative analysis for sub-accounts related to Economical Account			Alternative-A		Alternative-B		Alternative-F	
Account	Sub-account	Sub-Account Weight (W)	Sub-Account Merit Rating	Sub-Account Merit Score	Sub-Account Merit Rating	Sub-Account Merit Score	Sub-Account Merit Rating	Sub-Account Merit Score
Economical	Capital Costs	6	4.2	25.2	4.8	28.8	3.2	19.2
	Closure Cost	6	2.7	16.0	5.3	32.0	3.0	18.0
		Account merit score (Σ{Rs × W})		41.2		60.8		37.2
		Account merit rating (Ra = Σ{Rs×W}/ ΣW)		3.4		5.1		3.1

Quantitative analysis for indicators related to Socio-Economical Account					Alternative-A		Alternative-B		Alternative-F	
Account	Sub-account	ID	Indicator	Indicator Weight (W)	Indicator Value (S)	Indicator Merit Score (S × W)	Indicator Value (S)	Indicator Merit Score (S × W)	Indicator Value (S)	Indicator Merit Score (S × W)
Socio-Economical	Indigenous Land Use	1	Wild Rice	6	6	36	1	6	6	36
		1	Moose Late Wintering Habitat	6	3	18	6	36	1	6
		1	Moose Foraging Habitat	6	3	18	3	18	6	36
		1	Loss of Indigenous Land Uses	6	3	18	6	36	1	6
				Sub-account merit score (∑(SxW))		90		96		84
				Sub-account merit rating (RS=∑(SxW)/∑W)		3.8		4.0		3.5
	Potential Adverse Safety and Environmental Consequences	3	Public Safety Hazard Potential (runout)	6	5	30	6	36	2	12
		3	Public Safety Hazard Potential (dam height)	6	3	18	5	30	1	6
		3	Aesthetics	6	1	6	3	18	6	36
				Sub-account merit score (∑(SxW))		54		84		54
				Sub-account merit rating (RS=∑(SxW)/∑W)		3.0		4.7		3.0

Quantitative analysis for sub-accounts related to Socio-Economical Account			Alternative-A		Alternative-B		Alternative-F	
Account	Sub-account	Sub-Account Weight (W)	Sub-Account Merit Rating	Sub-Account Merit Score	Sub-Account Merit Rating	Sub-Account Merit Score	Sub-Account Merit Rating	Sub-Account Merit Score
Socio-Economical	Indigenous Land Use	6	3.8	22.5	4.0	24.0	3.5	21.0
	Potential Adverse Safety and Environmental Consequences	6	3.0	18.0	4.7	28.0	3.0	18.0
		Account merit score (Σ{Rs × W})		40.5		52.0		39.0
		Account merit rating (Ra = Σ{Rs×W}/ ΣW)		3.4		4.3		3.3

Quantitative analysis for accounts		Alternative-A		Alternative-B		Alternative-F	
Account	Account Weight (W)	Account Merit Rating (Ra)	Account Merit score (Ra × W)	Account Merit Rating (Ra)	Account Merit score (Ra × W)	Account Merit Rating (Ra)	Account Merit score (Ra × W)
Environmental	6	3.4	20.6	4.6	27.6	4.1	24.3
Technical	6	3.8	22.5	5.9	35.3	1.8	10.5
Economical	6	3.4	20.6	5.1	30.4	3.1	18.6
Socio-Economical	6	3.4	20.3	4.3	26.0	3.3	19.5
	Alternative merit score (Σ{Ra × W})		84.0		119.3		72.9
	Alternative merit rating (A = Σ{Ra×W}/ ΣW)		3.5		5.0		3.0

Great Bear Project - OVB

Quantitative analysis for indicators related to Environment Account					Alternative-C		Alternative-D		Alternative-E		Alternative-F	
Account	**Sub-account**	**ID**	**Indicator**	**Indicator Weight (W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**
Environment	Fisheries Resources	2	Loss of Fish Habitat (Waterbodies)	6	6	**36**	6	**36**	6	**36**	6	**36**
		2	Loss of Fish Habitat (Watercourses)	6	2	**12**	3	**18**	6	**36**	1	**6**
		2	Number of Watercourse Crossings	6	4	**24**	5	**30**	6	**36**	6	**36**
				Sub-account merit score (∑(SxW))		**72**		**84**		**108**		**78**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**4.0**		**4.7**		**6.0**		**4.3**
	Atmospheric Emissions	3	Noise Emissions	6	2	**12**	1	**6**	5	**30**	6	**36**
		3	Greenhouse Gases (GHG) Emissions	6	2	**12**	2	**12**	1	**6**	6	**36**
				Sub-account merit score (∑(SxW))		**24**		**18**		**36**		**72**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**2.0**		**1.5**		**3.0**		**6.0**
	Terrestrial and Water Resources	4	OVB Footprint	6	3	**18**	3	**18**	1	**6**	6	**36**
		4	Number of Subcatchment Areas Affected	6	3	**18**	5	**30**	5	**30**	5	**30**
		4	Haul / Access Road Corridor Footprint	6	2	**12**	1	**6**	4	**24**	6	**36**
				Sub-account merit score (∑(SxW))		**48**		**54**		**60**		**102**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**2.7**		**3.0**		**3.3**		**5.7**
	Species at Risk	5	Direct Loss of Wolverine Habitat	6	2	**12**	3	**18**	1	**6**	6	**36**
		5	Direct Loss of Caribou Habitat	6	4	**24**	5	**30**	1	**6**	6	**36**
		5	Direct Loss of Avian SAR Habitat	6	3	**18**	3	**18**	1	**6**	6	**36**
		5	Direct Loss of Bat Foraging Habitat	6	3	**18**	4	**24**	1	**6**	6	**36**
		5	Direct Loss of Maternity Roosting Habitat	6	1	**6**	3	**18**	5	**30**	5	**30**
				Sub-account merit score (∑(SxW))		**78**		**108**		**54**		**174**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**2.6**		**3.6**		**1.8**		**5.8**

Quantitative analysis for sub-accounts related to Environment Account			Alternative-C		Alternative-D		Alternative-E		Alternative-F	
Account	**Sub-account**	**Sub-Account Weight (W)**	**Sub-Account Merit Rating**	**Sub-Account Merit Score**	**Sub-Account Merit Rating**	**Sub-Account Merit Score**	**Sub-Account Merit Rating**	**Sub-Account Merit Score**	**Sub-Account Merit Rating**	**Sub-Account Merit Score**
Environment	Fisheries Resources	**6**	4.0	**24.0**	4.7	**28.0**	6.0	**36.0**	4.3	**26.0**
	Atmospheric Emissions	**6**	2.0	**12.0**	1.5	**9.0**	3.0	**18.0**	6.0	**36.0**
	Terrestrial and Water Resources	**6**	2.7	**16.0**	3.0	**18.0**	3.3	**20.0**	5.7	**34.0**
	Species at Risk	**6**	2.6	**15.6**	3.6	**21.6**	1.8	**10.8**	5.8	**34.8**
	Account merit score (Σ{Rs × W})			**67.6**		**76.6**		**84.8**		**130.8**
	Account merit rating (Ra = Σ{Rs×W}/ ΣW)			**2.8**		**3.2**		**3.5**		**5.5**

Quantitative analysis for indicators related to Technical Account					Alternative-C		Alternative-D		Alternative-E		Alternative-F	
Account	**Sub-account**	**ID**	**Indicator**	**Indicator Weight (W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**
Technical	Design and Construction Factors	1	Haul Distance	**6**	**2**	**12**	**2**	**12**	**1**	**6**	**6**	**36**
		1	Length of Perimeter Ditching	**6**	**1**	**6**	**3**	**18**	**1**	**6**	**6**	**36**
				Sub-account merit score (∑(SxW))		**18**		**30**		**12**		**72**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**1.5**		**2.5**		**1.0**		**6.0**
	Technical Considerations	2	Stockpile Height	**6**	**1**	**6**	**1**	**6**	**6**	**36**	**4**	**24**
		2	Complexity of Facility Water Management	**6**	**1**	**6**	**3**	**18**	**3**	**18**	**6**	**36**
				Sub-account merit score (∑(SxW))		**12**		**24**		**54**		**60**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**1.0**		**2.0**		**4.5**		**5.0**

Quantitative analysis for sub-accounts related to Technical Account			Alternative-C		Alternative-D		Alternative-E		Alternative-F	
Account	**Sub-account**	**Sub-Account Weight (W)**	**Sub-Account Merit Rating**	**Sub-Account Merit Score**	**Sub-Account Merit Rating**	**Sub-Account Merit Score**	**Sub-Account Merit Rating**	**Sub-Account Merit Score**	**Sub-Account Merit Rating**	**Sub-Account Merit Score**
Technical	Design and Construction Factors	**6**	1.5	**9.0**	2.5	**15.0**	1.0	**6.0**	6.0	**36.0**
	Technical Considerations	**6**	1.0	**6.0**	2.0	**12.0**	4.5	**27.0**	5.0	**30.0**
	Account merit score (Σ{Rs × W})			**15.0**		**27.0**		**33.0**		**66.0**
	Account merit rating (Ra = Σ{Rs×W}/ ΣW)			**1.3**		**2.3**		**2.8**		**5.5**

Quantitative analysis for indicators related to Economical Account					Alternative-C		Alternative-D		Alternative-E		Alternative-F	
Account	**Sub-account**	**ID**	**Indicator**	**Indicator Weight (W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**
Economical	Capital and Operational Cost Considerations	1	Habitat Offset / Compensation Costs	**6**	**4**	**24**	**5**	**30**	**6**	**36**	**1**	**6**
		1	Transportation of Mine Rock to the OVB	**6**	**2**	**12**	**2**	**12**	**1**	**6**	**6**	**36**
		1	Haul / Access Road Construction Costs	**6**	**1**	**6**	**1**	**6**	**1**	**6**	**2**	**12**
				Sub-account merit score (∑(SxW))		**42**		**48**		**48**		**54**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**2.3**		**2.7**		**2.7**		**3.0**
	Closure Cost	3	OVB Cover and Reclamation Costs	**6**	**1**	**6**	**1**	**6**	**1**	**6**	**2**	**12**
		3	Inspection / Maintenance / Operations / Monitoring Costs	**6**	**3**	**18**	**3**	**18**	**1**	**6**	**6**	**36**
		3	Road Reclamation Costs	**6**	**5**	**30**	**1**	**6**	**4**	**24**	**6**	**36**
				Sub-account merit score (∑(SxW))		**54**		**30**		**36**		**84**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**3.0**		**1.7**		**2.0**		**4.7**

Quantitative analysis for sub-accounts related to Economical Account			Alternative-C		Alternative-D		Alternative-E		Alternative-F	
Account	Sub-account	Sub-Account Weight (W)	Sub-Account Merit Rating	Sub-Account Merit Score	Sub-Account Merit Rating	Sub-Account Merit Score	Sub-Account Merit Rating	Sub-Account Merit Score	Sub-Account Merit Rating	Sub-Account Merit Score
Economical	Capital and Operational Cost Considerations	6	2.3	14.0	2.7	16.0	2.7	16.0	3.0	18.0
	Closure Cost	6	3.0	18.0	1.7	10.0	2.0	12.0	4.7	28.0
		Account merit score (Σ{Rs × W})		32.0		26.0		28.0		46.0
		Account merit rating (Ra = Σ{Rs×W}/ ΣW)		2.7		2.2		2.3		3.8

Quantitative analysis for indicators related to Socio-Economical Account					Alternative-C		Alternative-D		Alternative-E		Alternative-F	
Account	Sub-account	ID	Indicator	Indicator Weight (W)	Indicator Value (S)	Indicator Merit Score (S × W)	Indicator Value (S)	Indicator Merit Score (S × W)	Indicator Value (S)	Indicator Merit Score (S × W)	Indicator Value (S)	Indicator Merit Score (S × W)
Socio-Economical	Indigenous Land Use	1	Wild Rice	6	6	36	6	36	6	36	6	36
		1	Moose Late Wintering Habitat	6	3	18	3	18	1	6	6	36
		1	Moose Foraging Habitat	6	6	36	5	30	1	6	5	30
		1	Loss of Indigenous Land Uses	6	3	18	3	18	1	6	6	36
				Sub-account merit score (∑(SxW))		108		102		54		138
				Sub-account merit rating (RS=∑(SxW)/∑W)		4.5		4.3		2.3		5.8

Quantitative analysis for sub-accounts related to Socio-Economical Account			Alternative-C		Alternative-D		Alternative-E		Alternative-F	
Account	Sub-account	Sub-Account Weight (W)	Sub-Account Merit Rating	Sub-Account Merit Score	Sub-Account Merit Rating	Sub-Account Merit Score	Sub-Account Merit Rating	Sub-Account Merit Score	Sub-Account Merit Rating	Sub-Account Merit Score
Socio-Econ	Indigenous Land Use	6	4.5	27.0	4.3	25.5	2.3	13.5	5.8	34.5
		Account merit score (Σ{Rs × W})		27.0		25.5		13.5		34.5
		Account merit rating (Ra = Σ{Rs×W}/ ΣW)		4.5		4.3		2.3		5.8

Quantitative analysis for accounts		Alternative-C		Alternative-D		Alternative-E		Alternative-F	
Account	Account Weight (W)	Account Merit Rating (Ra)	Account Merit score (Ra × W)	Account Merit Rating (Ra)	Account Merit score (Ra × W)	Account Merit Rating (Ra)	Account Merit score (Ra × W)	Account Merit Rating (Ra)	Account Merit score (Ra × W)
Environmental	6	2.8	16.9	3.2	19.2	3.5	21.2	5.5	32.7
Technical	6	1.3	7.5	2.3	13.5	2.8	16.5	5.5	33.0
Economical	6	2.7	16.0	2.2	13.0	2.3	14.0	3.8	23.0
Socio-Economical	6	4.5	27.0	4.3	25.5	2.3	13.5	5.8	34.5
	Alternative merit score (Σ{Ra × W})		67.4		71.2		65.2		123.2
	Alternative merit rating (A = Σ{Ra×W}/ ΣW)		2.8		3.0		2.7		5.1

Great Bear Project - TMF

Quantitative analysis for indicators related to Environment Account						Alternative-E		Alternative-G		Alternative-H		Alternative-I		Alternative-J		Alternative-O	
Account	**Sub-account**	**ID**	**Indicator**	**Indicator Weight (W)**		**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**
Environment	Fisheries Resources	2	Loss of Fish Habitat (Waterbodies)	6		2	**12**	5	**30**	1	**6**	6	**36**	6	**36**	6	**36**
		2	Loss of Fish Habitat (Watercourses)	5		3	**15**	3	**15**	1	**5**	5	**25**	6	**30**	3	**15**
		2	Number of Watercourse Crossings	4		4	**16**	5	**20**	3	**12**	5	**20**	3	**12**	5	**20**
				Sub-account merit score (∑(SxW))			**43**		**65**		**23**		**81**		**78**		**71**
				Sub-account merit rating (RS=∑(SxW)/∑W)			**2.9**		**4.3**		**1.5**		**5.4**		**5.2**		**4.7**
	Atmospheric Emissions	3	Noise Emissions	1		5	**5**	5	**5**	1	**1**	2	**2**	2	**2**	6	**6**
		3	Greenhouse Gases (GHG) Emissions	1		6	**6**	3	**3**	5	**5**	1	**1**	1	**1**	3	**3**
		3	Fugitive Dust	2		4	**8**	5	**10**	1	**2**	4	**8**	6	**12**	4	**8**
				Sub-account merit score (∑(SxW))			**19**		**18**		**8**		**11**		**15**		**17**
				Sub-account merit rating (RS=∑(SxW)/∑W)			**4.8**		**4.5**		**2.0**		**2.8**		**3.8**		**4.3**
	Terrestrial and Water Resources	4	TMF Footprint	5		6	**30**	3	**15**	1	**5**	1	**5**	6	**30**	2	**10**
		4	Number of Subcatchment Areas Affected	5		6	**30**	3	**15**	6	**30**	4	**20**	5	**25**	4	**20**
		4	Haul / Access Road Corridors	2		3	**6**	6	**12**	1	**2**	1	**2**	2	**4**	5	**10**
				Sub-account merit score (∑(SxW))			**66**		**42**		**37**		**27**		**59**		**40**
				Sub-account merit rating (RS=∑(SxW)/∑W)			**5.5**		**3.5**		**3.1**		**2.3**		**4.9**		**3.3**
	Species at Risk	5	Direct Loss of Wolverine Habitat	4		1	**4**	6	**24**	2	**8**	5	**20**	6	**24**	1	**4**
		5	Direct Loss of Caribou Habitat	3		5	**15**	5	**15**	5	**15**	5	**15**	6	**18**	1	**3**
		5	Direct Loss of Avian SAR Habitat	2		6	**12**	4	**8**	1	**2**	1	**2**	6	**12**	4	**8**
		5	Direct Loss of Bat Foraging Habitat	2		3	**6**	5	**10**	1	**2**	5	**10**	6	**12**	2	**4**
		5	Direct Loss of Maternity Roosting Habitat	2		4	**8**	4	**8**	1	**2**	3	**6**	6	**12**	4	**8**
				Sub-account merit score (∑(SxW))			**45**		**65**		**29**		**53**		**78**		**27**
				Sub-account merit rating (RS=∑(SxW)/∑W)			**3.5**		**5.0**		**2.2**		**4.1**		**6.0**		**2.1**

Quantitative analysis for sub-accounts related to Environment Account			Alternative-E		Alternative-G		Alternative-H		Alternative-I		Alternative-J		Alternative-O	
Account	**Sub-account**	**Sub-Account Weight (W)**	**Sub-account merit rating**	**Sub-account merit score**	**Sub-account merit rating**	**Sub-account merit score**	**Sub-account merit rating**	**Sub-account merit score**	**Sub-account merit rating**	**Sub-account merit score**	**Sub-account merit rating**	**Sub-account merit score**	**Sub-account merit rating**	**Sub-account merit score**
Environment	Fisheries Resources	**6**	2.9	**17.2**	4.3	**26.0**	1.5	**9.2**	5.4	**32.4**	5.2	**31.2**	4.7	**28.4**
	Atmospheric Emissions	**2**	4.8	**9.5**	4.5	**9.0**	2.0	**4.0**	2.8	**5.5**	3.8	**7.5**	4.3	**8.5**
	Terrestrial and Water Resources	**3**	5.5	**16.5**	3.5	**10.5**	3.1	**9.3**	2.3	**6.8**	4.9	**14.8**	3.3	**10.0**
	Species at Risk	**6**	3.5	**20.8**	5.0	**30.0**	2.2	**13.4**	4.1	**24.5**	6.0	**36.0**	2.1	**12.5**
	Account merit score (Σ{Rs × W})			**64.0**		**75.5**		**35.8**		**69.1**		**89.5**		**59.4**
	Account merit rating (Ra = Σ{Rs×W}/ ΣW)			**3.8**		**4.4**		**2.1**		**4.1**		**5.3**		**3.5**

Quantitative analysis for indicators related to Technical Account						Alternative-E		Alternative-G		Alternative-H		Alternative-I		Alternative-J		Alternative-O	
Account	**Sub-account**	**ID**	**Indicator**	**Indicator Weight (W)**		**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**
Technical	Design and Construction Factors	1	Storage to Dam Construction Fill Volume	**5**		**6**	**30**	**2**	**10**	**4**	**20**	**1**	**5**	**1**	**5**	**2**	**10**
		1	Total Number of Independent Water and	**2**		**4**	**8**	**4**	**8**	**5**	**10**	**6**	**12**	**6**	**12**	**4**	**8**
		1	Total Length of Water and Tailings	**4**		**3**	**12**	**1**	**4**	**5**	**20**	**1**	**4**	**3**	**12**	**5**	**20**
		1	Complexity of Seepage Collection Pumping	**2**		**6**	**12**	**1**	**2**	**5**	**10**	**4**	**8**	**6**	**12**	**1**	**2**
				Sub-account merit score (∑(SxW))			**62**		**24**		**60**		**29**		**41**		**40**
				Sub-account merit rating (RS=∑(SxW)/∑W)			**4.77**		**1.85**		**4.62**		**2.23**		**3.15**		**3.08**
	Technical Considerations	2	Maximum TMF Dam Height	**6**		**6**	**36**	**2**	**12**	**6**	**36**	**4**	**24**	**1**	**6**	**5**	**30**
		2	Dam Monitoring and Maintenance	**6**		**6**	**36**	**2**	**12**	**5**	**30**	**3**	**18**	**1**	**6**	**4**	**24**
				Sub-account merit score (∑(SxW))			**72**		**24**		**66**		**42**		**12**		**54**
				Sub-account merit rating (RS=∑(SxW)/∑W)			**6.00**		**2.00**		**5.50**		**3.50**		**1.00**		**4.50**

Quantitative analysis for sub-accounts related to Technical Account			Alternative-E		Alternative-G		Alternative-H		Alternative-I		Alternative-J		Alternative-O	
Account	Sub-account	Sub-Account Weight (W)	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score
Technical	Design and Construction Factors	**6**	4.8	**28.6**	1.8	**11.1**	4.6	**27.7**	2.2	**13.4**	3.2	**18.9**	3.1	**18.5**
	Technical Considerations	**6**	6.0	**36.0**	2.0	**12.0**	5.5	**33.0**	3.5	**21.0**	1.0	**6.0**	4.5	**27.0**
	Account merit score (Σ{Rs × W})			**64.6**		**23.1**		**60.7**		**34.4**		**24.9**		**45.5**
	Account merit rating (Ra = Σ{Rs×W}/ ΣW)			**5.4**		**1.9**		**5.1**		**2.9**		**2.1**		**3.8**

Quantitative analysis for indicators related to Economical Account					Alternative-E		Alternative-G		Alternative-H		Alternative-I		Alternative-J		Alternative-O	
Account	Sub-account	ID	Indicator	Indicator Weight (W)	Indicator Value (S)	Indicator Merit Score (S × W)	Indicator Value (S)	Indicator Merit Score (S × W)	Indicator Value (S)	Indicator Merit Score (S × W)	Indicator Value (S)	Indicator Merit Score (S × W)	Indicator Value (S)	Indicator Merit Score (S × W)	Indicator Value (S)	Indicator Merit Score (S × W)
Economical	Capital Costs	1	Site Preparation and Initial TMF Dam Construction Costs	**6**	**6**	**36**	**3**	**18**	**5**	**30**	**1**	**6**	**2**	**12**	**4**	**24**
		1	Road Construction	**2**	**3**	**6**	**5**	**10**	**1**	**2**	**1**	**2**	**2**	**4**	**5**	**10**
		1	Habitat Offset / Compensation Costs	**4**	**3**	**12**	**4**	**16**	**1**	**4**	**5**	**20**	**6**	**24**	**3**	**12**
		1	Conveyance Costs (Pipeline, Conveyor, Stacker, Trucks)	**3**	**6**	**18**	**6**	**18**	**5**	**15**	**1**	**3**	**4**	**12**	**4**	**12**
		1	Seepage Collection Infrastructure Costs	**2**	**6**	**12**	**1**	**2**	**4**	**8**	**4**	**8**	**5**	**10**	**2**	**4**
				Sub-account merit score (∑(SxW))		**84**		**64**		**59**		**39**		**62**		**62**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**4.94**		**3.76**		**3.47**		**2.29**		**3.65**		**3.65**
	Operating Cost	2	Annual Tailings Operating Costs	**4**	**5**	**20**	**6**	**24**	**4**	**16**	**1**	**4**	**4**	**16**	**4**	**16**
		2	Water Treatment Costs	**4**	**5**	**20**	**6**	**24**	**1**	**4**	**5**	**20**	**6**	**24**	**5**	**20**
				Sub-account merit score (∑(SxW))		**40**		**48**		**20**		**24**		**40**		**36**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**5.00**		**6.00**		**2.50**		**3.00**		**5.00**		**4.50**
	Closure Cost	3	TMF Cover and Reclamation Costs	**5**	**3**	**15**	**4**	**20**	**1**	**5**	**3**	**15**	**5**	**25**	**3**	**15**
		3	Road Reclamation Costs	**2**	**3**	**6**	**6**	**12**	**1**	**2**	**1**	**2**	**2**	**4**	**5**	**10**
		3	Water Management Infrastructure Reclamation Costs	**4**	**1**	**4**	**3**	**12**	**6**	**24**	**2**	**8**	**4**	**16**	**2**	**8**
		3	Inspection / Maintenance / Operations / Monitoring Costs	**3**	**3**	**9**	**1**	**3**	**5**	**15**	**1**	**3**	**3**	**9**	**5**	**15**
				Sub-account merit score (∑(SxW))		**34**		**47**		**46**		**28**		**54**		**48**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**2.4**		**3.4**		**3.3**		**2.0**		**3.9**		**3.4**

Quantitative analysis for sub-accounts related to Economical Account			Alternative-E		Alternative-G		Alternative-H		Alternative-I		Alternative-J		Alternative-O	
Account	Sub-account	Sub-Account Weight (W)	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score
Economical	Capital Costs	**6**	4.9	**29.6**	3.8	**22.6**	3.5	**20.8**	2.3	**13.8**	3.6	**21.9**	3.6	**21.9**
	Operating Cost	**4**	5.0	**20.0**	6.0	**24.0**	2.5	**10.0**	3.0	**12.0**	5.0	**20.0**	4.5	**18.0**
	Closure Cost	**5**	2.4	**12.1**	3.4	**16.8**	3.3	**16.4**	2.0	**10.0**	3.9	**19.3**	3.4	**17.1**
	Account merit score (Σ{Rs × W})			**61.8**		**63.4**		**47.3**		**35.8**		**61.2**		**57.0**
	Account merit rating (Ra = Σ{Rs×W}/ ΣW)			**4.1**		**4.2**		**3.2**		**2.4**		**4.1**		**3.8**

Quantitative analysis for indicators related to Socio-Economical Account					Alternative-E		Alternative-G		Alternative-H		Alternative-I		Alternative-J		Alternative-O	
Account	Sub-account	ID	Indicator	Indicator Weight (W)	Indicator Value (S)	Indicator Merit Score (S × W)	Indicator Value (S)	Indicator Merit Score (S × W)	Indicator Value (S)	Indicator Merit Score (S × W)	Indicator Value (S)	Indicator Merit Score (S × W)	Indicator Value (S)	Indicator Merit Score (S × W)	Indicator Value (S)	Indicator Merit Score (S × W)
Socio-Economical	Indigenous Land Use	1	Wild Rice	2	6	12	6	12	6	12	6	12	6	12	6	12
		1	Moose Late Wintering Habitat	3	4	12	4	12	1	3	4	12	6	18	4	12
		1	Moose Foraging Habitat	3	5	15	6	18	1	3	6	18	6	18	2	6
		1	Loss of Indigenous Land Uses	4	6	24	4	16	1	4	1	4	6	24	4	16
				Sub-account merit score (∑(SxW))		63		58		22		46		72		46
				Sub-account merit rating (RS=∑(SxW)/∑W)		5.3		4.8		1.8		3.8		6.0		3.8
	Potential Adverse Safety and Environmental Consequences	3	Public Safety Hazard Potential (runout)	6	5	30	2	12	3	18	2	12	1	6	5	30
		3	Public Safety Dam Height	6	6	36	2	12	6	36	4	24	1	6	5	30
		3	Aesthetics	1	2	2	4	4	6	6	6	6	1	1	6	6
				Sub-account merit score (∑(SxW))		68		28		60		42		13		66
				Sub-account merit rating (RS=∑(SxW)/∑W)		5.2		2.2		4.6		3.2		1.0		5.1

Quantitative analysis for sub-accounts related to Socio-Economical Account			Alternative-E		Alternative-G		Alternative-H		Alternative-I		Alternative-J		Alternative-O	
Account	Sub-account	Sub-Account Weight (W)	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score
Socio-Economical	Indigenous Land Use	4	5.3	21.0	4.8	19.3	1.8	7.3	3.8	15.3	6.0	24.0	3.8	15.3
	Potential Adverse Safety and Environmental Consequences	6	5.2	31.4	2.2	12.9	4.6	27.7	3.2	19.4	1.0	6.0	5.1	30.5
		Account merit score (Σ{Rs × W})		52.4		32.3		35.0		34.7		30.0		45.8
		Account merit rating (Ra = Σ{Rs×W}/ ΣW)		5.2		3.2		3.5		3.5		3.0		4.6

Quantitative analysis for accounts		Alternative-E		Alternative-G		Alternative-H		Alternative-I		Alternative-J		Alternative-O	
Account	Account Weight (W)	Account Merit Rating (Ra)	Account Merit score (Ra × W)	Account Merit Rating (Ra)	Account Merit score (Ra × W)	Account Merit Rating (Ra)	Account Merit score (Ra × W)	Account Merit Rating (Ra)	Account Merit score (Ra × W)	Account Merit Rating (Ra)	Account Merit score (Ra × W)	Account Merit Rating (Ra)	Account Merit score (Ra × W)
Environmental	6	3.8	22.6	4.4	26.6	2.1	12.6	4.1	24.4	5.3	31.6	3.5	21.0
Technical	2	5.4	10.8	1.9	3.8	5.1	10.1	2.9	5.7	2.1	4.2	3.8	7.6
Economical	1	4.1	4.1	4.2	4.2	3.2	3.2	2.4	2.4	4.1	4.1	3.8	3.8
Socio-Economical	6	5.2	31.4	3.2	19.4	3.5	21.0	3.5	20.8	3.0	18.0	4.6	27.5
	Alternative merit score (Σ{Ra × W})		68.9		54.1		46.9		53.3		57.8		59.8
	Alternative merit rating (A = Σ{Ra×W}/ ΣW)		4.6		3.6		3.1		3.6		3.9		4.0

Great Bear Project - MRS

Quantitative analysis for indicators related to Environment Account					Alternative-C		Alternative-D		Alternative-E		Alternative-F	
Account	**Sub-account**	**ID**	**Indicator**	**Indicator Weight (W)**	**Indicator Value (S)**	**Indicator Merit Score**	**Indicator Value (S)**	**Indicator Merit Score**	**Indicator Value (S)**	**Indicator Merit Score**	**Indicator Value (S)**	**Indicator Merit Score**
Environment	Fisheries Resources	2	Loss of Fish Habitat (Waterbodies)	6	1	**6**	6	**36**	6	**36**	5	**30**
		2	Loss of Fish Habitat (Watercourses)	6	3	**18**	4	**24**	6	**36**	1	**6**
		2	Number of Watercourse Crossings	2	4	**8**	5	**10**	5	**10**	6	**12**
				Sub-account merit score (∑(SxW))		**32**		**70**		**82**		**48**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**2.3**		**5.0**		**5.9**		**3.4**
	Atmospheric Emissions	3	Noise Emissions	2	5	**10**	6	**12**	1	**2**	6	**12**
		3	Greenhouse Gases (GHG) Emissions	3	2	**6**	3	**9**	1	**3**	6	**18**
				Sub-account merit score (∑(SxW))		**16**		**21**		**5**		**30**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**3.2**		**4.2**		**1.0**		**6.0**
	Terrestrial and Water Resources	4	MRS Footprint	5	4	**20**	5	**25**	1	**5**	6	**30**
		4	Number of Subcatchment Areas Affected	6	3	**18**	4	**24**	3	**18**	6	**36**
		4	Haul / Access Road Corridor Footprint	2	1	**2**	2	**4**	2	**4**	5	**10**
				Sub-account merit score (∑(SxW))		**40**		**53**		**27**		**76**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**3.1**		**4.1**		**2.1**		**5.8**
	Species at Risk	5	Direct Loss of Wolverine Habitat	4	5	**20**	5	**20**	1	**4**	6	**24**
		5	Direct Loss of Caribou Habitat	3	3	**9**	5	**15**	1	**3**	6	**18**
		5	Direct Loss of Avian SAR Habitat	2	4	**8**	5	**10**	1	**2**	6	**12**
		5	Direct Loss of Bat Foraging Habitat	2	5	**10**	5	**10**	1	**2**	6	**12**
		5	Direct Loss of Maternity Roosting Habitat	2	4	**8**	4	**8**	1	**2**	6	**12**
				Sub-account merit score (∑(SxW))		**55**		**63**		**13**		**78**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**4.2**		**4.8**		**1.0**		**6.0**

Quantitative analysis for sub-accounts related to Environment Account			Alternative-C		Alternative-D		Alternative-E		Alternative-F	
Account	**Sub-account**	**Sub-Account Weight (W)**	**Sub-account merit rating**	**Sub-account merit score**	**Subaccount merit rating (Rs)**	**Sub-Account Merit Score**	**Subaccount merit rating (Rs)**	**Sub-Account Merit Score**	**Subaccount merit rating (Rs)**	**Sub-Account Merit Score**
Environment	Fisheries Resources	**6**	2.3	**13.7**	5.0	**30.0**	5.9	**35.1**	3.4	**20.6**
	Atmospheric Emissions	**3**	3.2	**9.6**	4.2	**12.6**	1.0	**3.0**	6.0	**18.0**
	Terrestrial and Water Resources	**3**	3.1	**9.2**	4.1	**12.2**	2.1	**6.2**	5.8	**17.5**
	Species at Risk	**3**	4.2	**12.7**	4.8	**14.5**	1.0	**3.0**	6.0	**18.0**
	Account merit score (Σ{Rs × W})			**45.2**		**69.4**		**47.4**		**74.1**
	Account merit rating (Ra = Σ{Rs×W}/ ΣW)			**3.0**		**4.6**		**3.2**		**4.9**

Quantitative analysis for indicators related to Technical Account					Alternative-C		Alternative-D		Alternative-E		Alternative-F	
Account	Sub-account	ID	Indicator	Indicator Weight (W)	Indicator Value (S)	Indicator Merit Score (S × W)	Indicator Value (S)	Indicator Merit Score (S × W)	Indicator Value (S)	Indicator Merit Score (S × W)	Indicator Value (S)	Indicator Merit Score (S × W)
Technical	Design and Construction Factors	1	Haul Distance	2	2	4	3	6	1	2	6	12
		1	Length of Perimeter Ditching	4	4	16	4	16	1	4	6	24
				Sub-account merit score (∑(SxW))		20		22		6		36
				Sub-account merit rating (RS=∑(SxW)/∑W)		3.3		3.7		1.0		6.0
	Technical Considerations	2	Stockpile Height	4	2	8	4	16	6	24	1	4
		2	Complexity of Facility Water Management	3	4	12	2	6	1	3	6	18
				Sub-account merit score (∑(SxW))		20		22		27		22
				Sub-account merit rating (RS=∑(SxW)/∑W)		2.9		3.1		3.9		3.1

Quantitative analysis for sub-accounts related to Technical Account			Alternative-C		Alternative-D		Alternative-E		Alternative-F	
Account	Sub-account	Sub-Account Weight (W)	Sub-account merit rating	Sub-account merit score	Subaccount merit rating (Rs)	Sub-Account Merit Score	Subaccount merit rating (Rs)	Sub-Account Merit Score	Subaccount merit rating (Rs)	Sub-Account Merit Score
Technical	Design and Construction Factors	6	3.3	20.0	3.7	22.0	1.0	6.0	6.0	36.0
	Technical Considerations	4	2.9	11.4	3.1	12.6	3.9	15.4	3.1	12.6
	Account merit score (Σ{Rs × W})			31.4		34.6		21.4		48.6
	Account merit rating (Ra = Σ{Rs×W}/ ΣW)			3.1		3.5		2.1		4.9

Quantitative analysis for indicators related to Economical Account					Alternative-C		Alternative-D		Alternative-E		Alternative-F	
Account	Sub-account	ID	Indicator	Indicator Weight (W)	Indicator Value (S)	Indicator Merit Score (S × W)	Indicator Value (S)	Indicator Merit Score (S × W)	Indicator Value (S)	Indicator Merit Score (S × W)	Indicator Value (S)	Indicator Merit Score (S × W)
Economical	Capital Costs	1	Habitat Offset / Compensation Costs	4	3	12	4	16	6	24	1	4
		1	Haul / Access Road Construction Costs	2	4	8	5	10	1	2	6	12
				Sub-account merit score (∑(SxW))		20		26		26		16
				Sub-account merit rating (RS=∑(SxW)/∑W)		3.3		4.3		4.3		2.7
	Operating Cost	2	Transportation of Mine Rock to the MRS	6	2	12	3	18	5	30	6	36
		2	Water Management	4	2	8	2	8	1	4	6	24
		2	Water Treatment Costs	4	3	12	4	16	1	4	5	20
				Sub-account merit score (∑(SxW))		32		42		38		80
				Sub-account merit rating (RS=∑(SxW)/∑W)		2.3		3.0		2.7		5.7
	Closure Cost	3	MRS Cover and Reclamation Costs	5	4	20	4	20	1	5	5	25
		3	Inspection / Maintenance / Operations / Monitoring Costs	3	4	12	5	15	1	3	6	18
		3	Road Reclamation Costs	2	1	2	2	4	2	4	6	12
				Sub-account merit score (∑(SxW))		34		39		12		55
				Sub-account merit rating (RS=∑(SxW)/∑W)		3.4		3.9		1.2		5.5

Quantitative analysis for sub-accounts related to Economical Account			Alternative-C		Alternative-D		Alternative-E		Alternative-F	
Account	Sub-account	Sub-Account Weight (W)	Sub-account merit rating	Sub-account merit score	Subaccount merit rating (Rs)	Sub-Account Merit Score	Subaccount merit rating (Rs)	Sub-Account Merit Score	Subaccount merit rating (Rs)	Sub-Account Merit Score
Economical	Capital Costs	3	3.3	10.0	4.3	13.0	4.3	13.0	2.7	8.0
	Operating Cost	6	2.3	13.7	3.0	18.0	2.7	16.3	5.7	34.3
	Closure Cost	5	3.4	17.0	3.9	19.5	1.2	6.0	5.5	27.5
		Account merit score (Σ{Rs × W})		40.7		50.5		35.3		69.8
		Account merit rating (Ra = Σ{Rs×W}/ ΣW)		2.9		3.6		2.5		5.0

Quantitative analysis for indicators related to Socio-Economical Account					Alternative-C		Alternative-D		Alternative-E		Alternative-F	
Account	Sub-account	ID	Indicator	Indicator Weight (W)	Indicator Value (S)	Indicator Merit Score (S × W)	Indicator Value (S)	Indicator Merit Score (S × W)	Indicator Value (S)	Indicator Merit Score (S × W)	Indicator Value (S)	Indicator Merit Score (S × W)
Socio-Econ	Indigenous Land Use	1	Wild Rice	2	6	12	6	12	6	12	6	12
		1	Moose Late Wintering Habitat	3	4	12	4	12	1	3	6	18
		1	Moose Foraging Habitat	3	5	15	5	15	1	3	6	18
		1	Loss of Indigenous Land Uses	4	4	16	5	20	1	4	6	24
				Sub-account merit score (∑(SxW))		55		59		22		72
				Sub-account merit rating (RS=∑(SxW)/∑W)		4.6		4.9		1.8		6.0

Quantitative analysis for sub-accounts related to Socio-Economical Account			Alternative-C		Alternative-D		Alternative-E		Alternative-F	
Account	Sub-account	Sub-Account Weight (W)	Sub-account merit rating	Sub-account merit score	Subaccount merit rating (Rs)	Sub-Account Merit Score	Subaccount merit rating (Rs)	Sub-Account Merit Score	Subaccount merit rating (Rs)	Sub-Account Merit Score
Socio-Econ	Indigenous Land Use	4	4.6	18.3	4.9	19.7	1.8	7.3	6.0	24.0
		Account merit score (Σ{Rs × W})		18.3		19.7		7.3		24.0
		Account merit rating (Ra = Σ{Rs×W}/ ΣW)		4.6		4.9		1.8		6.0

Quantitative analysis for accounts		Alternative-C		Alternative-D		Alternative-E		Alternative-F	
Account	Account Weight (W)	Account Merit Rating (Ra)	Account Merit score (Ra × W)	Account Merit Rating (Ra)	Account Merit score (Ra × W)	Account Merit Rating (Ra)	Account Merit score (Ra × W)	Account Merit Rating (Ra)	Account Merit score (Ra × W)
Environmental	6	3.0	18.1	4.6	27.7	3.2	18.9	4.9	29.6
Technical	2	3.1	6.3	3.5	6.9	2.1	4.3	4.9	9.7
Economical	1	2.9	2.9	3.6	3.6	2.5	2.5	5.0	5.0
Socio-Economical	6	4.6	27.5	4.9	29.5	1.8	11.0	6.0	36.0
	Alternative merit score (Σ{Ra × W})		54.8		67.8		36.8		80.3
	Alternative merit rating (A = Σ{Ra×W}/ ΣW)		3.7		4.5		2.5		5.4

Great Bear Project - LGO

Quantitative analysis for indicators related to Environment Account					Alternative-A		Alternative-B		Alternative-C		Alternative-D	
Account	**Sub-account**	**ID**	**Indicator**	**Indicator Weight (W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**
Environment	Fisheries Resources	2	Loss of Fish Habitat (Waterbodies)	6	6	**36**	4	**24**	6	**36**	6	**36**
		2	Loss of Fish Habitat (Watercourses)	6	6	**36**	1	**6**	6	**36**	1	**6**
		2	Number of Watercourse Crossings	2	6	**12**	6	**12**	5	**10**	6	**12**
				Sub-account merit score (∑(SxW))		**84**		**42**		**82**		**54**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**6.0**		**3.0**		**5.9**		**3.9**
	Atmospheric Emissions	3	Noise Emissions	2	2	**4**	4	**8**	1	**2**	5	**10**
		3	Greenhouse Gases (GHG) Emissions	3	1	**3**	4	**12**	2	**6**	6	**18**
				Sub-account merit score (∑(SxW))		**7**		**20**		**8**		**28**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**1.4**		**4.0**		**1.6**		**5.6**
	Terrestrial and Water Resources	4	LGO Footprint	5	3	**15**	6	**30**	2	**10**	2	**10**
		4	Compact Design	5	2	**10**	2	**10**	1	**5**	6	**30**
		4	Number of Subcatchment Areas Affected	6	3	**18**	4	**24**	6	**36**	6	**36**
		4	Haul / Access Road Corridor Footprint	5	3	**15**	5	**25**	1	**5**	5	**25**
				Sub-account merit score (∑(SxW))		**58**		**89**		**56**		**101**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**2.8**		**4.2**		**2.7**		**4.8**
	Species at Risk	5	Direct Loss of Wolverine Habitat	4	5	**20**	6	**24**	6	**24**	1	**4**
		5	Direct Loss of Caribou Habitat	3	5	**15**	6	**18**	3	**9**	1	**3**
		5	Direct Loss of Avian SAR Habitat	2	3	**6**	6	**12**	2	**4**	2	**4**
		5	Direct Loss of Bat Foraging Habitat	2	2	**4**	5	**10**	6	**12**	1	**2**
		5	Direct Loss of Maternity Roosting Habitat	2	6	**12**	6	**12**	2	**4**	2	**4**
				Sub-account merit score (∑(SxW))		**57**		**76**		**53**		**17**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**4.4**		**5.8**		**4.1**		**1.3**

Quantitative analysis for sub-accounts related to Environment Account			Alternative-A		Alternative-B		Alternative-C		Alternative-D	
Account	**Sub-account**	**Sub-Account Weight (W)**	**Sub-account merit rating**	**Sub-account merit score**	**Sub-account merit rating**	**Sub-account merit score**	**Sub-account merit rating**	**Sub-account merit score**	**Subaccount merit rating (Rs)**	**Sub-Account Merit Score**
Environment	Fisheries Resources	**6**	6.0	**36.0**	3.0	**18.0**	5.9	**35.1**	3.9	**23.1**
	Atmospheric Emissions	**3**	1.4	**4.2**	4.0	**12.0**	1.6	**4.8**	5.6	**16.8**
	Terrestrial and Water Resources	**3**	2.8	**8.3**	4.2	**12.7**	2.7	**8.0**	4.8	**14.4**
	Species at Risk	**3**	4.4	**13.2**	5.8	**17.5**	4.1	**12.2**	1.3	**3.9**
	Account merit score (Σ{Rs × W})			**61.6**		**60.3**		**60.2**		**58.3**
	Account merit rating (Ra = Σ{Rs×W}/ ΣW)			**4.1**		**4.0**		**4.0**		**3.9**

Quantitative analysis for indicators related to Technical Account					Alternative-A		Alternative-B		Alternative-C		Alternative-D	
Account	**Sub-account**	**ID**	**Indicator**	**Indicator Weight (W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**
Technical	Design and Construction Factors	1	Haul Distance	**6**	**1**	**6**	**4**	**24**	**2**	**12**	**6**	**36**
		1	Length of Perimeter Ditching	**4**	**2**	**8**	**3**	**12**	**2**	**8**	**5**	**20**
				Sub-account merit score (∑(SxW))		**14**		**36**		**20**		**56**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**1.4**		**3.6**		**2.0**		**5.6**
	Operational Considerations	3	Complexity of Facility Water Management	**3**	**5**	**15**	**1**	**3**	**5**	**15**	**6**	**18**
		3	Stockpile Height	**3**	**6**	**18**	**3**	**9**	**2**	**6**	**1**	**3**
				Sub-account merit score (∑(SxW))		**33**		**12**		**21**		**21**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**5.5**		**2.0**		**3.5**		**3.5**

Quantitative analysis for sub-accounts related to Technical Account			Alternative-A		Alternative-B		Alternative-C		Alternative-D	
Account	**Sub-account**	**Sub-Account Weight (W)**	**Sub-account merit rating**	**Sub-account merit score**	**Sub-account merit rating**	**Sub-account merit score**	**Sub-account merit rating**	**Sub-account merit score**	**Subaccount merit rating (Rs)**	**Sub-Account Merit Score**
Technical	Design and Construction Factors	**6**	1.4	**8.4**	3.6	**21.6**	2.0	**12.0**	5.6	**33.6**
	Operational Considerations	**3**	5.5	**16.5**	2.0	**6.0**	3.5	**10.5**	3.5	**10.5**
		Account merit score (Σ{Rs × W})		**24.9**		**27.6**		**22.5**		**44.1**
		Account merit rating (Ra = Σ{Rs×W}/ ΣW)		**2.8**		**3.1**		**2.5**		**4.9**

Quantitative analysis for indicators related to Economical Account					Alternative-A		Alternative-B		Alternative-C		Alternative-D	
Account	**Sub-account**	**ID**	**Indicator**	**Indicator Weight (W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**
Economical	Capital Costs	1	Habitat Offset / Compensation Costs	**4**	**6**	**24**	**1**	**4**	**6**	**24**	**1**	**4**
		1	Haul / Access Road Construction Costs	**2**	**3**	**6**	**4**	**8**	**2**	**4**	**3**	**6**
				Sub-account merit score (∑(SxW))		**30**		**12**		**28**		**10**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**5.0**		**2.0**		**4.7**		**1.7**
	Operating Cost	2	Transportation of Mine Rock to the LGO	**6**	**1**	**6**	**4**	**24**	**2**	**12**	**6**	**36**
		2	Water Management	**4**	**4**	**16**	**1**	**4**	**4**	**16**	**6**	**24**
				Sub-account merit score (∑(SxW))		**22**		**28**		**28**		**60**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**2.2**		**2.8**		**2.8**		**6.0**
	Closure Cost	3	LGO Cover and Reclamation Costs	**5**	**2**	**10**	**2**	**10**	**2**	**10**	**1**	**5**
		3	Inspection / Maintenance / Operations / Monitoring Costs	**3**	**3**	**9**	**6**	**18**	**2**	**6**	**2**	**6**
		3	Road Reclamation Costs	**2**	**3**	**6**	**6**	**12**	**1**	**2**	**6**	**12**
				Sub-account merit score (∑(SxW))		**25**		**40**		**18**		**23**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**2.5**		**4.0**		**1.8**		**2.3**

Quantitative analysis for sub-accounts related to Economical Account			Alternative-A		Alternative-B		Alternative-C		Alternative-D	
Account	Sub-account	Sub-Account Weight (W)	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score	Subaccount merit rating (Rs)	Sub-Account Merit Score
Economical	Capital Costs	3	5.0	15.0	2.0	6.0	4.7	14.0	1.7	5.0
	Operating Cost	6	2.2	13.2	2.8	16.8	2.8	16.8	6.0	36.0
	Closure Cost	5	2.5	12.5	4.0	20.0	1.8	9.0	2.3	11.5
		Account merit score (Σ{Rs × W})		40.7		42.8		39.8		52.5
		Account merit rating (Ra = Σ{Rs×W}/ ΣW)		2.9		3.1		2.8		3.8

Quantitative analysis for indicators related to Socio-Economical Account					Alternative-A		Alternative-B		Alternative-C		Alternative-D	
Account	Sub-account	ID	Indicator	Indicator Weight (W)	Indicator Value (S)	Indicator Merit Score (S × W)	Indicator Value (S)	Indicator Merit Score (S × W)	Indicator Value (S)	Indicator Merit Score (S × W)	Indicator Value (S)	Indicator Merit Score (S × W)
Socio-Economical	Indigenous Land Use	1	Wild Rice	2	6	12	6	12	6	12	6	12
		1	Moose Late Wintering Habitat	3	3	9	6	18	2	6	2	6
		1	Moose Foraging Habitat	3	1	3	6	18	6	18	6	18
		1	Loss of Indigenous Land Uses	4	3	12	6	24	2	8	2	8
				Sub-account merit score (∑(SxW))		36		72		44		44
				Sub-account merit rating (RS=∑(SxW)/∑W)		3.0		6.0		3.7		3.7
	Operational Impact (Aesthetics)	2	Aesthetics	1	5	5	1	1	4	4	3	3
		2	Compact Design	3	2	6	2	6	1	3	6	18
				Sub-account merit score (∑(SxW))		11		7		7		21
				Sub-account merit rating (RS=∑(SxW)/∑W)		2.8		1.8		1.8		5.3

Quantitative analysis for sub-accounts related to Socio-Economical Account			Alternative-A		Alternative-B		Alternative-C		Alternative-D	
Account	Sub-account	Sub-Account Weight (W)	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score	Subaccount merit rating (Rs)	Sub-Account Merit Score
Socio-Economical	Indigenous Land Use	4	3.0	12.0	6.0	24.0	3.7	14.7	3.7	14.7
	Operational Impact (Aesthetics)	1	2.8	2.8	1.8	1.8	1.8	1.8	5.3	5.3
		Account merit score (Σ{Rs × W})		14.8		25.8		16.4		19.9
		Account merit rating (Ra = Σ{Rs×W}/ ΣW)		3.0		5.2		3.3		4.0

Quantitative analysis for accounts		Alternative-A		Alternative-B		Alternative-C		Alternative-D	
Account	Account Weight (W)	Account Merit Rating (Ra)	Account Merit score (Ra × W)	Account Merit Rating (Ra)	Account Merit score (Ra × W)	Account Merit Rating (Ra)	Account Merit score (Ra × W)	Account Merit Rating (Ra)	Account Merit score (Ra × W)
Environmental	6	4.1	24.7	4.0	24.1	4.0	24.1	3.9	23.3
Technical	2	2.8	5.5	3.1	6.1	2.5	5.0	4.9	9.8
Economical	1	2.9	2.9	3.1	3.1	2.8	2.8	3.8	3.8
Socio-Economical	6	3.0	17.7	5.2	30.9	3.3	19.7	4.0	23.9
	Alternative merit score (Σ{Ra × W})		50.8		64.2		51.6		60.8
	Alternative merit rating (A = Σ{Ra×W}/ ΣW)		3.4		4.3		3.4		4.1

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Quantitative analysis for indicators related to Environment Account					Alternative-A		Alternative-B		Alternative-F	
Account	**Sub-account**	**ID**	**Indicator**	**Indicator Weight (W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**
Environment	Water Resources	1	Including the TMF Subcatchment	5	5	**25**	6	**30**	5	**25**
		1	Storage Capacity	6	4	**24**	2	**12**	6	**36**
				Sub-account merit score (∑(SxW))		**49**		**42**		**61**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**4.5**		**3.8**		**5.5**
	Fisheries Resources	2	Loss of Fish Habitat (Waterbodies)	6	6	**36**	1	**6**	6	**36**
		2	Loss of Fish Habitat (Watercourses)	5	5	**25**	6	**30**	1	**5**
		2	Number of Watercourse Crossings	2	6	**12**	6	**12**	4	**8**
				Sub-account merit score (∑(SxW))		**73**		**48**		**49**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**5.6**		**3.7**		**3.8**
	Atmospheric Emissions	3	Noise Emissions	1	2	**2**	5	**5**	4	**4**
		3	Greenhouse Gases (GHG) Emissions	1	6	**6**	6	**6**	6	**6**
				Sub-account merit score (∑(SxW))		**8**		**11**		**10**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**4.0**		**5.5**		**5.0**
	Terrestrial Resources	4	MWP Footprint	5	1	**5**	4	**20**	1	**5**
		4	Haul / Access Road Corridors	2	1	**2**	6	**12**	4	**8**
				Sub-account merit score (∑(SxW))		**7**		**32**		**13**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**1.0**		**4.6**		**1.9**
	Species at Risk	5	Direct Loss of Wolverine Habitat	4	1	**4**	2	**8**	6	**24**
		5	Direct Loss of Caribou Habitat	3	2	**6**	6	**18**	3	**9**
		5	Direct Loss of Avian SAR Habitat	2	2	**4**	6	**12**	1	**2**
		5	Direct Loss of Bat Foraging Habitat	2	2	**4**	1	**2**	6	**12**
		5	Direct Loss of Maternity Roosting Habitat	2	3	**6**	6	**12**	2	**4**
				Sub-account merit score (∑(SxW))		**24**		**52**		**51**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**1.8**		**4.0**		**3.9**

Quantitative analysis for sub-accounts related to Environment Account			Alternative-A		Alternative-B		Alternative-F	
Account	**Sub-account**	**Sub-Account Weight (W)**	**Sub-account merit rating**	**Sub-account merit score**	**Sub-account merit rating**	**Sub-account merit score**	**Sub-account merit rating**	**Sub-Account Merit Score**
Environment	Water Resources	**6**	4.5	**26.7**	3.8	**22.9**	5.5	**33.3**
	Fisheries Resources	**6**	5.6	**33.7**	3.7	**22.2**	3.8	**22.6**
	Atmospheric Emissions	**2**	4.0	**8.0**	5.5	**11.0**	5.0	**10.0**
	Terrestrial Resources	**3**	1.0	**3.0**	4.6	**13.7**	1.9	**5.6**
	Species at Risk	**3**	1.8	**5.5**	4.0	**12.0**	3.9	**11.8**
		Account merit score (Σ{Rs × W})		**77.0**		**81.8**		**83.2**
		Account merit rating (Ra = Σ{Rs×W}/ ΣW)		**3.8**		**4.1**		**4.2**

Quantitative analysis for indicators related to Technical Account					Alternative-A		Alternative-B		Alternative-F	
Account	**Sub-account**	**ID**	**Indicator**	**Indicator Weight (W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**
Technical	Design and Construction Factors	1	Storage to Dam Construction Fill Volume	**6**	**6**	**36**	**5**	**30**	**2**	**12**
		1	Total Number of Independent Water	**2**	**1**	**2**	**6**	**12**	**4**	**8**
		1	Total Length of Water Management Dams	**4**	**4**	**16**	**6**	**24**	**1**	**4**
		1	Complexity of Seepage Collection Pumping	**2**	**1**	**2**	**6**	**12**	**3**	**6**
				Sub-account merit score (∑(SxW))		**56**		**78**		**30**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**4.0**		**5.6**		**2.1**
	Technical Considerations	2	Maximum MWP Dam Height	**6**	**5**	**30**	**6**	**36**	**1**	**6**
		2	Dam Monitoring and Maintenance	**2**	**4**	**8**	**6**	**12**	**1**	**2**
				Sub-account merit score (∑(SxW))		**38**		**48**		**8**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**4.8**		**6.0**		**1.0**

Quantitative analysis for sub-accounts related to Technical Account			Alternative-A		Alternative-B		Alternative-F	
Account	**Sub-account**	**Sub-Account Weight (W)**	**Sub-account merit rating**	**Sub-account merit score**	**Sub-account merit rating**	**Sub-account merit score**	**Sub-account merit rating**	**Sub-Account Merit Score**
Technical	Design and Construction Factors	**6**	4.0	**24.0**	5.6	**33.4**	2.1	**12.9**
	Technical Considerations	**6**	4.8	**28.5**	6.0	**36.0**	1.0	**6.0**
		Account merit score (Σ{Rs × W})		**52.5**		**69.4**		**18.9**
		Account merit rating (Ra = Σ{Rs×W}/ ΣW)		**4.4**		**5.8**		**1.6**

Quantitative analysis for indicators related to Economical Account					Alternative-A		Alternative-B		Alternative-F	
Account	**Sub-account**	**ID**	**Indicator**	**Indicator Weight (W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**
Economical	Capital Costs	1	Site Preparation and Dam Construction Costs	**6**	**6**	**36**	**6**	**36**	**1**	**6**
		1	Road Construction	**2**	**5**	**10**	**6**	**12**	**5**	**10**
		1	Habitat Offset / Compensation Costs	**4**	**6**	**24**	**1**	**4**	**3**	**12**
		1	Conveyance Costs (Pipeline)	**3**	**3**	**9**	**5**	**15**	**4**	**12**
		1	Seepage Collection Infrastructure Costs	**2**	**1**	**2**	**6**	**12**	**3**	**6**
				Sub-account merit score (∑(SxW))		**81**		**79**		**46**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**4.8**		**4.6**		**2.7**
	Closure Cost	2	MWP Reclamation Costs	**3**	**3**	**9**	**4**	**12**	**3**	**9**
		2	Road Reclamation Costs	**2**	**1**	**2**	**6**	**12**	**5**	**10**
		2	Inspection / Maintenance / Operations / Monitoring Costs	**3**	**4**	**12**	**6**	**18**	**1**	**3**
				Sub-account merit score (∑(SxW))		**23**		**42**		**22**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**2.9**		**5.3**		**2.8**

Quantitative analysis for sub-accounts related to Economical Account			Alternative-A		Alternative-B		Alternative-F	
Account	Sub-account	Sub-Account Weight (W)	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score	Subaccount merit rating (Rs)	Sub-Account Merit Score
Economical	Capital Costs	6	4.8	28.6	4.6	27.9	2.7	16.2
	Closure Cost	5	2.9	14.4	5.3	26.3	2.8	13.8
		Account merit score (Σ{Rs × W})		43.0		54.1		30.0
		Account merit rating (Ra = Σ{Rs×W}/ ΣW)		3.9		4.9		2.7

Quantitative analysis for indicators related to Socio-Economical Account					Alternative-A		Alternative-B		Alternative-F	
Account	Sub-account	ID	Indicator	Indicator Weight (W)	Indicator Value (S)	Indicator Merit Score (S × W)	Indicator Value (S)	Indicator Merit Score (S × W)	Indicator Value (S)	Indicator Merit Score (S × W)
Socio-Economical	Indigenous Land Use	1	Wild Rice	2	6	12	1	2	6	12
		1	Moose Late Wintering Habitat	3	3	9	6	18	1	3
		1	Moose Foraging Habitat	3	3	9	3	9	6	18
		1	Loss of Indigenous Land Uses	4	3	12	6	24	1	4
				Sub-account merit score (∑(SxW))		42		53		37
				Sub-account merit rating (RS=∑(SxW)/∑W)		3.5		4.4		3.1
	Potential Adverse Safety and Environmental Consequences	3	Public Safety Hazard Potential (runout)	6	5	30	6	36	2	12
		3	Public Safety Hazard Potential (dam height)	6	3	18	5	30	1	6
		3	Aesthetics	1	1	1	3	3	6	6
				Sub-account merit score (∑(SxW))		49		69		24
				Sub-account merit rating (RS=∑(SxW)/∑W)		3.8		5.3		1.8

Quantitative analysis for sub-accounts related to Socio-Economical Account			Alternative-A		Alternative-B		Alternative-F	
Account	Sub-account	Sub-Account Weight (W)	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-Account Merit Score
Socio-Economical	Indigenous Land Use	4	3.5	14.0	4.4	17.7	3.1	12.3
	Potential Adverse Safety and Environmental Consequences	6	3.8	22.6	5.3	31.8	1.8	11.1
		Account merit score (Σ{Rs × W})		36.6		49.5		23.4
		Account merit rating (Ra = Σ{Rs×W}/ ΣW)		3.7		5.0		2.3

Quantitative analysis for accounts		Alternative-A		Alternative-B		Alternative-F	
Account	Account Weight (W)	Account Merit Rating (Ra)	Account Merit score (Ra × W)	Account Merit Rating (Ra)	Account Merit score (Ra × W)	Account Merit Rating (Ra)	Account Merit score (Ra × W)
Environmental	6	3.8	23.1	4.1	24.5	4.2	25.0
Technical	2	4.4	8.8	5.8	11.6	1.6	3.1
Economical	1	3.9	3.9	4.9	4.9	2.7	2.7
Socio-Economical	6	3.7	22.0	5.0	29.7	2.3	14.0
	Alternative merit score (Σ{Ra × W})		57.7		70.7		44.9
	Alternative merit rating (A = Σ{Ra×W}/ ΣW)		3.8		4.7		3.0

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Quantitative analysis for indicators related to Environment Account					Alternative-C		Alternative-D		Alternative-E		Alternative-F	
Account	**Sub-account**	**ID**	**Indicator**	**Indicator Weight (W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**
Environment	Fisheries Resources	2	Loss of Fish Habitat (Waterbodies)	6	6	**36**	6	**36**	6	**36**	6	**36**
		2	Loss of Fish Habitat (Watercourses)	6	2	**12**	3	**18**	6	**36**	1	**6**
		2	Number of Watercourse Crossings	2	4	**8**	5	**10**	6	**12**	6	**12**
				Sub-account merit score (∑(SxW))		**56**		**64**		**84**		**54**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**4.0**		**4.6**		**6.0**		**3.9**
	Atmospheric Emissions	3	Noise Emissions	2	2	**4**	1	**2**	5	**10**	6	**12**
		3	Greenhouse Gases (GHG) Emissions	3	2	**6**	2	**6**	1	**3**	6	**18**
				Sub-account merit score (∑(SxW))		**10**		**8**		**13**		**30**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**2.0**		**1.6**		**2.6**		**6.0**
	Terrestrial and Water Resources	4	OVB Footprint	5	3	**15**	3	**15**	1	**5**	6	**30**
		4	Number of Subcatchment Areas Affected	6	3	**18**	5	**30**	5	**30**	5	**30**
		4	Haul / Access Road Corridor Footprint	2	2	**4**	1	**2**	4	**8**	6	**12**
				Sub-account merit score (∑(SxW))		**37**		**47**		**43**		**72**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**2.8**		**3.6**		**3.3**		**5.5**
	Species at Risk	5	Direct Loss of Wolverine Habitat	4	2	**8**	3	**12**	1	**4**	6	**24**
		5	Direct Loss of Caribou Habitat	3	4	**12**	5	**15**	1	**3**	6	**18**
		5	Direct Loss of Avian SAR Habitat	2	3	**6**	3	**6**	1	**2**	6	**12**
		5	Direct Loss of Bat Foraging Habitat	2	3	**6**	4	**8**	1	**2**	6	**12**
		5	Direct Loss of Maternity Roosting Habitat	2	1	**2**	3	**6**	5	**10**	5	**10**
				Sub-account merit score (∑(SxW))		**34**		**47**		**21**		**76**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**2.6**		**3.6**		**1.6**		**5.8**

Quantitative analysis for sub-accounts related to Environment Account			Alternative-C		Alternative-D		Alternative-E		Alternative-F	
Account	**Sub-account**	**Sub-Account Weight (W)**	**Sub-account merit rating**	**Sub-account merit score**	**Sub-account merit rating**	**Sub-account merit score**	**Sub-account merit rating**	**Sub-account merit score**	**Sub-account merit rating**	**Sub-account merit score**
Environment	Fisheries Resources	**6**	4.0	**24.0**	4.6	**27.4**	6.0	**36.0**	3.9	**23.1**
	Atmospheric Emissions	**3**	2.0	**6.0**	1.6	**4.8**	2.6	**7.8**	6.0	**18.0**
	Terrestrial and Water Resources	**3**	2.8	**8.5**	3.6	**10.8**	3.3	**9.9**	5.5	**16.6**
	Species at Risk	**3**	2.6	**7.8**	3.6	**10.8**	1.6	**4.8**	5.8	**17.5**
		Account merit score (Σ{Rs × W})		**46.4**		**53.9**		**58.6**		**75.3**
		Account merit rating (Ra = Σ{Rs×W}/ ΣW)		**3.1**		**3.6**		**3.9**		**5.0**

Quantitative analysis for indicators related to Technical Account					Alternative-C		Alternative-D		Alternative-E		Alternative-F	
Account	**Sub-account**	**ID**	**Indicator**	**Indicator Weight (W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**
Technical	Design and Construction Factors	1	Haul Distance	**2**	**2**	**4**	**2**	**4**	**1**	**2**	**6**	**12**
		1	Length of Perimeter Ditching	**4**	**1**	**4**	**3**	**12**	**1**	**4**	**6**	**24**
				Sub-account merit score (∑(SxW))		**8**		**16**		**6**		**36**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**1.3**		**2.7**		**1.0**		**6.0**
	Technical Considerations	2	Stockpile Height	**4**	**1**	**4**	**1**	**4**	**6**	**24**	**4**	**16**
		2	Complexity of Facility Water Management	**3**	**1**	**3**	**3**	**9**	**3**	**9**	**6**	**18**
				Sub-account merit score (∑(SxW))		**7**		**13**		**33**		**34**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**1.0**		**1.9**		**4.7**		**4.9**

Quantitative analysis for sub-accounts related to Technical Account			Alternative-C		Alternative-D		Alternative-E		Alternative-F	
Account	**Sub-account**	**Sub-Account Weight (W)**	**Sub-account merit rating**	**Sub-account merit score**	**Sub-account merit rating**	**Sub-account merit score**	**Sub-account merit rating**	**Sub-account merit score**	**Sub-account merit rating**	**Sub-account merit score**
Technical	Design and Construction Factors	**6**	1.3	**8.0**	2.7	**16.0**	1.0	**6.0**	6.0	**36.0**
	Technical Considerations	**4**	1.0	**4.0**	1.9	**7.4**	4.7	**18.9**	4.9	**19.4**
		Account merit score (Σ{Rs × W})		**12.0**		**23.4**		**24.9**		**55.4**
		Account merit rating (Ra = Σ{Rs×W}/ ΣW)		**1.2**		**2.3**		**2.5**		**5.5**

Quantitative analysis for indicators related to Economical Account					Alternative-C		Alternative-D		Alternative-E		Alternative-F	
Account	**Sub-account**	**ID**	**Indicator**	**Indicator Weight (W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**
Economical	Capital and Operational Cost Considerations	1	Habitat Offset / Compensation Costs	**4**	**4**	**16**	**5**	**20**	**6**	**24**	**1**	**4**
		1	Transportation of Mine Rock to the OVB	**6**	**2**	**12**	**2**	**12**	**1**	**6**	**6**	**36**
		1	Haul / Access Road Construction Costs	**2**	**1**	**2**	**1**	**2**	**1**	**2**	**2**	**4**
				Sub-account merit score (∑(SxW))		**30**		**34**		**32**		**44**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**2.5**		**2.8**		**2.7**		**3.7**
	Closure Cost	3	OVB Cover and Reclamation Costs	**5**	**1**	**5**	**1**	**5**	**1**	**5**	**2**	**10**
		3	Inspection / Maintenance / Operations / Monitoring Costs	**3**	**3**	**9**	**3**	**9**	**1**	**3**	**6**	**18**
		3	Road Reclamation Costs	**2**	**5**	**10**	**1**	**2**	**4**	**8**	**6**	**12**
				Sub-account merit score (∑(SxW))		**24**		**16**		**16**		**40**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**2.4**		**1.6**		**1.6**		**4.0**

Quantitative analysis for sub-accounts related to Economical Account			Alternative-C		Alternative-D		Alternative-E		Alternative-F	
Account	**Sub-account**	**Sub-Account Weight (W)**	**Sub-account merit rating**	**Sub-account merit score**	**Sub-account merit rating**	**Sub-account merit score**	**Sub-account merit rating**	**Sub-account merit score**	**Sub-account merit rating**	**Sub-account merit score**
Economical	Capital and Operational Cost Considerations	**3**	2.5	**7.5**	2.8	**8.5**	2.7	**8.0**	3.7	**11.0**
	Closure Cost	**5**	2.4	**12.0**	1.6	**8.0**	1.6	**8.0**	4.0	**20.0**
		Account merit score (Σ{Rs × W})		**19.5**		**16.5**		**16.0**		**31.0**
		Account merit rating (Ra = Σ{Rs×W}/ ΣW)		**2.4**		**2.1**		**2.0**		**3.9**

Quantitative analysis for indicators related to Socio-Economical Account					Alternative-C		Alternative-D		Alternative-E		Alternative-F	
Account	**Sub-account**	**ID**	**Indicator**	**Indicator Weight (W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**
Socio-Economical	Indigenous Land Use	1	Wild Rice	**2**	**6**	**12**	**6**	**12**	**6**	**12**	**6**	**12**
		1	Moose Late Wintering Habitat	**3**	**3**	**9**	**3**	**9**	**1**	**3**	**6**	**18**
		1	Moose Foraging Habitat	**3**	**6**	**18**	**5**	**15**	**1**	**3**	**5**	**15**
		1	Loss of Indigenous Land Uses	**4**	**3**	**12**	**3**	**12**	**1**	**4**	**6**	**24**
				Sub-account merit score (∑(SxW))		**51**		**48**		**22**		**69**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**4.3**		**4.0**		**1.8**		**5.8**

Quantitative analysis for sub-accounts related to Socio-Economical Account			Alternative-C		Alternative-D		Alternative-E		Alternative-F	
Account	Sub-account	Sub-Account Weight (W)	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score
Socio-Econ	Indigenous Land Use	4	4.3	17.0	4.0	16.0	1.8	7.3	5.8	23.0
		Account merit score (Σ{Rs × W})		17.0		16.0		7.3		23.0
		Account merit rating (Ra = Σ{Rs×W}/ ΣW)		4.3		4.0		1.8		5.8

Quantitative analysis for accounts		Alternative-C		Alternative-D		Alternative-E		Alternative-F	
Account	Account Weight (W)	Account Merit Rating (Ra)	Account Merit score (Ra × W)	Account Merit Rating (Ra)	Account Merit score (Ra × W)	Account Merit Rating (Ra)	Account Merit score (Ra × W)	Account Merit Rating (Ra)	Account Merit score (Ra × W)
Environmental	6	3.1	18.6	3.6	21.6	3.9	23.4	5.0	30.1
Technical	2	1.2	2.4	2.3	4.7	2.5	5.0	5.5	11.1
Economical	1	2.4	2.4	2.1	2.1	2.0	2.0	3.9	3.9
Socio-Economical	6	4.3	25.5	4.0	24.0	1.8	11.0	5.8	34.5
	Alternative merit score (Σ{Ra × W})		48.9		52.3		41.4		79.6
	Alternative merit rating (A = Σ{Ra×W}/ ΣW)		3.3		3.5		2.8		5.3

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Quantitative analysis for indicators related to Environment Account					Alternative-E		Alternative-G		Alternative-H		Alternative-I		Alternative-J		Alternative-O	
Account	**Sub-account**	**ID**	**Indicator**	**Indicator Weight (W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**
Environment	Fisheries Resources	2	Loss of Fish Habitat (Waterbodies)	6	2	**12**	5	**30**	1	**6**	6	**36**	6	**36**	6	**36**
		2	Loss of Fish Habitat (Watercourses)	6	3	**18**	3	**18**	1	**6**	5	**30**	6	**36**	3	**18**
		2	Number of Watercourse Crossings	6	4	**24**	5	**30**	3	**18**	5	**30**	3	**18**	5	**30**
				Sub-account merit score (∑(SxW))		**54**		**78**		**30**		**96**		**90**		**84**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**3.0**		**4.3**		**1.7**		**5.3**		**5.0**		**4.7**
	Atmospheric Emissions	3	Noise Emissions	1	5	**5**	5	**5**	1	**1**	2	**2**	2	**2**	6	**6**
		3	Greenhouse Gases (GHG) Emissions	1	6	**6**	3	**3**	5	**5**	1	**1**	1	**1**	3	**3**
		3	Fugitive Dust	2	4	**8**	5	**10**	1	**2**	4	**8**	6	**12**	4	**8**
				Sub-account merit score (∑(SxW))		**19**		**18**		**8**		**11**		**15**		**17**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**4.8**		**4.5**		**2.0**		**2.8**		**3.8**		**4.3**
	Terrestrial and Water Resources	4	TMF Footprint	5	6	**30**	3	**15**	1	**5**	1	**5**	6	**30**	2	**10**
		4	Number of Subcatchment Areas Affected	6	6	**36**	3	**18**	6	**36**	4	**24**	5	**30**	4	**24**
		4	Haul / Access Road Corridors	2	3	**6**	6	**12**	1	**2**	1	**2**	2	**4**	5	**10**
				Sub-account merit score (∑(SxW))		**72**		**45**		**43**		**31**		**64**		**44**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**5.5**		**3.5**		**3.3**		**2.4**		**4.9**		**3.4**
	Species at Risk	5	Direct Loss of Wolverine Habitat	4	1	**4**	6	**24**	2	**8**	5	**20**	6	**24**	1	**4**
		5	Direct Loss of Caribou Habitat	3	5	**15**	5	**15**	5	**15**	5	**15**	6	**18**	1	**3**
		5	Direct Loss of Avian SAR Habitat	2	6	**12**	4	**8**	1	**2**	1	**2**	6	**12**	4	**8**
		5	Direct Loss of Bat Foraging Habitat	2	3	**6**	5	**10**	1	**2**	5	**10**	6	**12**	2	**4**
		5	Direct Loss of Maternity Roosting Habitat	2	4	**8**	4	**8**	1	**2**	3	**6**	6	**12**	4	**8**
				Sub-account merit score (∑(SxW))		**45**		**65**		**29**		**53**		**78**		**27**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**3.5**		**5.0**		**2.2**		**4.1**		**6.0**		**2.1**

Quantitative analysis for sub-accounts related to Environment Account			Alternative-E		Alternative-G		Alternative-H		Alternative-I		Alternative-J		Alternative-O	
Account	**Sub-account**	**Sub-Account Weight (W)**	**Sub-account merit rating**	**Sub-account merit score**	**Sub-account merit rating**	**Sub-account merit score**	**Sub-account merit rating**	**Sub-account merit score**	**Sub-account merit rating**	**Sub-account merit score**	**Sub-account merit rating**	**Sub-account merit score**	**Sub-account merit rating**	**Sub-account merit score (Rs × W)**
Environment	Fisheries Resources	**6**	3.0	**18.0**	4.3	**26.0**	1.7	**10.0**	5.3	**32.0**	5.0	**30.0**	4.7	**28.0**
	Atmospheric Emissions	**2**	4.8	**9.5**	4.5	**9.0**	2.0	**4.0**	2.8	**5.5**	3.8	**7.5**	4.3	**8.5**
	Terrestrial and Water Resources	**6**	5.5	**33.2**	3.5	**20.8**	3.3	**19.8**	2.4	**14.3**	4.9	**29.5**	3.4	**20.3**
	Species at Risk	**6**	3.5	**20.8**	5.0	**30.0**	2.2	**13.4**	4.1	**24.5**	6.0	**36.0**	2.1	**12.5**
	Account merit score (Σ{Rs × W})			**81.5**		**85.8**		**47.2**		**76.3**		**103.0**		**69.3**
	Account merit rating (Ra = Σ{Rs×W}/ ΣW)			**4.1**		**4.3**		**2.4**		**3.8**		**5.2**		**3.5**

Quantitative analysis for indicators related to Technical Account					Alternative-E		Alternative-G		Alternative-H		Alternative-I		Alternative-J		Alternative-O	
Account	**Sub-account**	**ID**	**Indicator**	**Indicator Weight (W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**
Technical	Design and Construction Factors	1	Storage to Dam Construction Fill Volume Ratio	**5**	**6**	**30**	**2**	**10**	**4**	**20**	**1**	**5**	**1**	**5**	**2**	**10**
		1	Total Number of Independent Water and	**2**	**4**	**8**	**4**	**8**	**5**	**10**	**6**	**12**	**6**	**12**	**4**	**8**
		1	Total Length of Water and Tailings	**4**	**3**	**12**	**1**	**4**	**5**	**20**	**1**	**4**	**3**	**12**	**5**	**20**
		1	Complexity of Seepage Collection Pumping	**2**	**6**	**12**	**1**	**2**	**5**	**10**	**4**	**8**	**6**	**12**	**1**	**2**
				Sub-account merit score (∑(SxW))		**62**		**24**		**60**		**29**		**41**		**40**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**4.77**		**1.85**		**4.62**		**2.23**		**3.15**		**3.08**
	Technical Considerations	2	Maximum TMF Dam Height	**6**	**6**	**36**	**2**	**12**	**6**	**36**	**4**	**24**	**1**	**6**	**5**	**30**
		2	Dam Monitoring and Maintenance	**6**	**6**	**36**	**2**	**12**	**5**	**30**	**3**	**18**	**1**	**6**	**4**	**24**
				Sub-account merit score (∑(SxW))		**72**		**24**		**66**		**42**		**12**		**54**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**6.00**		**2.00**		**5.50**		**3.50**		**1.00**		**4.50**

Quantitative analysis for sub-accounts related to Technical Account			Alternative-E		Alternative-G		Alternative-H		Alternative-I		Alternative-J		Alternative-O	
Account	Sub-account	Sub-Account Weight (W)	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score (Rs × W)
Technical	Design and Construction Factors	6	4.8	28.6	1.8	11.1	4.6	27.7	2.2	13.4	3.2	18.9	3.1	18.5
	Technical Considerations	6	6.0	36.0	2.0	12.0	5.5	33.0	3.5	21.0	1.0	6.0	4.5	27.0
	Account merit score (Σ{Rs × W})			64.6		23.1		60.7		34.4		24.9		45.5
	Account merit rating (Ra = Σ{Rs×W}/ ΣW)			5.4		1.9		5.1		2.9		2.1		3.8

Quantitative analysis for indicators related to Economical Account					Alternative-E		Alternative-G		Alternative-H		Alternative-I		Alternative-J		Alternative-O	
Account	Sub-account	ID	Indicator	Indicator Weight (W)	Indicator Value (S)	Indicator Merit Score (S × W)	Indicator Value (S)	Indicator Merit Score (S × W)	Indicator Value (S)	Indicator Merit Score (S × W)	Indicator Value (S)	Indicator Merit Score (S × W)	Indicator Value (S)	Indicator Merit Score (S × W)	Indicator Value (S)	Indicator Merit Score (S × W)
Economical	Capital Costs	1	Site Preparation and Initial TMF Dam Construction Costs	6	6	36	3	18	5	30	1	6	2	12	4	24
		1	Road Construction	2	3	6	5	10	1	2	1	2	2	4	5	10
		1	Habitat Offset / Compensation Costs	4	3	12	4	16	1	4	5	20	6	24	3	12
		1	Conveyance Costs (Pipeline, Conveyor, Stacker, Trucks)	3	6	18	6	18	5	15	1	3	4	12	4	12
		1	Seepage Collection Infrastructure Costs	2	6	12	1	2	4	8	4	8	5	10	2	4
				Sub-account merit score (∑(SxW))		84		64		59		39		62		62
				Sub-account merit rating (RS=∑(SxW)/∑W)		4.94		3.76		3.47		2.29		3.65		3.65
	Operating Cost	2	Annual Tailings Operating Costs	4	5	20	6	24	4	16	1	4	4	16	4	16
		2	Water Treatment Costs	4	5	20	6	24	1	4	5	20	6	24	5	20
				Sub-account merit score (∑(SxW))		40		48		20		24		40		36
				Sub-account merit rating (RS=∑(SxW)/∑W)		5.00		6.00		2.50		3.00		5.00		4.50
	Closure Cost	3	TMF Cover and Reclamation Costs	5	3	15	4	20	1	5	3	15	5	25	3	15
		3	Road Reclamation Costs	2	3	6	6	12	1	2	1	2	2	4	5	10
		3	Water Management Infrastructure Reclamation Costs	4	1	4	3	12	6	24	2	8	4	16	2	8
		3	Inspection / Maintenance / Operations / Monitoring Costs	3	3	9	1	3	5	15	1	3	3	9	5	15
				Sub-account merit score (∑(SxW))		34		47		46		28		54		48
				Sub-account merit rating (RS=∑(SxW)/∑W)		2.4		3.4		3.3		2.0		3.9		3.4

Quantitative analysis for sub-accounts related to Economical Account			Alternative-E		Alternative-G		Alternative-H		Alternative-I		Alternative-J		Alternative-O	
Account	Sub-account	Sub-Account Weight (W)	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score (Rs × W)
Economical	Capital Costs	6	4.9	29.6	3.8	22.6	3.5	20.8	2.3	13.8	3.6	21.9	3.6	21.9
	Operating Cost	4	5.0	20.0	6.0	24.0	2.5	10.0	3.0	12.0	5.0	20.0	4.5	18.0
	Closure Cost	5	2.4	12.1	3.4	16.8	3.3	16.4	2.0	10.0	3.9	19.3	3.4	17.1
	Account merit score (Σ{Rs × W})			61.8		63.4		47.3		35.8		61.2		57.0
	Account merit rating (Ra = Σ{Rs×W}/ ΣW)			4.1		4.2		3.2		2.4		4.1		3.8

Quantitative analysis for indicators related to Socio-Economical Account					Alternative-E		Alternative-G		Alternative-H		Alternative-I		Alternative-J		Alternative-O	
Account	Sub-account	ID	Indicator	Indicator Weight (W)	Indicator Value (S)	Indicator Merit Score (S × W)	Indicator Value (S)	Indicator Merit Score (S × W)	Indicator Value (S)	Indicator Merit Score (S × W)	Indicator Value (S)	Indicator Merit Score (S × W)	Indicator Value (S)	Indicator Merit Score (S × W)	Indicator Value (S)	Indicator Merit Score (S × W)
Socio-Economical	Indigenous Land Use	1	Wild Rice	2	6	12	6	12	6	12	6	12	6	12	6	12
		1	Moose Late Wintering Habitat	3	4	12	4	12	1	3	4	12	6	18	4	12
		1	Moose Foraging Habitat	3	5	15	6	18	1	3	6	18	6	18	2	6
		1	Loss of Indigenous Land Uses	4	6	24	4	16	1	4	1	4	6	24	4	16
				Sub-account merit score (∑(SxW))		63		58		22		46		72		46
				Sub-account merit rating (RS=∑(SxW)/∑W)		5.3		4.8		1.8		3.8		6.0		3.8
	Potential Adverse Safety and Environmental Consequences	3	Public Safety Hazard Potential (runout)	6	5	30	2	12	3	18	2	12	1	6	5	30
		3	Public Safety Dam Height	6	6	36	2	12	6	36	4	24	1	6	5	30
		3	Aesthetics	1	2	2	4	4	6	6	6	6	1	1	6	6
				Sub-account merit score (∑(SxW))		68		28		60		42		13		66
				Sub-account merit rating (RS=∑(SxW)/∑W)		5.2		2.2		4.6		3.2		1.0		5.1

Quantitative analysis for sub-accounts related to Socio-Economical Account			Alternative-E		Alternative-G		Alternative-H		Alternative-I		Alternative-J		Alternative-O	
Account	Sub-account	Sub-Account Weight (W)	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score (Rs × W)
Socio-Economical	Indigenous Land Use	4	5.3	21.0	4.8	19.3	1.8	7.3	3.8	15.3	6.0	24.0	3.8	15.3
	Potential Adverse Safety and Environmental Consequences	6	5.2	31.4	2.2	12.9	4.6	27.7	3.2	19.4	1.0	6.0	5.1	30.5
	Account merit score (Σ{Rs × W})			52.4		32.3		35.0		34.7		30.0		45.8
	Account merit rating (Ra = Σ{Rs×W}/ ΣW)			5.2		3.2		3.5		3.5		3.0		4.6

Quantitative analysis for accounts		Alternative-E		Alternative-G		Alternative-H		Alternative-I		Alternative-J		Alternative-O	
Account	Account Weight (W)	Account Merit Rating (Ra)	Account Merit score (Ra × W)	Account Merit Rating (Ra)	Account Merit score (Ra × W)	Account Merit Rating (Ra)	Account Merit score (Ra × W)	Account Merit Rating (Ra)	Account Merit score (Ra × W)	Account Merit Rating (Ra)	Account Merit score (Ra × W)	Account Merit Rating (Ra)	Account Merit score (Ra × W)
Environmental	6	4.1	24.5	4.3	25.7	2.4	14.2	3.8	22.9	5.2	30.9	3.5	20.8
Technical	3	5.4	16.2	1.9	5.8	5.1	15.2	2.9	8.6	2.1	6.2	3.8	11.4
Economical	1.5	4.1	6.2	4.2	6.3	3.2	4.7	2.4	3.6	4.1	6.1	3.8	5.7
Socio-Economical	3	5.2	15.7	3.2	9.7	3.5	10.5	3.5	10.4	3.0	9.0	4.6	13.7
Alternative merit score (Σ{Ra × W})			62.5		47.5		44.6		45.5		52.3		51.6
Alternative merit rating (A = Σ{Ra×W}/ ΣW)			4.6		3.5		3.3		3.4		3.9		3.8

Great Bear Project - MRS

Quantitative analysis for indicators related to Environment Account					Alternative-C		Alternative-D		Alternative-E		Alternative-F	
Account	**Sub-account**	**ID**	**Indicator**	**Indicator Weight (W)**	**Indicator Value (S)**	**Indicator Merit Score**	**Indicator Value (S)**	**Indicator Merit Score**	**Indicator Value (S)**	**Indicator Merit Score**	**Indicator Value (S)**	**Indicator Merit Score**
Environment	Fisheries Resources	2	Loss of Fish Habitat (Waterbodies)	6	1	**6**	6	**36**	6	**36**	5	**30**
		2	Loss of Fish Habitat (Watercourses)	6	3	**18**	4	**24**	6	**36**	1	**6**
		2	Number of Watercourse Crossings	6	4	**24**	5	**30**	5	**30**	6	**36**
				Sub-account merit score (∑(SxW))		**48**		**90**		**102**		**72**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**2.7**		**5.0**		**5.7**		**4.0**
	Atmospheric Emissions	3	Noise Emissions	2	5	**10**	6	**12**	1	**2**	6	**12**
		3	Greenhouse Gases (GHG) Emissions	3	2	**6**	3	**9**	1	**3**	6	**18**
				Sub-account merit score (∑(SxW))		**16**		**21**		**5**		**30**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**3.2**		**4.2**		**1.0**		**6.0**
	Terrestrial and Water Resources	4	MRS Footprint	5	4	**20**	5	**25**	1	**5**	6	**30**
		4	Number of Subcatchment Areas Affected	6	3	**18**	4	**24**	3	**18**	6	**36**
		4	Haul / Access Road Corridor Footprint	2	1	**2**	2	**4**	2	**4**	5	**10**
				Sub-account merit score (∑(SxW))		**40**		**53**		**27**		**76**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**3.1**		**4.1**		**2.1**		**5.8**
	Species at Risk	5	Direct Loss of Wolverine Habitat	4	5	**20**	5	**20**	1	**4**	6	**24**
		5	Direct Loss of Caribou Habitat	3	3	**9**	5	**15**	1	**3**	6	**18**
		5	Direct Loss of Avian SAR Habitat	2	4	**8**	5	**10**	1	**2**	6	**12**
		5	Direct Loss of Bat Foraging Habitat	2	5	**10**	5	**10**	1	**2**	6	**12**
		5	Direct Loss of Maternity Roosting Habitat	2	4	**8**	4	**8**	1	**2**	6	**12**
				Sub-account merit score (∑(SxW))		**55**		**63**		**13**		**78**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**4.2**		**4.8**		**1.0**		**6.0**

Quantitative analysis for sub-accounts related to Environment Account			Alternative-C		Alternative-D		Alternative-E		Alternative-F	
Account	**Sub-account**	**Sub-Account Weight (W)**	**Sub-account merit rating**	**Sub-account merit score**	**Sub-account merit rating**	**Sub-account merit score**	**Sub-account merit rating**	**Sub-account merit score**	**Sub-account merit rating**	**Sub-account merit score**
Environment	Fisheries Resources	**6**	2.7	**16.0**	5.0	**30.0**	5.7	**34.0**	4.0	**24.0**
	Atmospheric Emissions	**3**	3.2	**9.6**	4.2	**12.6**	1.0	**3.0**	6.0	**18.0**
	Terrestrial and Water Resources	**6**	3.1	**18.5**	4.1	**24.5**	2.1	**12.5**	5.8	**35.1**
	Species at Risk	**3**	4.2	**12.7**	4.8	**14.5**	1.0	**3.0**	6.0	**18.0**
		Account merit score (Σ{Rs × W})		**56.8**		**81.6**		**52.5**		**95.1**
		Account merit rating (Ra = Σ{Rs×W}/ ΣW)		**3.2**		**4.5**		**2.9**		**5.3**

Quantitative analysis for indicators related to Technical Account					Alternative-C		Alternative-D		Alternative-E		Alternative-F	
Account	**Sub-account**	**ID**	**Indicator**	**Indicator Weight (W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**
Technical	Design and Construction Factors	1	Haul Distance	**2**	**2**	**4**	**3**	**6**	**1**	**2**	**6**	**12**
		1	Length of Perimeter Ditching	**4**	**4**	**16**	**4**	**16**	**1**	**4**	**6**	**24**
				Sub-account merit score (∑(SxW))		**20**		**22**		**6**		**36**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**3.3**		**3.7**		**1.0**		**6.0**
	Technical Considerations	2	Stockpile Height	**4**	**2**	**8**	**4**	**16**	**6**	**24**	**1**	**4**
		2	Complexity of Facility Water Management	**3**	**4**	**12**	**2**	**6**	**1**	**3**	**6**	**18**
				Sub-account merit score (∑(SxW))		**20**		**22**		**27**		**22**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**2.9**		**3.1**		**3.9**		**3.1**

Quantitative analysis for sub-accounts related to Technical Account			Alternative-C		Alternative-D		Alternative-E		Alternative-F	
Account	**Sub-account**	**Sub-Account Weight (W)**	**Sub-account merit rating**	**Sub-account merit score**	**Sub-account merit rating**	**Sub-account merit score**	**Sub-account merit rating**	**Sub-account merit score**	**Sub-account merit rating**	**Sub-account merit score**
Technical	Design and Construction Factors	**6**	3.3	**20.0**	3.7	**22.0**	1.0	**6.0**	6.0	**36.0**
	Technical Considerations	**4**	2.9	**11.4**	3.1	**12.6**	3.9	**15.4**	3.1	**12.6**
	Account merit score (Σ{Rs × W})			**31.4**		**34.6**		**21.4**		**48.6**
	Account merit rating (Ra = Σ{Rs×W}/ ΣW)			**3.1**		**3.5**		**2.1**		**4.9**

Quantitative analysis for indicators related to Economical Account					Alternative-C		Alternative-D		Alternative-E		Alternative-F	
Account	**Sub-account**	**ID**	**Indicator**	**Indicator Weight (W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**
Economical	Capital Costs	1	Habitat Offset / Compensation Costs	**4**	**3**	**12**	**4**	**16**	**6**	**24**	**1**	**4**
		1	Haul / Access Road Construction Costs	**2**	**4**	**8**	**5**	**10**	**1**	**2**	**6**	**12**
				Sub-account merit score (∑(SxW))		**20**		**26**		**26**		**16**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**3.3**		**4.3**		**4.3**		**2.7**
	Operating Cost	2	Transportation of Mine Rock to the MRS	**6**	**2**	**12**	**3**	**18**	**5**	**30**	**6**	**36**
		2	Water Management	**4**	**2**	**8**	**2**	**8**	**1**	**4**	**6**	**24**
		2	Water Treatment Costs	**4**	**3**	**12**	**4**	**16**	**1**	**4**	**5**	**20**
				Sub-account merit score (∑(SxW))		**32**		**42**		**38**		**80**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**2.3**		**3.0**		**2.7**		**5.7**
	Closure Cost	3	MRS Cover and Reclamation Costs	**5**	**4**	**20**	**4**	**20**	**1**	**5**	**5**	**25**
		3	Inspection / Maintenance / Operations / Monitoring Costs	**3**	**4**	**12**	**5**	**15**	**1**	**3**	**6**	**18**
		3	Road Reclamation Costs	**2**	**1**	**2**	**2**	**4**	**2**	**4**	**6**	**12**
				Sub-account merit score (∑(SxW))		**34**		**39**		**12**		**55**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**3.4**		**3.9**		**1.2**		**5.5**

Quantitative analysis for sub-accounts related to Economical Account			Alternative-C		Alternative-D		Alternative-E		Alternative-F	
Account	Sub-account	Sub-Account Weight (W)	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score
Economical	Capital Costs	3	3.3	10.0	4.3	13.0	4.3	13.0	2.7	8.0
	Operating Cost	6	2.3	13.7	3.0	18.0	2.7	16.3	5.7	34.3
	Closure Cost	5	3.4	17.0	3.9	19.5	1.2	6.0	5.5	27.5
		Account merit score (Σ{Rs × W})		40.7		50.5		35.3		69.8
		Account merit rating (Ra = Σ{Rs×W}/ ΣW)		2.9		3.6		2.5		5.0

Quantitative analysis for indicators related to Socio-Economical Account						Alternative-C		Alternative-D		Alternative-E		Alternative-F	
Account	Sub-account	ID	Indicator	Indicator Weight (W)		Indicator Value (S)	Indicator Merit Score (S × W)	Indicator Value (S)	Indicator Merit Score (S × W)	Indicator Value (S)	Indicator Merit Score (S × W)	Indicator Value (S)	Indicator Merit Score (S × W)
Socio-Economical	Indigenous Land Use	1	Wild Rice	2		6	12	6	12	6	12	6	12
		1	Moose Late Wintering Habitat	3		4	12	4	12	1	3	6	18
		1	Moose Foraging Habitat	3		5	15	5	15	1	3	6	18
		1	Loss of Indigenous Land Uses	4		4	16	5	20	1	4	6	24
				Sub-account merit score (∑(SxW))			55		59		22		72
				Sub-account merit rating (RS=∑(SxW)/∑W)			4.6		4.9		1.8		6.0

Quantitative analysis for sub-accounts related to Socio-Economical Account			Alternative-C		Alternative-D		Alternative-E		Alternative-F	
Account	Sub-account	Sub-Account Weight (W)	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score
Socio-Econ	Indigenous Land Use	4	4.6	18.3	4.9	19.7	1.8	7.3	6.0	24.0
		Account merit score (Σ{Rs × W})		18.3		19.7		7.3		24.0
		Account merit rating (Ra = Σ{Rs×W}/ ΣW)		4.6		4.9		1.8		6.0

Quantitative analysis for accounts		Alternative-C		Alternative-D		Alternative-E		Alternative-F	
Account	Account Weight (W)	Account Merit Rating (Ra)	Account Merit score (Ra × W)	Account Merit Rating (Ra)	Account Merit score (Ra × W)	Account Merit Rating (Ra)	Account Merit score (Ra × W)	Account Merit Rating (Ra)	Account Merit score (Ra × W)
Environmental	6	3.2	18.9	4.5	27.2	2.9	17.5	5.3	31.7
Technical	3	3.1	9.4	3.5	10.4	2.1	6.4	4.9	14.6
Economical	1.5	2.9	4.4	3.6	5.4	2.5	3.8	5.0	7.5
Socio-Economical	3	4.6	13.8	4.9	14.8	1.8	5.5	6.0	18.0
	Alternative merit score (Σ{Ra × W})		46.5		57.7		33.2		71.7
	Alternative merit rating (A = Σ{Ra×W}/ ΣW)		3.4		4.3		2.5		5.3

Great Bear Project - LGO

Quantitative analysis for indicators related to Environment Account					Alternative-A		Alternative-B		Alternative-C		Alternative-D	
Account	**Sub-account**	**ID**	**Indicator**	**Indicator Weight (W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**
Environment	Fisheries Resources	2	Loss of Fish Habitat (Waterbodies)	6	6	**36**	4	**24**	6	**36**	6	**36**
		2	Loss of Fish Habitat (Watercourses)	6	6	**36**	1	**6**	6	**36**	1	**6**
		2	Number of Watercourse Crossings	6	6	**36**	6	**36**	5	**30**	6	**36**
				Sub-account merit score (∑(SxW))		**108**		**66**		**102**		**78**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**6.0**		**3.7**		**5.7**		**4.3**
	Atmospheric Emissions	3	Noise Emissions	2	2	**4**	4	**8**	1	**2**	5	**10**
		3	Greenhouse Gases (GHG) Emissions	3	1	**3**	4	**12**	2	**6**	6	**18**
				Sub-account merit score (∑(SxW))		**7**		**20**		**8**		**28**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**1.4**		**4.0**		**1.6**		**5.6**
	Terrestrial and Water Resources	4	LGO Footprint	5	3	**15**	6	**30**	2	**10**	2	**10**
		4	Compact Design	5	2	**10**	2	**10**	1	**5**	6	**30**
		4	Number of Subcatchment Areas Affected	6	3	**18**	4	**24**	6	**36**	6	**36**
		4	Haul / Access Road Corridor Footprint	5	3	**15**	5	**25**	1	**5**	5	**25**
				Sub-account merit score (∑(SxW))		**58**		**89**		**56**		**101**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**2.8**		**4.2**		**2.7**		**4.8**
	Species at Risk	5	Direct Loss of Wolverine Habitat	4	5	**20**	6	**24**	6	**24**	1	**4**
		5	Direct Loss of Caribou Habitat	3	5	**15**	6	**18**	3	**9**	1	**3**
		5	Direct Loss of Avian SAR Habitat	2	3	**6**	6	**12**	2	**4**	2	**4**
		5	Direct Loss of Bat Foraging Habitat	2	2	**4**	5	**10**	6	**12**	1	**2**
		5	Direct Loss of Maternity Roosting Habitat	2	6	**12**	6	**12**	2	**4**	2	**4**
				Sub-account merit score (∑(SxW))		**57**		**76**		**53**		**17**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**4.4**		**5.8**		**4.1**		**1.3**

Quantitative analysis for sub-accounts related to Environment Account			Alternative-A		Alternative-B		Alternative-C		Alternative-D	
Account	**Sub-account**	**Sub-Account Weight (W)**	**Sub-account merit rating**	**Sub-account merit score**	**Sub-account merit rating**	**Sub-account merit score**	**Sub-account merit rating**	**Sub-account merit score**	**Sub-account merit rating**	**Sub-account merit score**
Environment	Fisheries Resources	**6**	6.0	**36.0**	3.7	**22.0**	5.7	**34.0**	4.3	**26.0**
	Atmospheric Emissions	**3**	1.4	**4.2**	4.0	**12.0**	1.6	**4.8**	5.6	**16.8**
	Terrestrial and Water Resources	**6**	2.8	**16.6**	4.2	**25.4**	2.7	**16.0**	4.8	**28.9**
	Species at Risk	**3**	4.4	**13.2**	5.8	**17.5**	4.1	**12.2**	1.3	**3.9**
	Account merit score (Σ{Rs × W})			**69.9**		**77.0**		**67.0**		**75.6**
	Account merit rating (Ra = Σ{Rs×W}/ ΣW)			**3.9**		**4.3**		**3.7**		**4.2**

Quantitative analysis for indicators related to Technical Account					Alternative-A		Alternative-B		Alternative-C		Alternative-D	
Account	**Sub-account**	**ID**	**Indicator**	**Indicator Weight (W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**
Technical	Design and Construction Factors	1	Haul Distance	**6**	**1**	**6**	**4**	**24**	**2**	**12**	**6**	**36**
		1	Length of Perimeter Ditching	**4**	**2**	**8**	**3**	**12**	**2**	**8**	**5**	**20**
				Sub-account merit score (∑(SxW))		**14**		**36**		**20**		**56**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**1.4**		**3.6**		**2.0**		**5.6**
	Operational Considerations	3	Complexity of Facility Water Management	**3**	**5**	**15**	**1**	**3**	**5**	**15**	**6**	**18**
		3	Stockpile Height	**3**	**6**	**18**	**3**	**9**	**2**	**6**	**1**	**3**
				Sub-account merit score (∑(SxW))		**33**		**12**		**21**		**21**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**5.5**		**2.0**		**3.5**		**3.5**

Quantitative analysis for sub-accounts related to Technical Account			Alternative-A		Alternative-B		Alternative-C		Alternative-D	
Account	**Sub-account**	**Sub-Account Weight (W)**	**Sub-account merit rating**	**Sub-account merit score**	**Sub-account merit rating**	**Sub-account merit score**	**Sub-account merit rating**	**Sub-account merit score**	**Sub-account merit rating**	**Sub-account merit score**
Technical	Design and Construction Factors	**6**	1.4	**8.4**	3.6	**21.6**	2.0	**12.0**	5.6	**33.6**
	Operational Considerations	**3**	5.5	**16.5**	2.0	**6.0**	3.5	**10.5**	3.5	**10.5**
		Account merit score (Σ{Rs × W})		**24.9**		**27.6**		**22.5**		**44.1**
		Account merit rating (Ra = Σ{Rs×W}/ ΣW)		**2.8**		**3.1**		**2.5**		**4.9**

Quantitative analysis for indicators related to Economical Account					Alternative-A		Alternative-B		Alternative-C		Alternative-D	
Account	**Sub-account**	**ID**	**Indicator**	**Indicator Weight (W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**
Economical	Capital Costs	1	Habitat Offset / Compensation Costs	**4**	**6**	**24**	**1**	**4**	**6**	**24**	**1**	**4**
		1	Haul / Access Road Construction Costs	**2**	**3**	**6**	**4**	**8**	**2**	**4**	**3**	**6**
				Sub-account merit score (∑(SxW))		**30**		**12**		**28**		**10**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**5.0**		**2.0**		**4.7**		**1.7**
	Operating Cost	2	Transportation of Mine Rock to the LGO	**6**	**1**	**6**	**4**	**24**	**2**	**12**	**6**	**36**
		2	Water Management	**4**	**4**	**16**	**1**	**4**	**4**	**16**	**6**	**24**
				Sub-account merit score (∑(SxW))		**22**		**28**		**28**		**60**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**2.2**		**2.8**		**2.8**		**6.0**
	Closure Cost	3	LGO Cover and Reclamation Costs	**5**	**2**	**10**	**2**	**10**	**2**	**10**	**1**	**5**
		3	Inspection / Maintenance / Operations / Monitoring Costs	**3**	**3**	**9**	**6**	**18**	**2**	**6**	**2**	**6**
		3	Road Reclamation Costs	**2**	**3**	**6**	**6**	**12**	**1**	**2**	**6**	**12**
				Sub-account merit score (∑(SxW))		**25**		**40**		**18**		**23**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**2.5**		**4.0**		**1.8**		**2.3**

Quantitative analysis for sub-accounts related to Economical Account			Alternative-A		Alternative-B		Alternative-C		Alternative-D	
Account	Sub-account	Sub-Account Weight (W)	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score
Economical	Capital Costs	3	5.0	15.0	2.0	6.0	4.7	14.0	1.7	5.0
	Operating Cost	6	2.2	13.2	2.8	16.8	2.8	16.8	6.0	36.0
	Closure Cost	5	2.5	12.5	4.0	20.0	1.8	9.0	2.3	11.5
		Account merit score (Σ{Rs × W})		40.7		42.8		39.8		52.5
		Account merit rating (Ra = Σ{Rs×W}/ ΣW)		2.9		3.1		2.8		3.8

Quantitative analysis for indicators related to Socio-Economical Account					Alternative-A		Alternative-B		Alternative-C		Alternative-D	
Account	Sub-account	ID	Indicator	Indicator Weight (W)	Indicator Value (S)	Indicator Merit Score (S × W)	Indicator Value (S)	Indicator Merit Score (S × W)	Indicator Value (S)	Indicator Merit Score (S × W)	Indicator Value (S)	Indicator Merit Score (S × W)
Socio-Economical	Indigenous Land Use	1	Wild Rice	2	6	12	6	12	6	12	6	12
		1	Moose Late Wintering Habitat	3	3	9	6	18	2	6	2	6
		1	Moose Foraging Habitat	3	1	3	6	18	6	18	6	18
		1	Loss of Indigenous Land Uses	4	3	12	6	24	2	8	2	8
				Sub-account merit score (∑(SxW))		36		72		44		44
				Sub-account merit rating (RS=∑(SxW)/∑W)		3.0		6.0		3.7		3.7
	Operational Impact (Aesthetics)	2	Aesthetics	1	5	5	1	1	4	4	3	3
		2	Compact Design	3	2	6	2	6	1	3	6	18
				Sub-account merit score (∑(SxW))		11		7		7		21
				Sub-account merit rating (RS=∑(SxW)/∑W)		2.8		1.8		1.8		5.3

Quantitative analysis for sub-accounts related to Socio-Economical Account			Alternative-A		Alternative-B		Alternative-C		Alternative-D	
Account	Sub-account	Sub-Account Weight (W)	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score
Socio-Economical	Indigenous Land Use	4	3.0	12.0	6.0	24.0	3.7	14.7	3.7	14.7
	Operational Impact (Aesthetics)	1	2.8	2.8	1.8	1.8	1.8	1.8	5.3	5.3
		Account merit score (Σ{Rs × W})		14.8		25.8		16.4		19.9
		Account merit rating (Ra = Σ{Rs×W}/ ΣW)		3.0		5.2		3.3		4.0

Quantitative analysis for accounts		Alternative-A		Alternative-B		Alternative-C		Alternative-D	
Account	Account Weight (W)	Account Merit Rating (Ra)	Account Merit score (Ra × W)	Account Merit Rating (Ra)	Account Merit score (Ra × W)	Account Merit Rating (Ra)	Account Merit score (Ra × W)	Account Merit Rating (Ra)	Account Merit score (Ra × W)
Environmental	6	3.9	23.3	4.3	25.7	3.7	22.3	4.2	25.2
Technical	3	2.8	8.3	3.1	9.2	2.5	7.5	4.9	14.7
Economical	1.5	2.9	4.4	3.1	4.6	2.8	4.3	3.8	5.6
Socio-Economical	3	3.0	8.9	5.2	15.5	3.3	9.9	4.0	12.0
	Alternative merit score (Σ{Ra × W})		44.8		54.9		44.0		57.5
	Alternative merit rating (A = Σ{Ra×W}/ ΣW)		3.3		4.1		3.3		4.3

Great Bear Project - MWP

Quantitative analysis for indicators related to Environment Account					Alternative-A		Alternative-B		Alternative-F	
Account	**Sub-account**	**ID**	**Indicator**	**Indicator Weight (W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**
Environment	Water Resources	1	Including the TMF Subcatchment	6	5	**30**	6	**36**	5	**30**
		1	Storage Capacity	6	4	**24**	2	**12**	6	**36**
				Sub-account merit score (∑(SxW))		**54**		**48**		**66**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**4.5**		**4.0**		**5.5**
	Fisheries Resources	2	Loss of Fish Habitat (Waterbodies)	6	6	**36**	1	**6**	6	**36**
		2	Loss of Fish Habitat (Watercourses)	6	5	**30**	6	**36**	1	**6**
		2	Number of Watercourse Crossings	6	6	**36**	6	**36**	4	**24**
				Sub-account merit score (∑(SxW))		**102**		**78**		**66**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**5.7**		**4.3**		**3.7**
	Atmospheric Emissions	3	Noise Emissions	1	2	**2**	5	**5**	4	**4**
		3	Greenhouse Gases (GHG) Emissions	1	6	**6**	6	**6**	6	**6**
				Sub-account merit score (∑(SxW))		**8**		**11**		**10**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**4.0**		**5.5**		**5.0**
	Terrestrial Resources	4	MWP Footprint	5	1	**5**	4	**20**	1	**5**
		4	Haul / Access Road Corridors	2	1	**2**	6	**12**	4	**8**
				Sub-account merit score (∑(SxW))		**7**		**32**		**13**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**1.0**		**4.6**		**1.9**
	Species at Risk	5	Direct Loss of Wolverine Habitat	4	1	**4**	2	**8**	6	**24**
		5	Direct Loss of Caribou Habitat	3	2	**6**	6	**18**	3	**9**
		5	Direct Loss of Avian SAR Habitat	2	2	**4**	6	**12**	1	**2**
		5	Direct Loss of Bat Foraging Habitat	2	2	**4**	1	**2**	6	**12**
		5	Direct Loss of Maternity Roosting Habitat	2	3	**6**	6	**12**	2	**4**
				Sub-account merit score (∑(SxW))		**24**		**52**		**51**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**1.8**		**4.0**		**3.9**

Quantitative analysis for sub-accounts related to Environment Account			Alternative-A		Alternative-B		Alternative-F	
Account	**Sub-account**	**Sub-Account Weight (W)**	**Sub-account merit rating**	**Sub-account merit score**	**Sub-account merit rating**	**Sub-account merit score**	**Sub-account merit rating**	**Sub-account merit score**
Environment	Water Resources	**6**	4.5	**27.0**	4.0	**24.0**	5.5	**33.0**
	Fisheries Resources	**6**	5.7	**34.0**	4.3	**26.0**	3.7	**22.0**
	Atmospheric Emissions	**2**	4.0	**8.0**	5.5	**11.0**	5.0	**10.0**
	Terrestrial Resources	**3**	1.0	**3.0**	4.6	**13.7**	1.9	**5.6**
	Species at Risk	**3**	1.8	**5.5**	4.0	**12.0**	3.9	**11.8**
		Account merit score (Σ{Rs × W})		**77.5**		**86.7**		**82.3**
		Account merit rating (Ra = Σ{Rs×W}/ ΣW)		**3.9**		**4.3**		**4.1**

Quantitative analysis for indicators related to Technical Account					Alternative-A		Alternative-B		Alternative-F	
Account	**Sub-account**	**ID**	**Indicator**	**Indicator Weight (W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**
Technical	Design and Construction Factors	1	Storage to Dam Construction Fill Volume	**6**	**6**	**36**	**5**	**30**	**2**	**12**
		1	Total Number of Independent Water	**2**	**1**	**2**	**6**	**12**	**4**	**8**
		1	Total Length of Water Management Dams	**4**	**4**	**16**	**6**	**24**	**1**	**4**
		1	Complexity of Seepage Collection Pumping	**2**	**1**	**2**	**6**	**12**	**3**	**6**
				Sub-account merit score (∑(SxW))		**56**		**78**		**30**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**4.0**		**5.6**		**2.1**
	Technical Considerations	2	Maximum MWP Dam Height	**6**	**5**	**30**	**6**	**36**	**1**	**6**
		2	Dam Monitoring and Maintenance	**2**	**4**	**8**	**6**	**12**	**1**	**2**
				Sub-account merit score (∑(SxW))		**38**		**48**		**8**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**4.8**		**6.0**		**1.0**

Quantitative analysis for sub-accounts related to Technical Account			Alternative-A		Alternative-B		Alternative-F	
Account	**Sub-account**	**Sub-Account Weight (W)**	**Sub-account merit rating**	**Sub-account merit score**	**Sub-account merit rating**	**Sub-account merit score**	**Sub-account merit rating**	**Sub-account merit score**
Technical	Design and Construction Factors	**6**	4.0	**24.0**	5.6	**33.4**	2.1	**12.9**
	Technical Considerations	**6**	4.8	**28.5**	6.0	**36.0**	1.0	**6.0**
		Account merit score (Σ{Rs × W})		**52.5**		**69.4**		**18.9**
		Account merit rating (Ra = Σ{Rs×W}/ ΣW)		**4.4**		**5.8**		**1.6**

Quantitative analysis for indicators related to Economical Account					Alternative-A		Alternative-B		Alternative-F	
Account	**Sub-account**	**ID**	**Indicator**	**Indicator Weight (W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**
Economical	Capital Costs	1	Site Preparation and Dam Construction Costs	**6**	**6**	**36**	**6**	**36**	**1**	**6**
		1	Road Construction	**2**	**5**	**10**	**6**	**12**	**5**	**10**
		1	Habitat Offset / Compensation Costs	**4**	**6**	**24**	**1**	**4**	**3**	**12**
		1	Conveyance Costs (Pipeline)	**3**	**3**	**9**	**5**	**15**	**4**	**12**
		1	Seepage Collection Infrastructure Costs	**2**	**1**	**2**	**6**	**12**	**3**	**6**
				Sub-account merit score (∑(SxW))		**81**		**79**		**46**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**4.8**		**4.6**		**2.7**
	Closure Cost	2	MWP Reclamation Costs	**3**	**3**	**9**	**4**	**12**	**3**	**9**
		2	Road Reclamation Costs	**2**	**1**	**2**	**6**	**12**	**5**	**10**
		2	Inspection / Maintenance / Operations / Monitoring Costs	**3**	**4**	**12**	**6**	**18**	**1**	**3**
				Sub-account merit score (∑(SxW))		**23**		**42**		**22**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**2.9**		**5.3**		**2.8**

Quantitative analysis for sub-accounts related to Economical Account			Alternative-A		Alternative-B		Alternative-F	
Account	Sub-account	Sub-Account Weight (W)	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score
Economical	Capital Costs	6	4.8	28.6	4.6	27.9	2.7	16.2
	Closure Cost	5	2.9	14.4	5.3	26.3	2.8	13.8
		Account merit score (Σ{Rs × W})		43.0		54.1		30.0
		Account merit rating (Ra = Σ{Rs×W}/ ΣW)		3.9		4.9		2.7

Quantitative analysis for indicators related to Socio-Economical Account					Alternative-A		Alternative-B		Alternative-F	
Account	Sub-account	ID	Indicator	Indicator Weight (W)	Indicator Value (S)	Indicator Merit Score (S × W)	Indicator Value (S)	Indicator Merit Score (S × W)	Indicator Value (S)	Indicator Merit Score (S × W)
Socio-Economical	Indigenous Land Use	1	Wild Rice	2	6	12	1	2	6	12
		1	Moose Late Wintering Habitat	3	3	9	6	18	1	3
		1	Moose Foraging Habitat	3	3	9	3	9	6	18
		1	Loss of Indigenous Land Uses	4	3	12	6	24	1	4
				Sub-account merit score (∑(SxW))		42		53		37
				Sub-account merit rating (RS=∑(SxW)/∑W)		3.5		4.4		3.1
	Potential Adverse Safety and Environmental Consequences	3	Public Safety Hazard Potential (runout)	6	5	30	6	36	2	12
		3	Public Safety Hazard Potential (dam height)	6	3	18	5	30	1	6
		3	Aesthetics	1	1	1	3	3	6	6
				Sub-account merit score (∑(SxW))		49		69		24
				Sub-account merit rating (RS=∑(SxW)/∑W)		3.8		5.3		1.8

Quantitative analysis for sub-accounts related to Socio-Economical Account			Alternative-A		Alternative-B		Alternative-F	
Account	Sub-account	Sub-Account Weight (W)	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score
Socio-Economical	Indigenous Land Use	4	3.5	14.0	4.4	17.7	3.1	12.3
	Potential Adverse Safety and Environmental Consequences	6	3.8	22.6	5.3	31.8	1.8	11.1
		Account merit score (Σ{Rs × W})		36.6		49.5		23.4
		Account merit rating (Ra = Σ{Rs×W}/ ΣW)		3.7		5.0		2.3

Quantitative analysis for accounts		Alternative-A		Alternative-B		Alternative-F	
Account	Account Weight (W)	Account Merit Rating (Ra)	Account Merit score (Ra × W)	Account Merit Rating (Ra)	Account Merit score (Ra × W)	Account Merit Rating (Ra)	Account Merit score (Ra × W)
Environmental	6	3.9	23.3	4.3	26.0	4.1	24.7
Technical	3	4.4	13.1	5.8	17.4	1.6	4.7
Economical	1.5	3.9	5.9	4.9	7.4	2.7	4.1
Socio-Economical	3	3.7	11.0	5.0	14.9	2.3	7.0
	Alternative merit score (Σ{Ra × W})		53.2		65.6		40.5
	Alternative merit rating (A = Σ{Ra×W}/ ΣW)		3.9		4.9		3.0

Great Bear Project - OVB

Quantitative analysis for indicators related to Environment Account					Alternative-C		Alternative-D		Alternative-E		Alternative-F	
Account	**Sub-account**	**ID**	**Indicator**	**Indicator Weight (W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**
Environment	Fisheries Resources	2	Loss of Fish Habitat (Waterbodies)	6	6	**36**	6	**36**	6	**36**	6	**36**
		2	Loss of Fish Habitat (Watercourses)	6	2	**12**	3	**18**	6	**36**	1	**6**
		2	Number of Watercourse Crossings	6	4	**24**	5	**30**	6	**36**	6	**36**
				Sub-account merit score (∑(SxW))		**72**		**84**		**108**		**78**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**4.0**		**4.7**		**6.0**		**4.3**
	Atmospheric Emissions	3	Noise Emissions	2	2	**4**	1	**2**	5	**10**	6	**12**
		3	Greenhouse Gases (GHG) Emissions	3	2	**6**	2	**6**	1	**3**	6	**18**
				Sub-account merit score (∑(SxW))		**10**		**8**		**13**		**30**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**2.0**		**1.6**		**2.6**		**6.0**
	Terrestrial and Water Resources	4	OVB Footprint	5	3	**15**	3	**15**	1	**5**	6	**30**
		4	Number of Subcatchment Areas Affected	6	3	**18**	5	**30**	5	**30**	5	**30**
		4	Haul / Access Road Corridor Footprint	2	2	**4**	1	**2**	4	**8**	6	**12**
				Sub-account merit score (∑(SxW))		**37**		**47**		**43**		**72**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**2.8**		**3.6**		**3.3**		**5.5**
	Species at Risk	5	Direct Loss of Wolverine Habitat	4	2	**8**	3	**12**	1	**4**	6	**24**
		5	Direct Loss of Caribou Habitat	3	4	**12**	5	**15**	1	**3**	6	**18**
		5	Direct Loss of Avian SAR Habitat	2	3	**6**	3	**6**	1	**2**	6	**12**
		5	Direct Loss of Bat Foraging Habitat	2	3	**6**	4	**8**	1	**2**	6	**12**
		5	Direct Loss of Maternity Roosting Habitat	2	1	**2**	3	**6**	5	**10**	5	**10**
				Sub-account merit score (∑(SxW))		**34**		**47**		**21**		**76**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**2.6**		**3.6**		**1.6**		**5.8**

Quantitative analysis for sub-accounts related to Environment Account			Alternative-C		Alternative-D		Alternative-E		Alternative-F	
Account	**Sub-account**	**Sub-Account Weight (W)**	**Sub-account merit rating**	**Sub-account merit score**	**Sub-account merit rating**	**Sub-account merit score**	**Sub-account merit rating**	**Sub-account merit score**	**Sub-account merit rating**	**Sub-account merit score**
Environment	Fisheries Resources	**6**	4.0	**24.0**	4.7	**28.0**	6.0	**36.0**	4.3	**26.0**
	Atmospheric Emissions	**3**	2.0	**6.0**	1.6	**4.8**	2.6	**7.8**	6.0	**18.0**
	Terrestrial and Water Resources	**6**	2.8	**17.1**	3.6	**21.7**	3.3	**19.8**	5.5	**33.2**
	Species at Risk	**3**	2.6	**7.8**	3.6	**10.8**	1.6	**4.8**	5.8	**17.5**
		Account merit score (Σ{Rs × W})		**54.9**		**65.3**		**68.5**		**94.8**
		Account merit rating (Ra = Σ{Rs×W}/ ΣW)		**3.1**		**3.6**		**3.8**		**5.3**

Quantitative analysis for indicators related to Technical Account					Alternative-C		Alternative-D		Alternative-E		Alternative-F	
Account	**Sub-account**	**ID**	**Indicator**	**Indicator Weight (W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**
Technical	Design and Construction Factors	1	Haul Distance	**2**	**2**	**4**	**2**	**4**	**1**	**2**	**6**	**12**
		1	Length of Perimeter Ditching	**4**	**1**	**4**	**3**	**12**	**1**	**4**	**6**	**24**
				Sub-account merit score (∑(SxW))		**8**		**16**		**6**		**36**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**1.3**		**2.7**		**1.0**		**6.0**
	Technical Considerations	2	Stockpile Height	**4**	**1**	**4**	**1**	**4**	**6**	**24**	**4**	**16**
		2	Complexity of Facility Water Management	**3**	**1**	**3**	**3**	**9**	**3**	**9**	**6**	**18**
				Sub-account merit score (∑(SxW))		**7**		**13**		**33**		**34**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**1.0**		**1.9**		**4.7**		**4.9**

Quantitative analysis for sub-accounts related to Technical Account			Alternative-C		Alternative-D		Alternative-E		Alternative-F	
Account	**Sub-account**	**Sub-Account Weight (W)**	**Sub-account merit rating**	**Sub-account merit score**	**Sub-account merit rating**	**Sub-account merit score**	**Sub-account merit rating**	**Sub-account merit score**	**Sub-account merit rating**	**Sub-account merit score**
Technical	Design and Construction Factors	**6**	1.3	**8.0**	2.7	**16.0**	1.0	**6.0**	6.0	**36.0**
	Technical Considerations	**4**	1.0	**4.0**	1.9	**7.4**	4.7	**18.9**	4.9	**19.4**
	Account merit score (Σ{Rs × W})			**12.0**		**23.4**		**24.9**		**55.4**
	Account merit rating (Ra = Σ{Rs×W}/ ΣW)			**1.2**		**2.3**		**2.5**		**5.5**

Quantitative analysis for indicators related to Economical Account					Alternative-C		Alternative-D		Alternative-E		Alternative-F	
Account	**Sub-account**	**ID**	**Indicator**	**Indicator Weight (W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**
Economical	Capital and Operational Cost Considerations	1	Habitat Offset / Compensation Costs	**4**	**4**	**16**	**5**	**20**	**6**	**24**	**1**	**4**
		1	Transportation of Mine Rock to the OVB	**6**	**2**	**12**	**2**	**12**	**1**	**6**	**6**	**36**
		1	Haul / Access Road Construction Costs	**2**	**1**	**2**	**1**	**2**	**1**	**2**	**2**	**4**
				Sub-account merit score (∑(SxW))		**30**		**34**		**32**		**44**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**2.5**		**2.8**		**2.7**		**3.7**
	Closure Cost	3	OVB Cover and Reclamation Costs	**5**	**1**	**5**	**1**	**5**	**1**	**5**	**2**	**10**
		3	Inspection / Maintenance / Operations / Monitoring Costs	**3**	**3**	**9**	**3**	**9**	**1**	**3**	**6**	**18**
		3	Road Reclamation Costs	**2**	**5**	**10**	**1**	**2**	**4**	**8**	**6**	**12**
				Sub-account merit score (∑(SxW))		**24**		**16**		**16**		**40**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**2.4**		**1.6**		**1.6**		**4.0**

Quantitative analysis for sub-accounts related to Economical Account			Alternative-C		Alternative-D		Alternative-E		Alternative-F	
Account	Sub-account	Sub-Account Weight (W)	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score
Economical	Capital and Operational Cost Considerations	3	2.5	7.5	2.8	8.5	2.7	8.0	3.7	11.0
	Closure Cost	5	2.4	12.0	1.6	8.0	1.6	8.0	4.0	20.0
		Account merit score (Σ{Rs × W})		19.5		16.5		16.0		31.0
		Account merit rating (Ra = Σ{Rs×W}/ ΣW)		2.4		2.1		2.0		3.9

Quantitative analysis for indicators related to Socio-Economical Account					Alternative-C		Alternative-D		Alternative-E		Alternative-F	
Account	Sub-account	ID	Indicator	Indicator Weight (W)	Indicator Value (S)	Indicator Merit Score (S × W)	Indicator Value (S)	Indicator Merit Score (S × W)	Indicator Value (S)	Indicator Merit Score (S × W)	Indicator Value (S)	Indicator Merit Score (S × W)
Socio-Econ	Indigenous Land Use	1	Wild Rice	2	6	12	6	12	6	12	6	12
		1	Moose Late Wintering Habitat	3	3	9	3	9	1	3	6	18
		1	Moose Foraging Habitat	3	6	18	5	15	1	3	5	15
		1	Loss of Indigenous Land Uses	4	3	12	3	12	1	4	6	24
				Sub-account merit score (∑(SxW))		51		48		22		69
				Sub-account merit rating (RS=∑(SxW)/∑W)		4.3		4.0		1.8		5.8

Quantitative analysis for sub-accounts related to Socio-Economical Account			Alternative-C		Alternative-D		Alternative-E		Alternative-F	
Account	Sub-account	Sub-Account Weight (W)	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score
Socio-Econ	Indigenous Land Use	4	4.3	17.0	4.0	16.0	1.8	7.3	5.8	23.0
		Account merit score (Σ{Rs × W})		17.0		16.0		7.3		23.0
		Account merit rating (Ra = Σ{Rs×W}/ ΣW)		4.3		4.0		1.8		5.8

Quantitative analysis for accounts		Alternative-C		Alternative-D		Alternative-E		Alternative-F	
Account	Account Weight (W)	Account Merit Rating (Ra)	Account Merit score (Ra × W)	Account Merit Rating (Ra)	Account Merit score (Ra × W)	Account Merit Rating (Ra)	Account Merit score (Ra × W)	Account Merit Rating (Ra)	Account Merit score (Ra × W)
Environmental	6	3.1	18.3	3.6	21.8	3.8	22.8	5.3	31.6
Technical	3	1.2	3.6	2.3	7.0	2.5	7.5	5.5	16.6
Economical	1.5	2.4	3.7	2.1	3.1	2.0	3.0	3.9	5.8
Socio-Economical	3	4.3	12.8	4.0	12.0	1.8	5.5	5.8	17.3
	Alternative merit score (Σ{Ra × W})		38.3		43.9		38.8		71.3
	Alternative merit rating (A = Σ{Ra×W}/ ΣW)		2.8		3.3		2.9		5.3

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Quantitative analysis for indicators related to Environment Account						Alternative-E		Alternative-G		Alternative-H		Alternative-I		Alternative-J		Alternative-O	
Account	Sub-account	ID	Indicator	Indicator Weight (W)		Indicator Value (S)	Indicator Merit Score (S × W)	Indicator Value (S)	Indicator Merit Score (S × W)	Indicator Value (S)	Indicator Merit Score (S × W)	Indicator Value (S)	Indicator Merit Score (S × W)	Indicator Value (S)	Indicator Merit Score (S × W)	Indicator Value (S)	Indicator Merit Score (S × W)
Environment	Fisheries Resources	2	Loss of Fish Habitat (Waterbodies)	6		2	**12**	5	**30**	1	**6**	6	**36**	6	**36**	6	**36**
		2	Loss of Fish Habitat (Watercourses)	5		3	**15**	3	**15**	1	**5**	5	**25**	6	**30**	3	**15**
		2	Number of Watercourse Crossings	4		4	**16**	5	**20**	3	**12**	5	**20**	3	**12**	5	**20**
				Sub-account merit score (∑(SxW))			**43**		**65**		**23**		**81**		**78**		**71**
				Sub-account merit rating (RS=∑(SxW)/∑W)			**2.9**		**4.3**		**1.5**		**5.4**		**5.2**		**4.7**
	Atmospheric Emissions	3	Noise Emissions	1		5	**5**	5	**5**	1	**1**	2	**2**	2	**2**	6	**6**
		3	Greenhouse Gases (GHG) Emissions	1		6	**6**	3	**3**	5	**5**	1	**1**	1	**1**	3	**3**
		3	Fugitive Dust	2		4	**8**	5	**10**	1	**2**	4	**8**	6	**12**	4	**8**
				Sub-account merit score (∑(SxW))			**19**		**18**		**8**		**11**		**15**		**17**
				Sub-account merit rating (RS=∑(SxW)/∑W)			**4.8**		**4.5**		**2.0**		**2.8**		**3.8**		**4.3**
	Terrestrial and Water Resources	4	TMF Footprint	5		6	**30**	3	**15**	1	**5**	1	**5**	6	**30**	2	**10**
		4	Number of Subcatchment Areas Affected	5		6	**30**	3	**15**	6	**30**	4	**20**	5	**25**	4	**20**
		4	Haul / Access Road Corridors	2		3	**6**	6	**12**	1	**2**	1	**2**	2	**4**	5	**10**
				Sub-account merit score (∑(SxW))			**66**		**42**		**37**		**27**		**59**		**40**
				Sub-account merit rating (RS=∑(SxW)/∑W)			**5.5**		**3.5**		**3.1**		**2.3**		**4.9**		**3.3**
	Species at Risk	5	Direct Loss of Wolverine Habitat	4		1	**4**	6	**24**	2	**8**	5	**20**	6	**24**	1	**4**
		5	Direct Loss of Caribou Habitat	3		5	**15**	5	**15**	5	**15**	5	**15**	6	**18**	1	**3**
		5	Direct Loss of Avian SAR Habitat	2		6	**12**	4	**8**	1	**2**	1	**2**	6	**12**	4	**8**
		5	Direct Loss of Bat Foraging Habitat	2		3	**6**	5	**10**	1	**2**	5	**10**	6	**12**	2	**4**
		5	Direct Loss of Maternity Roosting Habitat	2		4	**8**	4	**8**	1	**2**	3	**6**	6	**12**	4	**8**
				Sub-account merit score (∑(SxW))			**45**		**65**		**29**		**53**		**78**		**27**
				Sub-account merit rating (RS=∑(SxW)/∑W)			**3.5**		**5.0**		**2.2**		**4.1**		**6.0**		**2.1**

Quantitative analysis for sub-accounts related to Environment Account			Alternative-E		Alternative-G		Alternative-H		Alternative-I		Alternative-J		Alternative-O	
Account	Sub-account	Sub-Account Weight (W)	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score
Environment	Fisheries Resources	**6**	2.9	**17.2**	4.3	**26.0**	1.5	**9.2**	5.4	**32.4**	5.2	**31.2**	4.7	**28.4**
	Atmospheric Emissions	**2**	4.8	**9.5**	4.5	**9.0**	2.0	**4.0**	2.8	**5.5**	3.8	**7.5**	4.3	**8.5**
	Terrestrial and Water Resources	**3**	5.5	**16.5**	3.5	**10.5**	3.1	**9.3**	2.3	**6.8**	4.9	**14.8**	3.3	**10.0**
	Species at Risk	**6**	3.5	**20.8**	5.0	**30.0**	2.2	**13.4**	4.1	**24.5**	6.0	**36.0**	2.1	**12.5**
	Account merit score (Σ{Rs × W})			**64.0**		**75.5**		**35.8**		**69.1**		**89.5**		**59.4**
	Account merit rating (Ra = Σ{Rs×W}/ ΣW)			**3.8**		**4.4**		**2.1**		**4.1**		**5.3**		**3.5**

Quantitative analysis for indicators related to Technical Account						Alternative-E		Alternative-G		Alternative-H		Alternative-I		Alternative-J		Alternative-O	
Account	Sub-account	ID	Indicator	Indicator Weight (W)		Indicator Value (S)	Indicator Merit Score (S × W)	Indicator Value (S)	Indicator Merit Score (S × W)	Indicator Value (S)	Indicator Merit Score (S × W)	Indicator Value (S)	Indicator Merit Score (S × W)	Indicator Value (S)	Indicator Merit Score (S × W)	Indicator Value (S)	Indicator Merit Score (S × W)
Technical	Design and Construction Factors	1	Storage to Dam Construction Fill Volume Ratio	**5**		**6**	**30**	**2**	**10**	**4**	**20**	**1**	**5**	**1**	**5**	**2**	**10**
		1	Total Number of Independent Water and	**2**		**4**	**8**	**4**	**8**	**5**	**10**	**6**	**12**	**6**	**12**	**4**	**8**
		1	Total Length of Water and Tailings	**4**		**3**	**12**	**1**	**4**	**5**	**20**	**1**	**4**	**3**	**12**	**5**	**20**
		1	Complexity of Seepage Collection Pumping	**2**		**6**	**12**	**1**	**2**	**5**	**10**	**4**	**8**	**6**	**12**	**1**	**2**
				Sub-account merit score (∑(SxW))			**62**		**24**		**60**		**29**		**41**		**40**
				Sub-account merit rating (RS=∑(SxW)/∑W)			**4.77**		**1.85**		**4.62**		**2.23**		**3.15**		**3.08**
	Technical Considerations	2	Maximum TMF Dam Height	**6**		**6**	**36**	**2**	**12**	**6**	**36**	**4**	**24**	**1**	**6**	**5**	**30**
		2	Dam Monitoring and Maintenance	**6**		**6**	**36**	**2**	**12**	**5**	**30**	**3**	**18**	**1**	**6**	**4**	**24**
				Sub-account merit score (∑(SxW))			**72**		**24**		**66**		**42**		**12**		**54**
				Sub-account merit rating (RS=∑(SxW)/∑W)			**6.00**		**2.00**		**5.50**		**3.50**		**1.00**		**4.50**

Quantitative analysis for sub-accounts related to Technical Account			Alternative-E		Alternative-G		Alternative-H		Alternative-I		Alternative-J		Alternative-O	
Account	Sub-account	Sub-Account Weight (W)	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score
Technical	Design and Construction Factors	6	4.8	28.6	1.8	11.1	4.6	27.7	2.2	13.4	3.2	18.9	3.1	18.5
	Technical Considerations	6	6.0	36.0	2.0	12.0	5.5	33.0	3.5	21.0	1.0	6.0	4.5	27.0
	Account merit score (Σ{Rs × W})			64.6		23.1		60.7		34.4		24.9		45.5
	Account merit rating (Ra = Σ{Rs×W}/ ΣW)			5.4		1.9		5.1		2.9		2.1		3.8

Quantitative analysis for indicators related to Economical Account					Alternative-E		Alternative-G		Alternative-H		Alternative-I		Alternative-J		Alternative-O	
Account	Sub-account	ID	Indicator	Indicator Weight (W)	Indicator Value (S)	Indicator Merit Score (S × W)	Indicator Value (S)	Indicator Merit Score (S × W)	Indicator Value (S)	Indicator Merit Score (S × W)	Indicator Value (S)	Indicator Merit Score (S × W)	Indicator Value (S)	Indicator Merit Score (S × W)	Indicator Value (S)	Indicator Merit Score (S × W)
Economical	Capital Costs	1	Site Preparation and Initial TMF Dam Construction Costs	6	6	36	3	18	5	30	1	6	2	12	4	24
		1	Road Construction	2	3	6	5	10	1	2	1	2	2	4	5	10
		1	Habitat Offset / Compensation Costs	4	3	12	4	16	1	4	5	20	6	24	3	12
		1	Conveyance Costs (Pipeline, Conveyor, Stacker, Trucks)	3	6	18	6	18	5	15	1	3	4	12	4	12
		1	Seepage Collection Infrastructure Costs	2	6	12	1	2	4	8	4	8	5	10	2	4
				Sub-account merit score (∑(SxW))		84		64		59		39		62		62
				Sub-account merit rating (RS=∑(SxW)/∑W)		4.94		3.76		3.47		2.29		3.65		3.65
	Operating Cost	2	Annual Tailings Operating Costs	4	5	20	6	24	4	16	1	4	4	16	4	16
		2	Water Treatment Costs	4	5	20	6	24	1	4	5	20	6	24	5	20
				Sub-account merit score (∑(SxW))		40		48		20		24		40		36
				Sub-account merit rating (RS=∑(SxW)/∑W)		5.00		6.00		2.50		3.00		5.00		4.50
	Closure Cost	3	TMF Cover and Reclamation Costs	5	3	15	4	20	1	5	3	15	5	25	3	15
		3	Road Reclamation Costs	2	3	6	6	12	1	2	1	2	2	4	5	10
		3	Water Management Infrastructure Reclamation Costs	4	1	4	3	12	6	24	2	8	4	16	2	8
		3	Inspection / Maintenance / Operations / Monitoring Costs	3	3	9	1	3	5	15	1	3	3	9	5	15
				Sub-account merit score (∑(SxW))		34		47		46		28		54		48
				Sub-account merit rating (RS=∑(SxW)/∑W)		2.4		3.4		3.3		2.0		3.9		3.4

Quantitative analysis for sub-accounts related to Economical Account			Alternative-E		Alternative-G		Alternative-H		Alternative-I		Alternative-J		Alternative-O	
Account	Sub-account	Sub-Account Weight (W)	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score
Economical	Capital Costs	6	4.9	29.6	3.8	22.6	3.5	20.8	2.3	13.8	3.6	21.9	3.6	21.9
	Operating Cost	4	5.0	20.0	6.0	24.0	2.5	10.0	3.0	12.0	5.0	20.0	4.5	18.0
	Closure Cost	5	2.4	12.1	3.4	16.8	3.3	16.4	2.0	10.0	3.9	19.3	3.4	17.1
	Account merit score (Σ{Rs × W})			61.8		63.4		47.3		35.8		61.2		57.0
	Account merit rating (Ra = Σ{Rs×W}/ ΣW)			4.1		4.2		3.2		2.4		4.1		3.8

Quantitative analysis for indicators related to Socio-Economical Account					Alternative-E		Alternative-G		Alternative-H		Alternative-I		Alternative-J		Alternative-O	
Account	Sub-account	ID	Indicator	Indicator Weight (W)	Indicator Value (S)	Indicator Merit Score (S × W)	Indicator Value (S)	Indicator Merit Score (S × W)	Indicator Value (S)	Indicator Merit Score (S × W)	Indicator Value (S)	Indicator Merit Score (S × W)	Indicator Value (S)	Indicator Merit Score (S × W)	Indicator Value (S)	Indicator Merit Score (S × W)
Socio-Economical	Indigenous Land Use	1	Wild Rice	2	6	12	6	12	6	12	6	12	6	12	6	12
		1	Moose Late Wintering Habitat	3	4	12	4	12	1	3	4	12	6	18	4	12
		1	Moose Foraging Habitat	3	5	15	6	18	1	3	6	18	6	18	2	6
		1	Loss of Indigenous Land Uses	4	6	24	4	16	1	4	1	4	6	24	4	16
				Sub-account merit score (∑(SxW))		63		58		22		46		72		46
				Sub-account merit rating (RS=∑(SxW)/∑W)		5.3		4.8		1.8		3.8		6.0		3.8
	Potential Adverse Safety and Environmental Consequences	3	Public Safety Hazard Potential (runout)	6	5	30	2	12	3	18	2	12	1	6	5	30
		3	Public Safety Dam Height	6	6	36	2	12	6	36	4	24	1	6	5	30
		3	Aesthetics	1	2	2	4	4	6	6	6	6	1	1	6	6
				Sub-account merit score (∑(SxW))		68		28		60		42		13		66
				Sub-account merit rating (RS=∑(SxW)/∑W)		5.2		2.2		4.6		3.2		1.0		5.1

Quantitative analysis for sub-accounts related to Socio-Economical Account			Alternative-E		Alternative-G		Alternative-H		Alternative-I		Alternative-J		Alternative-O	
Account	Sub-account	Sub-Account Weight (W)	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score
Socio-Economical	Indigenous Land Use	4	5.3	21.0	4.8	19.3	1.8	7.3	3.8	15.3	6.0	24.0	3.8	15.3
	Potential Adverse Safety and Environmental Consequences	6	5.2	31.4	2.2	12.9	4.6	27.7	3.2	19.4	1.0	6.0	5.1	30.5
		Account merit score (Σ{Rs × W})		52.4		32.3		35.0		34.7		30.0		45.8
		Account merit rating (Ra = Σ{Rs×W}/ ΣW)		5.2		3.2		3.5		3.5		3.0		4.6

Quantitative analysis for accounts		Alternative-E		Alternative-G		Alternative-H		Alternative-I		Alternative-J		Alternative-O	
Account	Account Weight (W)	Account Merit Rating (Ra)	Account Merit score (Ra × W)	Account Merit Rating (Ra)	Account Merit score (Ra × W)	Account Merit Rating (Ra)	Account Merit score (Ra × W)	Account Merit Rating (Ra)	Account Merit score (Ra × W)	Account Merit Rating (Ra)	Account Merit score (Ra × W)	Account Merit Rating (Ra)	Account Merit score (Ra × W)
Environmental	6	3.8	22.6	4.4	26.6	2.1	12.6	4.1	24.4	5.3	31.6	3.5	21.0
Technical	3	5.4	16.2	1.9	5.8	5.1	15.2	2.9	8.6	2.1	6.2	3.8	11.4
Economical	0	4.1	0.0	4.2	0.0	3.2	0.0	2.4	0.0	4.1	0.0	3.8	0.0
Socio-Economical	3	5.2	15.7	3.2	9.7	3.5	10.5	3.5	10.4	3.0	9.0	4.6	13.7
	Alternative merit score (Σ{Ra × W})		54.4		42.1		38.3		43.4		46.8		46.1
	Alternative merit rating (A = Σ{Ra×W}/ ΣW)		4.5		3.5		3.2		3.6		3.9		3.8

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Quantitative analysis for indicators related to Environment Account					Alternative-C		Alternative-D		Alternative-E		Alternative-F	
Account	**Sub-account**	**ID**	**Indicator**	**Indicator Weight (W)**	**Indicator Value (S)**	**Indicator Merit Score**	**Indicator Value (S)**	**Indicator Merit Score**	**Indicator Value (S)**	**Indicator Merit Score**	**Indicator Value (S)**	**Indicator Merit Score**
Environment	Fisheries Resources	2	Loss of Fish Habitat (Waterbodies)	6	1	**6**	6	**36**	6	**36**	5	**30**
		2	Loss of Fish Habitat (Watercourses)	6	3	**18**	4	**24**	6	**36**	1	**6**
		2	Number of Watercourse Crossings	2	4	**8**	5	**10**	5	**10**	6	**12**
				Sub-account merit score (∑(SxW))		**32**		**70**		**82**		**48**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**2.3**		**5.0**		**5.9**		**3.4**
	Atmospheric Emissions	3	Noise Emissions	2	5	**10**	6	**12**	1	**2**	6	**12**
		3	Greenhouse Gases (GHG) Emissions	3	2	**6**	3	**9**	1	**3**	6	**18**
				Sub-account merit score (∑(SxW))		**16**		**21**		**5**		**30**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**3.2**		**4.2**		**1.0**		**6.0**
	Terrestrial and Water Resources	4	MRS Footprint	5	4	**20**	5	**25**	1	**5**	6	**30**
		4	Number of Subcatchment Areas Affected	6	3	**18**	4	**24**	3	**18**	6	**36**
		4	Haul / Access Road Corridor Footprint	2	1	**2**	2	**4**	2	**4**	5	**10**
				Sub-account merit score (∑(SxW))		**40**		**53**		**27**		**76**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**3.1**		**4.1**		**2.1**		**5.8**
	Species at Risk	5	Direct Loss of Wolverine Habitat	4	5	**20**	5	**20**	1	**4**	6	**24**
		5	Direct Loss of Caribou Habitat	3	3	**9**	5	**15**	1	**3**	6	**18**
		5	Direct Loss of Avian SAR Habitat	2	4	**8**	5	**10**	1	**2**	6	**12**
		5	Direct Loss of Bat Foraging Habitat	2	5	**10**	5	**10**	1	**2**	6	**12**
		5	Direct Loss of Maternity Roosting Habitat	2	4	**8**	4	**8**	1	**2**	6	**12**
				Sub-account merit score (∑(SxW))		**55**		**63**		**13**		**78**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**4.2**		**4.8**		**1.0**		**6.0**

Quantitative analysis for sub-accounts related to Environment Account			Alternative-C		Alternative-D		Alternative-E		Alternative-F	
Account	**Sub-account**	**Sub-Account Weight (W)**	**Sub-account merit rating**	**Sub-account merit score**	**Sub-account merit rating**	**Sub-account merit score**	**Sub-account merit rating**	**Sub-account merit score**	**Sub-account merit rating**	**Sub-account merit score**
Environment	Fisheries Resources	**6**	2.3	**13.7**	5.0	**30.0**	5.9	**35.1**	3.4	**20.6**
	Atmospheric Emissions	**3**	3.2	**9.6**	4.2	**12.6**	1.0	**3.0**	6.0	**18.0**
	Terrestrial and Water Resources	**3**	3.1	**9.2**	4.1	**12.2**	2.1	**6.2**	5.8	**17.5**
	Species at Risk	**3**	4.2	**12.7**	4.8	**14.5**	1.0	**3.0**	6.0	**18.0**
		Account merit score (Σ{Rs × W})		**45.2**		**69.4**		**47.4**		**74.1**
		Account merit rating (Ra = Σ{Rs×W}/ ΣW)		**3.0**		**4.6**		**3.2**		**4.9**

Quantitative analysis for indicators related to Technical Account					Alternative-C		Alternative-D		Alternative-E		Alternative-F	
Account	**Sub-account**	**ID**	**Indicator**	**Indicator Weight (W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**
Technical	Design and Construction Factors	1	Haul Distance	**2**	**2**	**4**	**3**	**6**	**1**	**2**	**6**	**12**
		1	Length of Perimeter Ditching	**4**	**4**	**16**	**4**	**16**	**1**	**4**	**6**	**24**
				Sub-account merit score (∑(SxW))		**20**		**22**		**6**		**36**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**3.3**		**3.7**		**1.0**		**6.0**
	Technical Considerations	2	Stockpile Height	**4**	**2**	**8**	**4**	**16**	**6**	**24**	**1**	**4**
		2	Complexity of Facility Water Management	**3**	**4**	**12**	**2**	**6**	**1**	**3**	**6**	**18**
				Sub-account merit score (∑(SxW))		**20**		**22**		**27**		**22**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**2.9**		**3.1**		**3.9**		**3.1**

Quantitative analysis for sub-accounts related to Technical Account			Alternative-C		Alternative-D		Alternative-E		Alternative-F	
Account	**Sub-account**	**Sub-Account Weight (W)**	**Sub-account merit rating**	**Sub-account merit score**	**Sub-account merit rating**	**Sub-account merit score**	**Sub-account merit rating**	**Sub-account merit score**	**Sub-account merit rating**	**Sub-account merit score**
Technical	Design and Construction Factors	**6**	3.3	**20.0**	3.7	**22.0**	1.0	**6.0**	6.0	**36.0**
	Technical Considerations	**4**	2.9	**11.4**	3.1	**12.6**	3.9	**15.4**	3.1	**12.6**
		Account merit score (Σ{Rs × W})		**31.4**		**34.6**		**21.4**		**48.6**
		Account merit rating (Ra = Σ{Rs×W}/ ΣW)		**3.1**		**3.5**		**2.1**		**4.9**

Quantitative analysis for indicators related to Economical Account					Alternative-C		Alternative-D		Alternative-E		Alternative-F	
Account	**Sub-account**	**ID**	**Indicator**	**Indicator Weight (W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**
Economical	Capital Costs	1	Habitat Offset / Compensation Costs	**4**	**3**	**12**	**4**	**16**	**6**	**24**	**1**	**4**
		1	Haul / Access Road Construction Costs	**2**	**4**	**8**	**5**	**10**	**1**	**2**	**6**	**12**
				Sub-account merit score (∑(SxW))		**20**		**26**		**26**		**16**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**3.3**		**4.3**		**4.3**		**2.7**
	Operating Cost	2	Transportation of Mine Rock to the MRS	**6**	**2**	**12**	**3**	**18**	**5**	**30**	**6**	**36**
		2	Water Management	**4**	**2**	**8**	**2**	**8**	**1**	**4**	**6**	**24**
		2	Water Treatment Costs	**4**	**3**	**12**	**4**	**16**	**1**	**4**	**5**	**20**
				Sub-account merit score (∑(SxW))		**32**		**42**		**38**		**80**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**2.3**		**3.0**		**2.7**		**5.7**
	Closure Cost	3	MRS Cover and Reclamation Costs	**5**	**4**	**20**	**4**	**20**	**1**	**5**	**5**	**25**
		3	Inspection / Maintenance / Operations / Monitoring Costs	**3**	**4**	**12**	**5**	**15**	**1**	**3**	**6**	**18**
		3	Road Reclamation Costs	**2**	**1**	**2**	**2**	**4**	**2**	**4**	**6**	**12**
				Sub-account merit score (∑(SxW))		**34**		**39**		**12**		**55**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**3.4**		**3.9**		**1.2**		**5.5**

Quantitative analysis for sub-accounts related to Economical Account			Alternative-C		Alternative-D		Alternative-E		Alternative-F	
Account	Sub-account	Sub-Account Weight (W)	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score
Economical	Capital Costs	3	3.3	10.0	4.3	13.0	4.3	13.0	2.7	8.0
	Operating Cost	6	2.3	13.7	3.0	18.0	2.7	16.3	5.7	34.3
	Closure Cost	5	3.4	17.0	3.9	19.5	1.2	6.0	5.5	27.5
		Account merit score (Σ{Rs × W})		40.7		50.5		35.3		69.8
		Account merit rating (Ra = Σ{Rs×W}/ ΣW)		2.9		3.6		2.5		5.0

Quantitative analysis for indicators related to Socio-Economical Account					Alternative-C		Alternative-D		Alternative-E		Alternative-F	
Account	Sub-account	ID	Indicator	Indicator Weight (W)	Indicator Value (S)	Indicator Merit Score (S × W)	Indicator Value (S)	Indicator Merit Score (S × W)	Indicator Value (S)	Indicator Merit Score (S × W)	Indicator Value (S)	Indicator Merit Score (S × W)
Socio-Economical	Indigenous Land Use	1	Wild Rice	2	6	12	6	12	6	12	6	12
		1	Moose Late Wintering Habitat	3	4	12	4	12	1	3	6	18
		1	Moose Foraging Habitat	3	5	15	5	15	1	3	6	18
		1	Loss of Indigenous Land Uses	4	4	16	5	20	1	4	6	24
				Sub-account merit score (∑(SxW))		55		59		22		72
				Sub-account merit rating (RS=∑(SxW)/∑W)		4.6		4.9		1.8		6.0

Quantitative analysis for sub-accounts related to Socio-Economical Account			Alternative-C		Alternative-D		Alternative-E		Alternative-F	
Account	Sub-account	Sub-Account Weight (W)	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score
Socio-Econ	Indigenous Land Use	4	4.6	18.3	4.9	19.7	1.8	7.3	6.0	24.0
		Account merit score (Σ{Rs × W})		18.3		19.7		7.3		24.0
		Account merit rating (Ra = Σ{Rs×W}/ ΣW)		4.6		4.9		1.8		6.0

Quantitative analysis for accounts		Alternative-C		Alternative-D		Alternative-E		Alternative-F	
Account	Account Weight (W)	Account Merit Rating (Ra)	Account Merit score (Ra × W)	Account Merit Rating (Ra)	Account Merit score (Ra × W)	Account Merit Rating (Ra)	Account Merit score (Ra × W)	Account Merit Rating (Ra)	Account Merit score (Ra × W)
Environmental	6	3.0	18.1	4.6	27.7	3.2	18.9	4.9	29.6
Technical	3	3.1	9.4	3.5	10.4	2.1	6.4	4.9	14.6
Economical	0	2.9	0.0	3.6	0.0	2.5	0.0	5.0	0.0
Socio-Economical	3	4.6	13.8	4.9	14.8	1.8	5.5	6.0	18.0
	Alternative merit score (Σ{Ra × W})		41.3		52.9		30.9		62.2
	Alternative merit rating (A = Σ{Ra×W}/ ΣW)		3.4		4.4		2.6		5.2

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Quantitative analysis for indicators related to Environment Account					Alternative-A		Alternative-B		Alternative-C		Alternative-D	
Account	**Sub-account**	**ID**	**Indicator**	**Indicator Weight (W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**
Environment	Fisheries Resources	2	Loss of Fish Habitat (Waterbodies)	6	6	**36**	4	**24**	6	**36**	6	**36**
		2	Loss of Fish Habitat (Watercourses)	6	6	**36**	1	**6**	6	**36**	1	**6**
		2	Number of Watercourse Crossings	2	6	**12**	6	**12**	5	**10**	6	**12**
				Sub-account merit score (∑(SxW))		**84**		**42**		**82**		**54**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**6.0**		**3.0**		**5.9**		**3.9**
	Atmospheric Emissions	3	Noise Emissions	2	2	**4**	4	**8**	1	**2**	5	**10**
		3	Greenhouse Gases (GHG) Emissions	3	1	**3**	4	**12**	2	**6**	6	**18**
				Sub-account merit score (∑(SxW))		**7**		**20**		**8**		**28**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**1.4**		**4.0**		**1.6**		**5.6**
	Terrestrial and Water Resources	4	LGO Footprint	5	3	**15**	6	**30**	2	**10**	2	**10**
		4	Compact Design	5	2	**10**	2	**10**	1	**5**	6	**30**
		4	Number of Subcatchment Areas Affected	6	3	**18**	4	**24**	6	**36**	6	**36**
		4	Haul / Access Road Corridor Footprint	5	3	**15**	5	**25**	1	**5**	5	**25**
				Sub-account merit score (∑(SxW))		**58**		**89**		**56**		**101**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**2.8**		**4.2**		**2.7**		**4.8**
	Species at Risk	5	Direct Loss of Wolverine Habitat	4	5	**20**	6	**24**	6	**24**	1	**4**
		5	Direct Loss of Caribou Habitat	3	5	**15**	6	**18**	3	**9**	1	**3**
		5	Direct Loss of Avian SAR Habitat	2	3	**6**	6	**12**	2	**4**	2	**4**
		5	Direct Loss of Bat Foraging Habitat	2	2	**4**	5	**10**	6	**12**	1	**2**
		5	Direct Loss of Maternity Roosting Habitat	2	6	**12**	6	**12**	2	**4**	2	**4**
				Sub-account merit score (∑(SxW))		**57**		**76**		**53**		**17**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**4.4**		**5.8**		**4.1**		**1.3**

Quantitative analysis for sub-accounts related to Environment Account			Alternative-A		Alternative-B		Alternative-C		Alternative-D	
Account	**Sub-account**	**Sub-Account Weight (W)**	**Sub-account merit rating**	**Sub-account merit score**	**Sub-account merit rating**	**Sub-account merit score**	**Sub-account merit rating**	**Sub-account merit score**	**Sub-account merit rating**	**Sub-account merit score**
Environment	Fisheries Resources	**6**	6.0	**36.0**	3.0	**18.0**	5.9	**35.1**	3.9	**23.1**
	Atmospheric Emissions	**3**	1.4	**4.2**	4.0	**12.0**	1.6	**4.8**	5.6	**16.8**
	Terrestrial and Water Resources	**3**	2.8	**8.3**	4.2	**12.7**	2.7	**8.0**	4.8	**14.4**
	Species at Risk	**3**	4.4	**13.2**	5.8	**17.5**	4.1	**12.2**	1.3	**3.9**
	Account merit score (Σ{Rs × W})			**61.6**		**60.3**		**60.2**		**58.3**
	Account merit rating (Ra = Σ{Rs×W}/ ΣW)			**4.1**		**4.0**		**4.0**		**3.9**

Quantitative analysis for indicators related to Technical Account					Alternative-A		Alternative-B		Alternative-C		Alternative-D	
Account	**Sub-account**	**ID**	**Indicator**	**Indicator Weight (W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**
Technical	Design and Construction Factors	1	Haul Distance	**6**	**1**	**6**	**4**	**24**	**2**	**12**	**6**	**36**
		1	Length of Perimeter Ditching	**4**	**2**	**8**	**3**	**12**	**2**	**8**	**5**	**20**
				Sub-account merit score (∑(SxW))		**14**		**36**		**20**		**56**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**1.4**		**3.6**		**2.0**		**5.6**
	Operational Considerations	3	Complexity of Facility Water Management	**3**	**5**	**15**	**1**	**3**	**5**	**15**	**6**	**18**
		3	Stockpile Height	**3**	**6**	**18**	**3**	**9**	**2**	**6**	**1**	**3**
				Sub-account merit score (∑(SxW))		**33**		**12**		**21**		**21**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**5.5**		**2.0**		**3.5**		**3.5**

Quantitative analysis for sub-accounts related to Technical Account			Alternative-A		Alternative-B		Alternative-C		Alternative-D	
Account	**Sub-account**	**Sub-Account Weight (W)**	**Sub-account merit rating**	**Sub-account merit score**	**Sub-account merit rating**	**Sub-account merit score**	**Sub-account merit rating**	**Sub-account merit score**	**Sub-account merit rating**	**Sub-account merit score**
Technical	Design and Construction Factors	**6**	1.4	**8.4**	3.6	**21.6**	2.0	**12.0**	5.6	**33.6**
	Operational Considerations	**3**	5.5	**16.5**	2.0	**6.0**	3.5	**10.5**	3.5	**10.5**
		Account merit score (Σ{Rs × W})		**24.9**		**27.6**		**22.5**		**44.1**
		Account merit rating (Ra = Σ{Rs×W}/ ΣW)		**2.8**		**3.1**		**2.5**		**4.9**

Quantitative analysis for indicators related to Economical Account					Alternative-A		Alternative-B		Alternative-C		Alternative-D	
Account	**Sub-account**	**ID**	**Indicator**	**Indicator Weight (W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**
Economical	Capital Costs	1	Habitat Offset / Compensation Costs	**4**	**6**	**24**	**1**	**4**	**6**	**24**	**1**	**4**
		1	Haul / Access Road Construction Costs	**2**	**3**	**6**	**4**	**8**	**2**	**4**	**3**	**6**
				Sub-account merit score (∑(SxW))		**30**		**12**		**28**		**10**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**5.0**		**2.0**		**4.7**		**1.7**
	Operating Cost	2	Transportation of Mine Rock to the LGO	**6**	**1**	**6**	**4**	**24**	**2**	**12**	**6**	**36**
		2	Water Management	**4**	**4**	**16**	**1**	**4**	**4**	**16**	**6**	**24**
				Sub-account merit score (∑(SxW))		**22**		**28**		**28**		**60**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**2.2**		**2.8**		**2.8**		**6.0**
	Closure Cost	3	LGO Cover and Reclamation Costs	**5**	**2**	**10**	**2**	**10**	**2**	**10**	**1**	**5**
		3	Inspection / Maintenance / Operations / Monitoring Costs	**3**	**3**	**9**	**6**	**18**	**2**	**6**	**2**	**6**
		3	Road Reclamation Costs	**2**	**3**	**6**	**6**	**12**	**1**	**2**	**6**	**12**
				Sub-account merit score (∑(SxW))		**25**		**40**		**18**		**23**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**2.5**		**4.0**		**1.8**		**2.3**

Quantitative analysis for sub-accounts related to Economical Account			Alternative-A		Alternative-B		Alternative-C		Alternative-D	
Account	Sub-account	Sub-Account Weight (W)	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score
Economical	Capital Costs	3	5.0	15.0	2.0	6.0	4.7	14.0	1.7	5.0
	Operating Cost	6	2.2	13.2	2.8	16.8	2.8	16.8	6.0	36.0
	Closure Cost	5	2.5	12.5	4.0	20.0	1.8	9.0	2.3	11.5
		Account merit score (Σ{Rs × W})		40.7		42.8		39.8		52.5
		Account merit rating (Ra = Σ{Rs×W}/ ΣW)		2.9		3.1		2.8		3.8

Quantitative analysis for indicators related to Socio-Economical Account					Alternative-A		Alternative-B		Alternative-C		Alternative-D	
Account	Sub-account	ID	Indicator	Indicator Weight (W)	Indicator Value (S)	Indicator Merit Score (S × W)	Indicator Value (S)	Indicator Merit Score (S × W)	Indicator Value (S)	Indicator Merit Score (S × W)	Indicator Value (S)	Indicator Merit Score (S × W)
Socio-Economical	Indigenous Land Use	1	Wild Rice	2	6	12	6	12	6	12	6	12
		1	Moose Late Wintering Habitat	3	3	9	6	18	2	6	2	6
		1	Moose Foraging Habitat	3	1	3	6	18	6	18	6	18
		1	Loss of Indigenous Land Uses	4	3	12	6	24	2	8	2	8
				Sub-account merit score (∑(SxW))		36		72		44		44
				Sub-account merit rating (RS=∑(SxW)/∑W)		3.0		6.0		3.7		3.7
	Operational Impact (Aesthetics)	2	Aesthetics	1	5	5	1	1	4	4	3	3
		2	Compact Design	3	2	6	2	6	1	3	6	18
				Sub-account merit score (∑(SxW))		11		7		7		21
				Sub-account merit rating (RS=∑(SxW)/∑W)		2.8		1.8		1.8		5.3

Quantitative analysis for sub-accounts related to Socio-Economical Account			Alternative-A		Alternative-B		Alternative-C		Alternative-D	
Account	Sub-account	Sub-Account Weight (W)	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score
Socio-Economical	Indigenous Land Use	4	3.0	12.0	6.0	24.0	3.7	14.7	3.7	14.7
	Operational Impact (Aesthetics)	1	2.8	2.8	1.8	1.8	1.8	1.8	5.3	5.3
		Account merit score (Σ{Rs × W})		14.8		25.8		16.4		19.9
		Account merit rating (Ra = Σ{Rs×W}/ ΣW)		3.0		5.2		3.3		4.0

Quantitative analysis for accounts		Alternative-A		Alternative-B		Alternative-C		Alternative-D	
Account	Account Weight (W)	Account Merit Rating (Ra)	Account Merit score (Ra × W)	Account Merit Rating (Ra)	Account Merit score (Ra × W)	Account Merit Rating (Ra)	Account Merit score (Ra × W)	Account Merit Rating (Ra)	Account Merit score (Ra × W)
Environmental	6	4.1	24.7	4.0	24.1	4.0	24.1	3.9	23.3
Technical	3	2.8	8.3	3.1	9.2	2.5	7.5	4.9	14.7
Economical	0	2.9	0.0	3.1	0.0	2.8	0.0	3.8	0.0
Socio-Economical	3	3.0	8.9	5.2	15.5	3.3	9.9	4.0	12.0
	Alternative merit score (Σ{Ra × W})		41.8		48.8		41.4		50.0
	Alternative merit rating (A = Σ{Ra×W}/ ΣW)		3.5		4.1		3.5		4.2

Great Bear Project - MWP

Quantitative analysis for indicators related to Environment Account					Alternative-A		Alternative-B		Alternative-F	
Account	**Sub-account**	**ID**	**Indicator**	**Indicator Weight (W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**
Environment	Water Resources	1	Including the TMF Subcatchment	5	5	**25**	6	**30**	5	**25**
		1	Storage Capacity	6	4	**24**	2	**12**	6	**36**
				Sub-account merit score (∑(SxW))		**49**		**42**		**61**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**4.5**		**3.8**		**5.5**
	Fisheries Resources	2	Loss of Fish Habitat (Waterbodies)	6	6	**36**	1	**6**	6	**36**
		2	Loss of Fish Habitat (Watercourses)	5	5	**25**	6	**30**	1	**5**
		2	Number of Watercourse Crossings	2	6	**12**	6	**12**	4	**8**
				Sub-account merit score (∑(SxW))		**73**		**48**		**49**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**5.6**		**3.7**		**3.8**
	Atmospheric Emissions	3	Noise Emissions	1	2	**2**	5	**5**	4	**4**
		3	Greenhouse Gases (GHG) Emissions	1	6	**6**	6	**6**	6	**6**
				Sub-account merit score (∑(SxW))		**8**		**11**		**10**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**4.0**		**5.5**		**5.0**
	Terrestrial Resources	4	MWP Footprint	5	1	**5**	4	**20**	1	**5**
		4	Haul / Access Road Corridors	2	1	**2**	6	**12**	4	**8**
				Sub-account merit score (∑(SxW))		**7**		**32**		**13**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**1.0**		**4.6**		**1.9**
	Species at Risk	5	Direct Loss of Wolverine Habitat	4	1	**4**	2	**8**	6	**24**
		5	Direct Loss of Caribou Habitat	3	2	**6**	6	**18**	3	**9**
		5	Direct Loss of Avian SAR Habitat	2	2	**4**	6	**12**	1	**2**
		5	Direct Loss of Bat Foraging Habitat	2	2	**4**	1	**2**	6	**12**
		5	Direct Loss of Maternity Roosting Habitat	2	3	**6**	6	**12**	2	**4**
				Sub-account merit score (∑(SxW))		**24**		**52**		**51**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**1.8**		**4.0**		**3.9**

Quantitative analysis for sub-accounts related to Environment Account			Alternative-A		Alternative-B		Alternative-F	
Account	**Sub-account**	**Sub-Account Weight (W)**	**Sub-account merit rating**	**Sub-account merit score**	**Sub-account merit rating**	**Sub-account merit score**	**Sub-account merit rating**	**Sub-account merit score**
Environment	Water Resources	**6**	4.5	**26.7**	3.8	**22.9**	5.5	**33.3**
	Fisheries Resources	**6**	5.6	**33.7**	3.7	**22.2**	3.8	**22.6**
	Atmospheric Emissions	**2**	4.0	**8.0**	5.5	**11.0**	5.0	**10.0**
	Terrestrial Resources	**3**	1.0	**3.0**	4.6	**13.7**	1.9	**5.6**
	Species at Risk	**3**	1.8	**5.5**	4.0	**12.0**	3.9	**11.8**
		Account merit score (Σ{Rs × W})		**77.0**		**81.8**		**83.2**
		Account merit rating (Ra = Σ{Rs×W}/ ΣW)		**3.8**		**4.1**		**4.2**

Quantitative analysis for indicators related to Technical Account					Alternative-A		Alternative-B		Alternative-F	
Account	**Sub-account**	**ID**	**Indicator**	**Indicator Weight (W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**
Technical	Design and Construction Factors	1	Storage to Dam Construction Fill Volume	**6**	**6**	**36**	**5**	**30**	**2**	**12**
		1	Total Number of Independent Water	**2**	**1**	**2**	**6**	**12**	**4**	**8**
		1	Total Length of Water Management Dams	**4**	**4**	**16**	**6**	**24**	**1**	**4**
		1	Complexity of Seepage Collection Pumping	**2**	**1**	**2**	**6**	**12**	**3**	**6**
				Sub-account merit score (∑(SxW))		**56**		**78**		**30**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**4.0**		**5.6**		**2.1**
	Technical Considerations	2	Maximum MWP Dam Height	**6**	**5**	**30**	**6**	**36**	**1**	**6**
		2	Dam Monitoring and Maintenance	**2**	**4**	**8**	**6**	**12**	**1**	**2**
				Sub-account merit score (∑(SxW))		**38**		**48**		**8**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**4.8**		**6.0**		**1.0**

Quantitative analysis for sub-accounts related to Technical Account			Alternative-A		Alternative-B		Alternative-F	
Account	**Sub-account**	**Sub-Account Weight (W)**	**Sub-account merit rating**	**Sub-account merit score**	**Sub-account merit rating**	**Sub-account merit score**	**Sub-account merit rating**	**Sub-account merit score**
Technical	Design and Construction Factors	**6**	4.0	**24.0**	5.6	**33.4**	2.1	**12.9**
	Technical Considerations	**6**	4.8	**28.5**	6.0	**36.0**	1.0	**6.0**
		Account merit score (Σ{Rs × W})		**52.5**		**69.4**		**18.9**
		Account merit rating (Ra = Σ{Rs×W}/ ΣW)		**4.4**		**5.8**		**1.6**

Quantitative analysis for indicators related to Economical Account					Alternative-A		Alternative-B		Alternative-F	
Account	**Sub-account**	**ID**	**Indicator**	**Indicator Weight (W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**
Economical	Capital Costs	1	Site Preparation and Dam Construction Costs	**6**	**6**	**36**	**6**	**36**	**1**	**6**
		1	Road Construction	**2**	**5**	**10**	**6**	**12**	**5**	**10**
		1	Habitat Offset / Compensation Costs	**4**	**6**	**24**	**1**	**4**	**3**	**12**
		1	Conveyance Costs (Pipeline)	**3**	**3**	**9**	**5**	**15**	**4**	**12**
		1	Seepage Collection Infrastructure Costs	**2**	**1**	**2**	**6**	**12**	**3**	**6**
				Sub-account merit score (∑(SxW))		**81**		**79**		**46**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**4.8**		**4.6**		**2.7**
	Closure Cost	2	MWP Reclamation Costs	**3**	**3**	**9**	**4**	**12**	**3**	**9**
		2	Road Reclamation Costs	**2**	**1**	**2**	**6**	**12**	**5**	**10**
		2	Inspection / Maintenance / Operations / Monitoring Costs	**3**	**4**	**12**	**6**	**18**	**1**	**3**
				Sub-account merit score (∑(SxW))		**23**		**42**		**22**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**2.9**		**5.3**		**2.8**

Quantitative analysis for sub-accounts related to Economical Account			Alternative-A		Alternative-B		Alternative-F	
Account	Sub-account	Sub-Account Weight (W)	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score
Economical	Capital Costs	6	4.8	28.6	4.6	27.9	2.7	16.2
	Closure Cost	5	2.9	14.4	5.3	26.3	2.8	13.8
		Account merit score (Σ{Rs × W})		43.0		54.1		30.0
		Account merit rating (Ra = Σ{Rs×W}/ ΣW)		3.9		4.9		2.7

Quantitative analysis for indicators related to Socio-Economical Account					Alternative-A		Alternative-B		Alternative-F	
Account	Sub-account	ID	Indicator	Indicator Weight (W)	Indicator Value (S)	Indicator Merit Score (S × W)	Indicator Value (S)	Indicator Merit Score (S × W)	Indicator Value (S)	Indicator Merit Score (S × W)
Socio-Economical	Indigenous Land Use	1	Wild Rice	2	6	12	1	2	6	12
		1	Moose Late Wintering Habitat	3	3	9	6	18	1	3
		1	Moose Foraging Habitat	3	3	9	3	9	6	18
		1	Loss of Indigenous Land Uses	4	3	12	6	24	1	4
				Sub-account merit score (∑(SxW))		42		53		37
				Sub-account merit rating (RS=∑(SxW)/∑W)		3.5		4.4		3.1
	Potential Adverse Safety and Environmental Consequences	3	Public Safety Hazard Potential (runout)	6	5	30	6	36	2	12
		3	Public Safety Hazard Potential (dam height)	6	3	18	5	30	1	6
		3	Aesthetics	1	1	1	3	3	6	6
				Sub-account merit score (∑(SxW))		49		69		24
				Sub-account merit rating (RS=∑(SxW)/∑W)		3.8		5.3		1.8

Quantitative analysis for sub-accounts related to Socio-Economical Account			Alternative-A		Alternative-B		Alternative-F	
Account	Sub-account	Sub-Account Weight (W)	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score
Socio-Economical	Indigenous Land Use	4	3.5	14.0	4.4	17.7	3.1	12.3
	Potential Adverse Safety and Environmental Consequences	6	3.8	22.6	5.3	31.8	1.8	11.1
		Account merit score (Σ{Rs × W})		36.6		49.5		23.4
		Account merit rating (Ra = Σ{Rs×W}/ ΣW)		3.7		5.0		2.3

Quantitative analysis for accounts		Alternative-A		Alternative-B		Alternative-F	
Account	Account Weight (W)	Account Merit Rating (Ra)	Account Merit score (Ra × W)	Account Merit Rating (Ra)	Account Merit score (Ra × W)	Account Merit Rating (Ra)	Account Merit score (Ra × W)
Environmental	6	3.8	23.1	4.1	24.5	4.2	25.0
Technical	3	4.4	13.1	5.8	17.4	1.6	4.7
Economical	0	3.9	0.0	4.9	0.0	2.7	0.0
Socio-Economical	3	3.7	11.0	5.0	14.9	2.3	7.0
	Alternative merit score (Σ{Ra × W})		47.2		56.7		36.7
	Alternative merit rating (A = Σ{Ra×W}/ ΣW)		3.9		4.7		3.1

Great Bear Project - OVB

Quantitative analysis for indicators related to Environment Account					Alternative-C		Alternative-D		Alternative-E		Alternative-F	
Account	**Sub-account**	**ID**	**Indicator**	**Indicator Weight (W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**
Environment	Fisheries Resources	2	Loss of Fish Habitat (Waterbodies)	6	6	**36**	6	**36**	6	**36**	6	**36**
		2	Loss of Fish Habitat (Watercourses)	6	2	**12**	3	**18**	6	**36**	1	**6**
		2	Number of Watercourse Crossings	2	4	**8**	5	**10**	6	**12**	6	**12**
				Sub-account merit score (∑(SxW))		**56**		**64**		**84**		**54**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**4.0**		**4.6**		**6.0**		**3.9**
	Atmospheric Emissions	3	Noise Emissions	2	2	**4**	1	**2**	5	**10**	6	**12**
		3	Greenhouse Gases (GHG) Emissions	3	2	**6**	2	**6**	1	**3**	6	**18**
				Sub-account merit score (∑(SxW))		**10**		**8**		**13**		**30**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**2.0**		**1.6**		**2.6**		**6.0**
	Terrestrial and Water Resources	4	OVB Footprint	5	3	**15**	3	**15**	1	**5**	6	**30**
		4	Number of Subcatchment Areas Affected	6	3	**18**	5	**30**	5	**30**	5	**30**
		4	Haul / Access Road Corridor Footprint	2	2	**4**	1	**2**	4	**8**	6	**12**
				Sub-account merit score (∑(SxW))		**37**		**47**		**43**		**72**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**2.8**		**3.6**		**3.3**		**5.5**
	Species at Risk	5	Direct Loss of Wolverine Habitat	4	2	**8**	3	**12**	1	**4**	6	**24**
		5	Direct Loss of Caribou Habitat	3	4	**12**	5	**15**	1	**3**	6	**18**
		5	Direct Loss of Avian SAR Habitat	2	3	**6**	3	**6**	1	**2**	6	**12**
		5	Direct Loss of Bat Foraging Habitat	2	3	**6**	4	**8**	1	**2**	6	**12**
		5	Direct Loss of Maternity Roosting Habitat	2	1	**2**	3	**6**	5	**10**	5	**10**
				Sub-account merit score (∑(SxW))		**34**		**47**		**21**		**76**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**2.6**		**3.6**		**1.6**		**5.8**

Quantitative analysis for sub-accounts related to Environment Account			Alternative-C		Alternative-D		Alternative-E		Alternative-F	
Account	**Sub-account**	**Sub-Account Weight (W)**	**Sub-account merit rating**	**Sub-account merit score**	**Sub-account merit rating**	**Sub-account merit score**	**Sub-account merit rating**	**Sub-account merit score**	**Sub-account merit rating**	**Sub-account merit score**
Environment	Fisheries Resources	**6**	4.0	**24.0**	4.6	**27.4**	6.0	**36.0**	3.9	**23.1**
	Atmospheric Emissions	**3**	2.0	**6.0**	1.6	**4.8**	2.6	**7.8**	6.0	**18.0**
	Terrestrial and Water Resources	**3**	2.8	**8.5**	3.6	**10.8**	3.3	**9.9**	5.5	**16.6**
	Species at Risk	**3**	2.6	**7.8**	3.6	**10.8**	1.6	**4.8**	5.8	**17.5**
		Account merit score (Σ{Rs × W})		**46.4**		**53.9**		**58.6**		**75.3**
		Account merit rating (Ra = Σ{Rs×W}/ ΣW)		**3.1**		**3.6**		**3.9**		**5.0**

Quantitative analysis for indicators related to Technical Account					Alternative-C		Alternative-D		Alternative-E		Alternative-F	
Account	**Sub-account**	**ID**	**Indicator**	**Indicator Weight (W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**
Technical	Design and Construction Factors	1	Haul Distance	**2**	**2**	**4**	**2**	**4**	**1**	**2**	**6**	**12**
		1	Length of Perimeter Ditching	**4**	**1**	**4**	**3**	**12**	**1**	**4**	**6**	**24**
				Sub-account merit score (∑(SxW))		**8**		**16**		**6**		**36**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**1.3**		**2.7**		**1.0**		**6.0**
	Technical Considerations	2	Stockpile Height	**4**	**1**	**4**	**1**	**4**	**6**	**24**	**4**	**16**
		2	Complexity of Facility Water Management	**3**	**1**	**3**	**3**	**9**	**3**	**9**	**6**	**18**
				Sub-account merit score (∑(SxW))		**7**		**13**		**33**		**34**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**1.0**		**1.9**		**4.7**		**4.9**

Quantitative analysis for sub-accounts related to Technical Account			Alternative-C		Alternative-D		Alternative-E		Alternative-F	
Account	**Sub-account**	**Sub-Account Weight (W)**	**Sub-account merit rating**	**Sub-account merit score**	**Sub-account merit rating**	**Sub-account merit score**	**Sub-account merit rating**	**Sub-account merit score**	**Sub-account merit rating**	**Sub-account merit score**
Technical	Design and Construction Factors	**6**	1.3	**8.0**	2.7	**16.0**	1.0	**6.0**	6.0	**36.0**
	Technical Considerations	**4**	1.0	**4.0**	1.9	**7.4**	4.7	**18.9**	4.9	**19.4**
	Account merit score (Σ{Rs × W})			**12.0**		**23.4**		**24.9**		**55.4**
	Account merit rating (Ra = Σ{Rs×W}/ ΣW)			**1.2**		**2.3**		**2.5**		**5.5**

Quantitative analysis for indicators related to Economical Account					Alternative-C		Alternative-D		Alternative-E		Alternative-F	
Account	**Sub-account**	**ID**	**Indicator**	**Indicator Weight (W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**	**Indicator Value (S)**	**Indicator Merit Score (S × W)**
Economical	Capital and Operational Cost Considerations	1	Habitat Offset / Compensation Costs	**4**	**4**	**16**	**5**	**20**	**6**	**24**	**1**	**4**
		1	Transportation of Mine Rock to the OVB	**6**	**2**	**12**	**2**	**12**	**1**	**6**	**6**	**36**
		1	Haul / Access Road Construction Costs	**2**	**1**	**2**	**1**	**2**	**1**	**2**	**2**	**4**
				Sub-account merit score (∑(SxW))		**30**		**34**		**32**		**44**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**2.5**		**2.8**		**2.7**		**3.7**
	Closure Cost	3	OVB Cover and Reclamation Costs	**5**	**1**	**5**	**1**	**5**	**1**	**5**	**2**	**10**
		3	Inspection / Maintenance / Operations / Monitoring Costs	**3**	**3**	**9**	**3**	**9**	**1**	**3**	**6**	**18**
		3	Road Reclamation Costs	**2**	**5**	**10**	**1**	**2**	**4**	**8**	**6**	**12**
				Sub-account merit score (∑(SxW))		**24**		**16**		**16**		**40**
				Sub-account merit rating (RS=∑(SxW)/∑W)		**2.4**		**1.6**		**1.6**		**4.0**

Quantitative analysis for sub-accounts related to Economical Account			Alternative-C		Alternative-D		Alternative-E		Alternative-F	
Account	Sub-account	Sub-Account Weight (W)	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score
Economical	Capital and Operational Cost Considerations	3	2.5	7.5	2.8	8.5	2.7	8.0	3.7	11.0
	Closure Cost	5	2.4	12.0	1.6	8.0	1.6	8.0	4.0	20.0
		Account merit score (Σ{Rs × W})		19.5		16.5		16.0		31.0
		Account merit rating (Ra = Σ{Rs×W}/ ΣW)		2.4		2.1		2.0		3.9

Quantitative analysis for indicators related to Socio-Economical Account					Alternative-C		Alternative-D		Alternative-E		Alternative-F	
Account	Sub-account	ID	Indicator	Indicator Weight (W)	Indicator Value (S)	Indicator Merit Score (S × W)	Indicator Value (S)	Indicator Merit Score (S × W)	Indicator Value (S)	Indicator Merit Score (S × W)	Indicator Value (S)	Indicator Merit Score (S × W)
Socio-Economical	Indigenous Land Use	1	Wild Rice	2	6	12	6	12	6	12	6	12
		1	Moose Late Wintering Habitat	3	3	9	3	9	1	3	6	18
		1	Moose Foraging Habitat	3	6	18	5	15	1	3	5	15
		1	Loss of Indigenous Land Uses	4	3	12	3	12	1	4	6	24
				Sub-account merit score (∑(SxW))		51		48		22		69
				Sub-account merit rating (RS=∑(SxW)/∑W)		4.3		4.0		1.8		5.8

Quantitative analysis for sub-accounts related to Socio-Economical Account			Alternative-C		Alternative-D		Alternative-E		Alternative-F	
Account	Sub-account	Sub-Account Weight (W)	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score	Sub-account merit rating	Sub-account merit score
Socio-Econ	Indigenous Land Use	4	4.3	17.0	4.0	16.0	1.8	7.3	5.8	23.0
		Account merit score (Σ{Rs × W})		17.0		16.0		7.3		23.0
		Account merit rating (Ra = Σ{Rs×W}/ ΣW)		4.3		4.0		1.8		5.8

Quantitative analysis for accounts		Alternative-C		Alternative-D		Alternative-E		Alternative-F	
Account	Account Weight (W)	Account Merit Rating (Ra)	Account Merit score (Ra × W)	Account Merit Rating (Ra)	Account Merit score (Ra × W)	Account Merit Rating (Ra)	Account Merit score (Ra × W)	Account Merit Rating (Ra)	Account Merit score (Ra × W)
Environmental	6	3.1	18.6	3.6	21.6	3.9	23.4	5.0	30.1
Technical	3	1.2	3.6	2.3	7.0	2.5	7.5	5.5	16.6
Economical	0	2.4	0.0	2.1	0.0	2.0	0.0	3.9	0.0
Socio-Economical	3	4.3	12.8	4.0	12.0	1.8	5.5	5.8	17.3
	Alternative merit score (Σ{Ra × W})		34.9		40.6		36.4		64.0
	Alternative merit rating (A = Σ{Ra×W}/ ΣW)		2.9		3.4		3.0		5.3