

Reviewer Comments and Proponent Responses

Project: Yellowknife Lithium Project
Board: Mackenzie Valley Land and Water Board
Organization: EREX International Ltd

No.	Topic	Reviewer Comment	Reviewer Recommendation	Proponent Response	Board Decision
GNWT-ENR - EAM (Environmental Assessment and Monitoring) - Environmental Regulatory Analyst					
1	ECC Cover Letter	Please see attached.	N/A		
2	Ice Bridge	<p>Part D of the draft Water Licence has a direction from the “Board staff seeking input from a GNWT Inspector regarding the use of ice road/bridge in the table (as opposed to using only ice road or ice bridge).” It is unclear to ECC the intent of this comment by Board staff.</p> <p>ECC supports the Board by including clear terms with definitions, such as “winter road” and “ice bridge” in the licence. ECC notes that an ambiguous definition of these terms could adversely impact the proponent’s activities. Using ice road/bridge could confuse how activities under the license and associated land use permits are regulated. The Board could use the terms “ice bridge” and “winter road” in the terms defined in the licence. Ice bridges should refer to ice roads on water bodies only, and “winter road” should refer to over-land portions of the road.</p> <p>ECC would also like to note that the GNWT submitted our concern on the Board’s interpretation of water use for ice bridges to the Board via email correspondence on January 30, 2023. It is noted that the previous reasons for the</p>	<p>ECC recommends that the Board add the terms “ice bridge” and “winter road” to the definitions of the licence. “Ice bridges” should refer to ice roads on water bodies only, and “winter road” should refer to over-land portions of the road.</p> <p>ECC recommends that the Board remove “ice bridges” from the listed water uses of the licence. Only water used for over-land road construction, camp use, or drilling activities should be included in the use calculations.</p>	Proponent accepts ECC’s recommendations for definitions of ice bridges and winter roads, and that water usage for ice bridges over water bodies should not be included in licenced water usage.	<p>The Board notes that a winter road should be an interconnected structure that includes ice bridges and overland components. The Board has added a definition for Winter Road to the Licences for clarity, as well as updating Part D to refer to water use for a Winter Road, as opposed to separating the water use between ice bridges and overland portions. The Board also included the term Winter Road in the Permit for consistency.</p> <p>The Board notes that ECC’s recommendation is not consistent with the LWB’s Reference Bulletin: Water Use and the LWBs’ interpretation of the legislation. The LWBs are considering how to address the differences in interpretation with respect to ice-bridge water use.</p>

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		decision on the original licence had the Board including ice bridges in Part D, Condition 1 of the licence. ECC believes that water sourced to construct ice bridges on a lake or river should not count towards maximum daily totals. ECC notes that this licence has been classified as “miscellaneous” under Part H of the Waters Regulations, which explicitly excludes ice bridges from a water licence trigger. ECC maintains that the intention of excluding ice bridges under Schedule H was to specifically address that the regulations should not apply to these activities. ECC maintains that the water used to create ice in the same water body should fall under the same premise as an indirect use and that water used in this manner is similar to a diversion. ECC understands that the Board may be seeking input on this specific issue of ice bridges as a water use in the near future. ECC will provide more details on its position at that time.			
3	Security Estimate	ECC has completed an updated security estimate of the territorial components for the Project to help inform the Mackenzie Valley Land and Water Board’s (MVLWB’s) decision on determining security associated with the water licence (non-federal) and LUP. This security estimate update incorporates new data and information provided in EREX’s amendment application documentation submitted on March 9, 2023. A holistic reclamation cost for the Project, which included an estimate of the federal security is provided following the approach ECC’s previous 2022 estimate	ECC recommends that the reclamation security for the Territorial authorizations should be \$383,784.00. \$145,365 should be held under the water licence, and the remaining \$238,419 should be held under a lands instrument. ECC directs the Board and Nighthawk to the attached memorandum and attached excel RECLAIM file from its retained consultant, ARKTIS, that provides in-depth details on the	Proponent accepts ECC recommendations for security for the land and water components under territorial jurisdiction, as well as the estimates of security for land and water for federal land. However, the 20% contingency on top of 21.6% inflation adjustment for prices from 2014 to 2023 appears to be a little excessive.	The Board accepts ECC’s recommendation regarding security.

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		to ensure that project components were not double bonded due to project design and potential overlap as well as provide consistency in comparison of update information. However, it is recognized that security recommendations associated with federal liability are the responsibility of the Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC). Therefore, ECC defers to CIRNAC on this security component. A review of securities proposed for the Federal component of the Project by CIRNAC was not completed for adjustments to reconcile potential common securities or to evaluate if the Federal security estimate remains valid. No recommendations to the CIRNAC security are presented for this submission. ECC directs the Board and EREX International Ltd. to the attached memorandum from its retained consultant, ARKTIS, that provides in-depth details on the estimate splits between Federal and Territorial lands and land and land water liabilities.	estimated splits between Federal and Territorial lands and land and land water liabilities. ECC recommends that the reclamation security for the Federal authorizations should be \$248,264.00. \$45,589 should be held under the water licence, and the remaining \$202,675 should be held under a lands instrument. It should be noted that ECC has provided this recommendation for information purposes only, as ECC defers to Canada on making recommendations for Federal liabilities.		
4	Additional information items for refining the security estimate	ECC's estimate submitted with these comments reflects current information provided in the amendment application documentation lists in Section 1 and EREX's correspondence on March 17, 2023. It is noted that EREX's RECLAIM estimate contains items of not such as the exclusion of inflation in the total costs, mistakes in cell references or calculations, and discrepancies in quantities from values indicated in the CRP, Project Description, and/or other cost items within the RECLAIM estimate.	None.		Noted.

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		<p>Additional information from EREX's amendment application and correspondence has addressed some uncertainties identified in ECC's previous review and RECLAIM estimate.</p> <p>The new data and information have been incorporated in this RECLAIM security estimate update where applicable. Additional information and details for further consideration and/or to be provided by EREX to further refine the reclamation security estimate and address outstanding uncertainties are included in the subsequent recommendations.</p>			
5	Underground Mine	ECC is seeking more information regarding the description of closure and reclamation activities anticipated for the trenches.	ECC recommends that EREX Include an estimate for the quantity of potential PAG waste rock that may require off-site disposal.	<p>- From previous geochemical analytical work done on trench samples Proponent believes that there is no likelihood of potentially acid generating ("PAG") waste rock occurring on its leases. EREX will be conducting analyses of rock to determine if PAG rock occurs in the areas it is working on an ongoing basis over the term of the permit.</p> <p>The focus of EREX's exploration work is spodumene-bearing pegmatites. These rocks contain no sulphides, consequently their PAG ability is nil. The wallrock to the pegmatites is Burwash Formation metasediments. That formation may contain</p>	Given the details requested for refining the security estimate by ECC are forthcoming, the Board requires EREX to submit an updated RECLAIM model within two years of the effective date of the Licences and Permit with the details.

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				<p>trace amounts of sulphides - pyrite or pyrrhotite – but there is little evidence of this: no limonitic or gossanous zones have been seen in the exposures around the pegmatites; there has been no hydrothermal alteration of the wallrock associated with the pegmatite. Consequently, it is unlikely that the wall rock has PAG abilities. EREX has retained the services of Det'on Cho Environmental to initiate environmental baseline studies. Their independent studies will assist in understanding the PAG abilities in the areas that EREX is exploring. In terms of reclamation and closure activities anticipated for the trenches EREX will assess those requirements in consultation with GNWT inspectors when trenches are excavated.</p>	
6	Buildings & Equipment – IR 1	<p>The number of drill pads/holes requiring remediation on Federal and Territorial leases for the 2023- 24 program has been provided in the CRP; however, it is uncertain whether these numbers are representative of the annual average. The distribution of drill holes located on federal and territorial land has been used to inform the cost split of select items in the RECLAIM security estimate. Since the</p>	<p>ECC recommends that EREX Include information detailing the anticipated number of drill holes on Federal and Territorial leases annually for the duration of the program, which may further refine the cost split for the security estimate.</p>	<p>Once EREX is on the ground it will be able to assess where exactly it can drill in the summer and then plan out drill holes for winter. As you also point out the distribution and number of drill holes will vary in future years. EREX will keep GNWT and CIRNAC inspectors appraised of drill</p>	<p>See Board Decision to ECC, comment 5.</p>

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		distribution and number of drill holes may vary in future years of mineral exploration, the proportion of Federal and Territorial costs allocated to these components may also change.		locations, proposed, and completed during the term of the permit.	
7	Buildings & Equipment – IR 2	Some additional clarification regarding the length of winter road portages on Federal and Territorial leases was provided in correspondence and has been incorporated in updating the RECLAIM estimate. However, it is unclear whether EREX is responsible for the construction and operation of the Thompson-Lundmark winter road or section of the winter road. The number of ice bridges crossing streams and creeks also remains uncertain.	<p>ECC recommends that EREX provide the following details:</p> <ol style="list-style-type: none"> 1. The length of the existing Thompson-Lundmark winter road for which EREX is required to complete construction and operation. 2. The estimated number of ice bridges crossing streams/creeks on Federal and Territorial leases that will require reclamation (i.e., V-notching). 3. Identify all areas that require reclamation and describe the closure and reclamation activities anticipated for these areas (e.g., scarification, seeding, regrading, etc.). Include estimated quantities or map(s) providing a clear delineation of areas and the reclamation activities to occur. 	<ol style="list-style-type: none"> 1. Estimated length of the Thompson-Lundmark winter road from the point of departure from Highway 4 to EREX's proposed campsite at Hidden Lake is 10.25 km. From the campsite north there is approximately 3.35 km of the winter road that EREX will likely open and use during the term of the permit. 2. At this time EREX personnel have not examined the Thompson-Lundmark winter road corridor to assess how many stream/creek cross there are. EREX will examine the road during the summer to be in a position to quantify stream/creek crossing that could need reclamation (i.e. v-notching) on federal and territorial land and confirm these with GNWT and CIRNAC inspectors in advance of winter operations. 3. At this time the main areas that could require reclamation at the previously disturbed and abandoned Hidden Lake gold mine are the campsite, fuel storage, helicopter pad, drill core logging and cutting facilities, 	See Board Decision to ECC, comment 5.

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				and core storage all of which are on federal land. Reclamation for these areas could, as you have pointed out, may require some degree of scarification, seeding, regrading, etc. A detailed map of the proposed campsite and associated facilities is provided in the Project Description. Until that camp is constructed and in operation it is difficult to estimate the amount and nature of reclamation activities that could be needed post project operations. Reclamation requirements will be estimated as the project progresses in consultation with GNWT and CIRNAC inspectors.	
8	Buildings & Equipment – IR 3	The drilling programs described in the Project Description indicate variability in drill location between federal and territorial land such as during the transition between the Spring-Summer and Winter Programs. Due to the variability in drill location, there is uncertainty of drill location at the time of abandonment which may affect the Federal/Territorial cost split for drill removal. Presently, the cost split is assumed to be 50:50; however, further information detailing the locations of all drills throughout the year may further refine the cost split for the security estimate.	ECC recommends that for future security estimates, EREX Include a more thorough description of drill locations completed for both Federal and Territorial lands.	EREX will provide detailed locations for planned and completed holes drilled.	See Board Decision to ECC, comment 5.

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9	Interim and Post-Closure Monitoring and Maintenance	ECC is seeking more information regarding costing associated with the Interim and Post-Closure Monitoring and Maintenance.	ECC recommends that EREX describe: 1. The interim monitoring/inspection locations and duration. 2. The post-closure monitoring/inspection locations and duration.	1. Once EREX is on the ground it will have a better opportunity to determine the locations and duration of interim monitoring/inspection stations. For drilling these are expected to change as the drills move around the leases during summer and winter. Water usage in the Hidden Lake camp will be monitored there over the term of the project. 2. post-closure monitoring/inspection locations and duration will be determined in consultation with GWNT and CIRNAC inspectors.	See Board Decision to ECC, comment 5.
10	Mobilization/Demobilization	EREX indicated an estimate of 21 days as the duration of the anticipated reclamation program; however, specific details on the reclamation activities required to be completed within the program and their timelines are unclear.	ECC recommends that EREX: 1. Provide a detailed schedule for all closure and reclamation activities, including equipment requirements associated with these activities and the crew and time requirements to complete the activities. 2. Estimate fuel requirements to support, sustain, and complete the reclamation activities on Federal and Territorial land. 3. Confirm the disposal location and all applicable	EREX will provide all information that ECC requires regarding all closure and reclamation activities on federal and territorial land. EREX will confirm the disposal location and associated fees. EREX acknowledges that the version of the Waste Management plan submitted was incomplete. A revised version will be prepared and submitted to the Board regulatory staff for review.	See Board Decision to ECC, comment 5. Board staff mistakenly did not realize that the version of the WMP original attached to the ORS for the public review did not include the attachments in Appendix A referenced by the GNWT. Subsequently on April 13 the correct WMP V1.2 was included on the ORS.

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			fees associated with the types of waste for off-site disposal. It is noted that the Waste Management Plan (v1.2) did not include attachments in Appendix A.		
11	Memorandum	Arktis RECLAIM Estimate Memorandum	see attached	EREX appreciates the effort that Arktis has put into their RECLAIM Estimate.	
12	RECLAIM Estimate	RECLAIM Estimate Workbook	see attached	Received	
CIRNAC-Inspectors - Tim Morton					
1	Waste Management Plan – Page 19 Waste Streams	Storage of waste streams prior to transport off site section appears to be inconsistent with the project and what is listed within the federal and territorial lands. For example, drill cuttings arising from diamond drilling and contaminated soils arising from fuel spills near the bulk fuel storage facility is listed under the territorial lands section but not the federal lands. These two sections need to be reevaluated as the project now includes drilling and other activities on federal lands.	Reevaluate these two sections to reflect the possible waste streams and storage on both federal and territorial lands.	Thank you for bringing this inconsistency to my attention corrections to the Waste Management Plan will be made to rectify this.	Board directive according to the Inspector's comment.
2	Scope of Draft Federal Water Licence	Ensure that the scope of the federal water licence includes all activities proposed by the applicant. Example, withdrawal of water is only scoped for camp consumption and not drilling.	Revisit the scope to ensure that all activities applied for are scoped into the licence.		The Board updated the Licence according to the Inspector's comment.
3	Draft Federal Water Licence – Part E Condition 7	As mention in previous comments, please revisit the list of waste including storage within the waste management plan on federal lands to ensure that this condition does not limit the activities on federal lands.	Revisit the waste management plan, specifically the waste management on federal lands.	Thank you for pointing this out EREX will revise the Waste Management Plan to be sure that waste streams on federal land and waste storage areas are clearly identified.	See Board Decision to CIRNAC Inspector, comment 1.

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CIRNAC (Yellowknife) - Megan Larose					
1	Waste Managment Plan	The Waste Management Plan doesn't appear to have been updated to reflect the proposed changes to project. For example, the text in Section 1.7 (Project Description) does not reference the addition of the Perlis leases, plans for exploration drilling on federal land, or the changes to the project timeline (e.g., no winter season work in 2023). It is acknowledged that Version 1.2 (posted April 13) includes updated figures that show the location of the Perlis leases, the text does not appear to have changed.	A revised version of the Waste Management Plan should include an updated description of the project, site description, and timeline.	Thank you for pointing out those errors in the Waste Management Plan Project Description. These will be corrected in a revised version of the Plan.	Board directive according to the comment.
2	Waste Management Plan - Sewage	Section 2.3 (pg 15) of the Waste Management Plan indicates that at the Hidden Lake Camp sewage will be managed by pit latrine in summer, and incinolet toilet in winter. However, Section 2.3.3 (page 20) references use of incinolet toilets at the main camp for winter and summer programs and pit latrines at smaller outlying camps. If pit latrines are planned at the Hidden Lake Camp then this should be added to the scope of the federal water licence.	Clarify if pit latrines will be used at the Hidden Lake Camp or not. If so, add the deposit of sewage into sumps into the scope of the federal water licence, similar to Item 1.j) of the non-federal licence.	Pit latrines will not be used at the Hidden Lake camp. The Waste Management Plan will be revised to state that.	Board directive according to the response. For project flexibility, the Board has included "Depositing of drill cuttings and Sewage into Sumps" in the federal Licence MV2022L8-0009.
3	Scope of the federal licence - withdrawal of water & deposit of drill cuttings	The amendment application indicates that exploration drilling is planned for federal leases that the Proponent is in the process of acquiring that cover the abandoned Thompson-Lundmark Mine. To accommodate drilling activities on federal lands, the scope of the federal water licence should include the withdrawal of water for drilling purposes and the deposit of drill cuttings.	Add the withdrawal of water for drilling and camp consumption and the deposit of drill cuttings to the scope of the federal water licence, similar to Item 1.i) and Item 1.j) of the non-federal water licence.	EREX agrees with CIRNAC's recommendations.	See Board Decision to CIRNAC – Inspector, comment 2.

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4	Federal Water Licence - Schedule 1: Annual Water Licence Report	With drilling activities proposed on federal land, the annual water licence report for the federal water licence should include reporting of drill waste discharged by location, and a summary and interpretation of results from the geochemical characterization and discussion on the potential for acid rock drainage and metal leaching based on the geochemical data for federal land.	Revise Schedule 1 Item 1.h) of the federal water licence to include the requirement to provide "Monthly and annual quantities, in cubic metres, of drill Waste discharged by location" - similar to non-federal licence (page 18). Add a condition similar to condition 1.m) of the non-federal licence (page 18) that requires "A summary and interpretation of the results from the geochemical characterization and a discussion on the potential for acid rock drainage and metal leaching based on the geochemical data".	EREX agrees to provide the information required by the revision that CIRNAC as requested.	The Board has updated the federal Licence MV2022L8-0009 according to the comment.
5	Land Use Permit - Fuel Volume	Condition 70 (page 10 of 13) of the Land Use Permit currently states that the maximum fuel on site is 109,965 litres; unless otherwise approved by the Board. However, the revised project description and closure and reclamation plan provided for the amendment application suggest that the total volume of fuel stored for the project will be 125,020 litres, stored at three locations: - Hidden Lake Camp (federal) 3 x 25,000 litre tanks (75,000 L) + 130 drums (26,650 L) = 101,650 L - Big/Nite Lease (territorial) 12 drums (2,460 L) - Echo Lease (territorial) 102 drums (20,910 L) The maximum volume of fuel on site (Condition 70) should be representative of the project as a whole and include all	Confirm the maximum volume of fuel expected to be stored on-site for the project on federal and territorial land so that the correct volume is reflected in the amended land use permit (Condition 70).	EREX confirms that it is requesting the maximum volume of fuel to be stored on -site on federal and territorial land be changed to 125,020 litres.	The Board has updated the Permit according to the recommendation and response.

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		proposed storage locations.			
6	Security Estimate - Federal Land	<p>CIRNAC has prepared a revised security estimate based on our understanding of the proposed project amendments. This includes the following assumptions regarding planned activities on federal land:</p> <ul style="list-style-type: none"> - Bulk fuel storage will now be located on federal land at the Hidden Lake Camp - Exploration drilling will occur on federal land (estimated 22 drill holes in 2023) - No trenching or channel sampling will occur on federal land - No storage of explosives on federal land - Hazardous waste storage is located on federal land - Drilling equipment will be stored on federal land - Other equipment required for the project (e.g., graders, pick-up trucks, ATVs, snow machines) will be stored on federal land - Closure and Reclamation activities on federal lands will require site work in the winter for 2 weeks (14 days) - Cost to mobilize/demobilize equipment required for closure and reclamation activities will be split between federal and territorial (assumed approximately 50/50 split) <p>Changes to the above assumptions may result in the need to review the security estimate. CIRNAC has proposed an inflation adjustment of 21.6% based on the change in Consumer Price Index for Yellowknife between 2014 to January 2023 as reported by Statistics Canada. Contingency (20%) has also been applied</p>	CIRNAC recommends a security estimate of \$208,197 for the federal component of the land use permit and a security estimate of \$48,055 for the federal water licence.	EREX accepts CIRNAC's recommendations for security for land and water.	The Board accepts CIRNAC's recommendation regarding security.

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		to capital costs, mobilization/demobilization, post-closure monitoring and maintenance and the associated inflation. A copy of our proposed RECLAIM Estimate for federal land is attached for consideration.			
MVLWB - Kimberley Murray					
1	Application Forms - Section 7, second table	The second table under Section 7 in the Licence Application Forms for MV2022L8-0008 and MV2022L8-0009 include a footnote for the "Comparison of Total Proposed Water Use to Capacity" column. The footnote indicates that the calculation used was: $(299/\text{capacity of water source}) \times 100$, assuming a proposed water use of 299 cubic metres/day. Based on this calculation, which used the available capacity of each water source (which is also the proposed annual withdrawal limit for each water source), Lake 31 has a value of 120%. EREX has indicated "water use will not exceed the Annual Withdraw limit of the source" in the Project Description, which conflicts with the 120% comparison provided in the Application form. It is unclear to Board staff if the proposed water use of 299 cubic metres for Lake 31 with an annual capacity of 250 cubic metre is an oversight.	EREX to confirm that they will be able to stay within the proposed annual withdrawal limit for Lake 31.	EREX confirms that it will stay within the limits for annual water withdrawal for Lake 31..	Noted.
2	Draft Licences - Part D: Water Use	See comment.	Board staff recommend EREX review the updates made to Part D, Condition 1 in both Licences. If corrections are required, please submit the proposed corrections through the ORS in EREX's response.	EREX will review the tables on Part D, Condition 1 of both licences for completeness and provide corrections if necessary.	Noted.

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3	Draft Licences - Part B, Condition 19 and Schedule 1, Condition 1	The current Licences include a requirement for an Annual Water Licence Report to be submitted no later than every March 31, beginning on March 31, 2023. As the Licences were not issued until January 2023, this condition should read "Beginning March 31, 2024 and no later than every March 31 thereafter...". Board staff will bring this change as an administrative update in the Licences to the Board when the Amendment Applications are presented to the Board.	For EREX's information - no Annual Report for 2022 is due this year given the Licence was not issued until January 2023.	Thank you for this information.	
Yellowknives Dene First Nation (YKDFN) - RYAN MILLER					
1	Engagement Plan - General	The YKDFN sincerely thank EREX/LiFT for the work they have done in thoroughly engaging our community and leadership. The YKDFN support EREX/Li-FT's engagement plan and the triggers that fall under the jurisdiction of crown consultation and the duty to consult.	No recommendations.	EREX/Li-FT look forward to building a strong partnership with the YKDFN	Noted.
A Member of the Public - Mr. Jerry Vanhantsaeme					
1		Hazardous Waste Storage	Large amount of fuel being stored in an area that has had wildfire activity in the past. Concern the large amount of fuel on site provides a fuel source for potential wildfire and risk to water ways for contamination if leaked or burned. Water ways lead to populated areas that utilize this water for their homes (e.g., Prelude Lake communities)	The Proponent has reviewed its fuel requirements for drilling on the BIG lease and will minimize diesel fuel on site to what is required for two days of drilling, i.e., 4 drums. The drums will be located at each of the drill sites where they can be monitored daily by drillers for leakage. If leakage occurs drillers will be in position onsite to take prompt remedial action.	Comment and Applicant's response considered for the preliminary screening. Board directive that requires EREX to update the Spill Contingency Plan with the details discussed in the Applicant's response.
2		Water ways	I do not see any consultation with the Department of Fisheries and Oceans	EREX has included DFO Yellowknife on the distribution and thanks the	Adequate response. The Board notes that DFO

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				reviewer for pointing that out.	has commented on the Amendment Applications.
3		Hazardous Waste Storage	I did not see any containment plan for the fuel on site. (e.g., spill berms and barriers)	All fuel will be stored in secondary containment as per the Spill Contingency Plan.	Adequate response.
Fisheries and Oceans Canada (DFO) - Triage Group Fisheries Protection Program					
1	EREX International LTD. Yellowknife Lithium Project - Amendment - Land A Use Permit and Type B Water Licences (MV2022C0021, MV2022L8-0008, MV2022L8-0009) - Water withdrawal for exploratory drilling, camp use, winter access roads	Your proposal has been reviewed to determine whether it is likely to result in the death of fish by means other than fishing and the harmful alteration, disruption or destruction of fish habitat which are prohibited under subsections 34.4(1) and 35(1) of the Fisheries Act; and, effects to listed aquatic species at risk, any part of their critical habitat or the residences of their individuals in a manner which is prohibited under sections 32, 33 and subsection 58(1) of the Species at Risk Act.	Please review Codes of Practices at (http://www.dfo-mpo.gc.ca/pnw-ppe/practice-pratique-eng.html) for use of End-of-Pipe Fish Screens and Ice Bridges and Snow Fills. Provided that the plans can meet the Codes of Practice guidelines and the Measures to Protect Fish and Fish Habitat (https://www.dfo-mpo.gc.ca/pnw-ppe/measures-mesures-eng.html), the Fish and Fish Habitat Protection Program (the Program) is of the view that your proposal will not require an authorization under the Fisheries Act or the Species at Risk Act. If the project is unable to comply with the Interim Codes of Practice or the Measures to Protect Fish and Fish Habitat, we recommend that the proponent submit a Request for Review (http://www.dfo-mpo.gc.ca/pnw-ppe/reviews-revues/formes/request-demand-	EREX will require drilling contractors, winter road construction contractors, and camp maintenance personnel to adhere to DFO code of practise for end of intake pipe screens to prevent the injury or death of fish from suction through water pumps to drills, water trucks, and camp water supply including core cutting saws. Proponent will require winter road construction and maintenance crews adhere to the code of practise for ice bridges and snow fills. The purpose of this code is to minimize risk to fish and fish habitat by avoiding disturbance to watercourse beds and banks; release of sediments or other deleterious substances into streams.	Adequate response.

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			eng.pdf) of the project.Should your plans change or if you have omitted some information in your proposal, further review by the Program may be required. It remains your responsibility to remain in compliance with the Fisheries Act, avoid prohibited effects on listed aquatic species at risk, any part of their critical habitat or the residences of their individuals, and prevent the introduction of non-indigenous species. It is also your Duty to Notify DFO if you have caused, or are about to cause, the death of fish by means other than fishing and/or the harmful alteration, disruption or destruction of fish habitat.		
GNWT-Lands - North Slave Region - Mr. Clint Ambrose					
1	Part A: Scope and Defined Terms - MV2022L8-0008 (Non-Federal Water License)	<p>The majority of the items detailed in the scope of the water license are regulated by the Mackenzie Valley Land Use Regulations, land use permit MV2022C0021.</p> <p>Since the schedules of the Waters Regulations do not prohibit these activities they must be removed from the scope of the water license, and captured under the land use permit, which they are.</p>	<p>Please remove the following activities from the scope of water license MV2022L8-0008 since they are all regulated by the land use permit;</p> <ul style="list-style-type: none"> a) Drilling b) Channel Sampling c) Trenching d) Use of Explosives e) Use of equipment, vehicles and machines f) Use and storage of fuel 	EREX agrees with these recommendations and thanks GNWT Lands for their advice.	The Board disagrees with the recommendation from GNWT-Lands. The purpose of the scope of the Licences is to describe which activities have been subject to Part 5 of the MVRMA and that the Licensee is entitled to conduct. Therefore, the Board has left the scope of the non-federal Licence unchanged.

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			h) Construction, operation and maintenance of camps		
2	Part D: Water Use - Ice Road/Bridge in the Water Use Table	<p>"Winter road" construction is a term best suited for "Purpose of Water Use" rather than ice road or ice bridge.</p> <p>Winter road would capture all water uses related to the main winter road as well as water used for the construction of drill access trails.</p>	Please change ice road/bridge to winter road.	EREX agrees with these recommendations and thanks GNWT Lands for their advice.	The Board agrees – see Board Decision to GNWT-ENR, comment 1.
3	Annex A: MV2022C0021 - Concordance Table of Items Requiring Submission - Administrative Update	Under the "Timeline for Submission" Column it should state "Permit" not "License".	Please change "license" to "permit".	EREX agrees with these recommendations and thanks GNWT Lands for their advice.	The Board has updated the Permit according to the comment.



April 14, 2023

Jacqueline Ho
Technical Advisor
Mackenzie Valley Land and Water Board
P.O. Box 2130 4922 - 48th Street
YELLOWKNIFE, NT X1A 2P6

Dear Jacqueline Ho,

RE: Yellowknife Lithium Project
Type B Water Licences and Type A Permit Amendment Applications

The Department of Environment and Climate Change (ECC), Government of the Northwest Territories has reviewed the application at reference based under its mandated responsibilities under the *Waters Act*. ECC has provided comments and recommendations on the Online Review System for the consideration of the Mackenzie Valley Land and Water Board at this time.

Please contact Bill Pain, Environmental Management Scientist with the Water Regulatory Group at Bill_Pain@gov.nt.ca if you have any technical questions.

Please contact GNWT_EA@gov.nt.ca with any general questions or concerns.

Sincerely,

Shakita Jensen
Regulatory Analyst
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MEMORANDUM

File:	2023-GNWT ENR
To:	Government of the Northwest Territories, Environment and Natural Resources
Attention:	Bill Pain, Environmental Scientist, Water Management and Monitoring Division
Subject:	EREX International Ltd. – Yellowknife Lithium Project RECLAIM Estimate for non-federal Water Licence (W2022L8-0008), federal water licence (W2022L8-0009) and Land Use Permit (W2022C0021) amendment application
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1.0 INTRODUCTION

ARKTIS Solutions Inc. (ARKTIS) was contracted by the Government of the Northwest Territories, Environment and Natural Resources (GNWT) to update the financial security estimate associated with EREX International Ltd. (EREX or Proponent) Land Use Permit (LUP) and non-federal and federal Water Licence (WL) amendment applications for the Yellowknife Lithium Project (Project), W2022C0021, W2022L8-0008 and W2022L8-0009.

In March 2023, ARKTIS on behalf of the GNWT completed an updated security estimate of the territorial components for the Project to help inform the Mackenzie Valley Land and Water Board's (MVLWB's) decision on determining security associated with the WL (non-federal) and LUP. A holistic reclamation cost for the Project, which included an estimate of the federal security is provided following the approach in ARKTIS' 2022 estimate to ensure that project components were not double bonded due to project design and potential overlap as well as provide consistency in comparison of update information. However, it is recognized that security recommendations associated with federal liability are the responsibility of the Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC) and therefore we defer to CIRNAC on this component of security. A review of securities proposed for the Federal component of the Project by CIRNAC was not completed for adjustments to reconcile potential common securities or to evaluate if the Federal security estimate remains valid. No recommendations to the CIRNAC security are presented for this submission. This security estimate update incorporates new data and information provided in EREX's amendment application documentation submitted on March 9, 2023.

This Memorandum presents an updated calculation of the security estimate for the closure and reclamation of the NITE, BIG, ECHO (formerly THOR), Ki, Fi, and Shorty (formerly Hi) leases, comprising the territorial leases and T-L 2 (Perlis, NT-3366) lease as well as the Hidden Lake Camp that comprise the federal component of EREX's Yellowknife Lithium Project.

The layout of this Memorandum is as follows:

- Section 2.0 – Summarizes the adjustments made to the ARKTIS RECLAIM security estimates for the Territorial and Federal portions to reflect the most current information on the Project.
- Section 3.0 – Presents the results of the ARKTIS 2023 security estimate.
- Section 4.0 – Presents a summary comparison of total site liabilities from the 2023 ARKTIS and Proponent security estimates.
- Section 5.0 – Summarizes the recommendations.
- Section 6.0 – Disclaimer and closure.

2.0 RECLAMATION SECURITY ESTIMATE UPDATE

Updates to the ARKTI RECLAIM security estimate are based on the information provided in the Proponent's amendment application documentation:

- EREX International Ltd., March 2023, Reclamation and Closure Plan (Version 1.1), Yellowknife Lithium Project.
- EREX International Ltd., March 2023, Yellowknife Lithium Project Description.
- EREX International Ltd., March 2023, Permit and Licence Application – RECLAIM Closure Cost Estimate.
- EREX International Ltd., March 2023, Waste Management Plan (Version 1.2), Yellowknife Lithium Project.
- Mackenzie Valley Land and Water Board, March 2023, EREX International Ltd., Water Licence Application Form – Non-Federal.
- Mackenzie Valley Land and Water Board, March 2023, EREX International Ltd., Water Licence Application Form – Federal.
- Mackenzie Valley Land and Water Board, January 2023, EREX International Ltd., Type A Land Use Permit, MV2022C0021.

New information clarifying the regulatory jurisdiction of each lease is presented with the current information in the updated Project Description (Table 1 – Lease Status). This new information has resulted in revising the proportion of federal and territorial liability. Specifically, it was identified in the updated Project Description that the lease NT-3366 and the Hidden Lake camp are under Federal jurisdiction while the Ki, Fi, Shorty, NITE, BIG and ECHO leases are under Territorial jurisdiction. The split between territorial and federal has been updated to reflect new information where there is a clear delineation between territorial and federal liability. Where the delineation between territorial and federal liability is unclear, such as shared reclamation equipment, the distribution of cost is assumed based on the proportion of capital costs with exception of the drill locations and interim monitoring/inspection that are split evenly (50:50) due to outstanding uncertainties. Updates to the ARKTIS RECLAIM security estimate compared to the previous ARKTIS 2022 estimate for the Territorial portion are summarized in Table 1 while Table 2 summarizes the Federal portion.

Table 1: Summary of the ARKTIS RECLAIM security estimate adjustments – Territorial Liability.

Item	Changes to Reclamation Activities	TERRITORIAL Reclamation Security		RECLAIM Worksheet
		ARKTIS Dec. 2022 RECLAIM	ARKTIS Mar. 2023 RECLAIM (Change in Security from 2022 to 2023)	
1.0 Trench reclamation	<p>The Project Description describes obtaining bulk samples from trenches, the sample weight, number of trenches, and their trench dimension. Reclamation activities of trenches are not described.</p> <p>Based on the information provided ARKTIS has added a cost for reclamation work of the trenches in this updated security estimate. Trenches are assumed to be stable and assuming reclamation activities to include demobilization and disposal of potentially acid generating waste rock, filling and levelling/grading, and revegetation. Assuming shared territorial and federal costs based on the proportion of work described on each lease (approximately 90% Territorial).</p> <p>This estimate may be updated and refined as additional information becomes available.</p>	\$0	\$307 (\$307)	UG Mine (GNWT)
2.0 Remove Buildings	The cost to remove the accommodation complex comprised of temporary structures (e.g., tents) at the campsite located on the ECHO lease has been revised to include three (3) additional Sleepers for a total of seven (7) Sleepers and one (1) kitchen tent, as indicated in the CRP.	\$6,374	\$8,112 (\$1,738)	Bldgs & Equip (GNWT)
3.0 Grade and Contour Pads	<p>Costing for grade and contour pads has been revised based on the following:</p> <ul style="list-style-type: none"> Increase in number of drill holes anticipated on territorial land leases (259 drill holes total per CRP and Table 1 Project Description). The CRP and Project Description indicate that a small number of drill holes (10% rounded, or 22 of 281 holes) are anticipated to be drilled on leases under Federal jurisdiction. The new information updates the cost to revegetate the drill pads, backfill, recontour, and stabilize the drill cutting sumps, cap drill 	\$23,117	\$65,143 (\$42,026)	Bldgs & Equip (GNWT)

Item	Changes to Reclamation Activities	TERRITORIAL Reclamation Security		RECLAIM Worksheet
		ARKTIS Dec. 2022 RECLAIM	ARKTIS Mar. 2023 RECLAIM (Change in Security from 2022 to 2023)	
	<p>holes, and the labour associated with capping drill holes.</p> <ul style="list-style-type: none"> Additional camp infrastructure based on the CRP requires revegetation. New cost based on Proponent's estimate associated with reclamation of sumps at the campsite on territorial land. The CRP indicates that sumps are filled and levelled during closure. Dimensions of sumps at camps on territorial land are based on Proponent's estimate and are similar to the sump described at the Hidden Lake camp. Without further information, ARKTIS has adopted the cost for sump reclamation at the camp on Territorial land based on the Proponent's estimate. New cost added to adopt new reclamation activity indicated in Proponent's estimate – scarify camp, building, and laydown areas. This reclamation activity appears to align with the LUP (Condition 81) which indicates that the Proponent “shall prepare the site in such a manner as to facilitate natural revegetation”. Based on this information the Proponent's project cost for this activity has been incorporated into this security estimate update <p>These changes result in an overall increase in the cost estimate.</p>			
4.0 Reclaim Roads	The cost associated with reclaiming roads has been revised to reflect the new information regarding leases located on territorial land. Number of snow fills and ice bridges are estimated based on site maps from Project Description.	\$2,000	\$5,000 (\$3,000)	Bldgs & Equip (GNWT)
5.0 Consolidation of Hazardous Materials	It is assumed an increase in the environmental technician / coordinator's time is needed based on new information that clarifies the regulatory jurisdiction of the leases. A full day was previously	\$890	\$4,310 (\$3,420)	Chemical (GNWT)

Item	Changes to Reclamation Activities	TERRITORIAL Reclamation Security		RECLAIM Worksheet
		ARKTIS Dec. 2022 RECLAIM	ARKTIS Mar. 2023 RECLAIM (Change in Security from 2022 to 2023)	
	<p>estimated to oversee the removal of residual fuel and contaminated soil from three leases (NITE, BIG, ECHO). Therefore, given the additional ground to cover the three territorial leases Fi, Ki, and Shorty, an estimate of 2 days is allocated to oversee the removal of residual fuel and contaminated soil from all six (6) leases on Territorial land.</p> <p>Furthermore, the Proponent's estimate has used the high unit cost rate and included a new line item for one additional personnel to assist the Environmental Technician / Coordinator. Without further information, ARKTIS has adopted the Proponent's approach in the estimate with revised hours previously described.</p> <p>These changes based on the available information increases the cost.</p>			
6.0 Hazardous Materials Removal	Based on the CRP, fuel barrels and other various lubricants stored on the NITE, BIG, and ECHO (Territorial) leases have decreased. The liability for hazardous materials removal has been revised to reflect the updated quantities.	\$1,091	\$1,072 (-\$19)	Chemical (GNWT)
7.0 Hazardous Material	The Proponent's estimate indicates a new line item attributed to "contaminated soil disposal" and assumed a volume of five cubic meters (5 m ³) at a unit cost of \$240 per cubic meter. This liability was evenly split between land and water. Without further information ARKTIS has adopted the Proponent's estimate and assumes this allowance is attributed to other hazardous waste generated that are not already costed (e.g., batteries, ash, or incinerator residue, etc.). Transportation costing has been accounted for in the mobilization / demobilization cost items.	\$0	\$1,200 (\$1,200)	Chemical (GNWT)
8.0 Contaminated Soils	Current information clarifies the regulatory jurisdiction of the leases (Project Description – Table 1), which indicates a significant increase in drilling located on Territorial land. Thus, ARKTIS has	\$6,505	\$11,505 (\$5,000)	Chemical (GNWT)

Item	Changes to Reclamation Activities	TERRITORIAL Reclamation Security		RECLAIM Worksheet
		ARKTIS Dec. 2022 RECLAIM	ARKTIS Mar. 2023 RECLAIM (Change in Security from 2022 to 2023)	
	<p>included an additional allowance for the Phase 1 ESA the update cost estimate corresponding to this increase in drilling on Territorial land.</p> <p>The number of soil samples reflect the number of drill locations and fuel caches on territorial land. Due to the uncertainty of the drill locations at time of abandonment (e.g., stored at Hidden Lake Camp or at the drill site), per CRP, the territorial and federal split is assumed to be 50:50 for drill locations at time of abandonment.</p>			
9.0 Contaminated Soil Removal	<p>The Proponent's security estimate indicates an increase in the anticipated volume of contaminated soil (3% of the total area) to be removed from site. Without further information ARKTIS has adopted the Proponent's estimate. Based on the Proponent's description and estimate, an excavation depth of 1 meter is assumed. Consequently, the cost for disposal has also been updated to reflect this new volume of contaminated soil. Additionally, a new cost item to contour the decontaminated area was included based on the Proponent's description and is assumed to use overburden/soil piles based on RECLAIM unit costs. Without further information, ARKTIS has updated the costing based on these new quantity estimates.</p>	\$304	\$2,727 (\$2,423)	Chemical (GNWT)
10.0 Post-closure Monitoring and Maintenance	<p>The Proponent's estimate indicates one summer inspection attributed to the Federal liability portion only. ARKTIS has assumed inspection of all sites would be included. The total number of sites is assumed to be 8 with 2 federal sites (Hidden Lake Camp and lease NT-3366) and 6 territorial sites (NITE, BIG, Ki, Fi, and Shorty leases), per Project Description. The Proponent has indicated that the inspection would take place during the summer which requires helicopter support, per Project Description. Without additional information available, ARKTIS has updated the costing for Post-closure Monitoring and Maintenance to include this cost with</p>	\$0	\$15,423 (\$15,423)	Post Closure (GNWT)

Item	Changes to Reclamation Activities	TERRITORIAL Reclamation Security		RECLAIM Worksheet
		ARKTIS Dec. 2022 RECLAIM	ARKTIS Mar. 2023 RECLAIM (Change in Security from 2022 to 2023)	
	a 75:25 split for the territorial and federal liability, respectively. Additionally, helicopter support based out of Yellowknife for the assumed eight (8) sites has been included in this updated cost estimate. This cost may be updated with further information.			
11.0 Mobilize Heavy Equipment	<p>Based on Proponent correspondence (Mar 17, '23), additional equipment (snow cat) is required for winter road construction and operation. Additionally, the reclamation program duration was updated based on estimated days to complete winter construction and reclamation activities on Territorial land. Based on current information, ARKTIS has updated the cost to reflect the new number of days and the additional equipment (snow cat).</p> <p>It is assumed equipment will be shared between the Federal and Territorial sites, therefore costing was split based on the relative proportion of territorial to federal capital costs. A similar assumption is present in the Proponent's estimate.</p> <p>As recent information has resulted in updates to capital costs, ARKTIS has updated the cost of the shared equipment accordingly. These updates increase the Territorial portion of the security estimate.</p>	\$8,097	\$9,792 (\$1,695)	Mobilization (GNWT)
12.0 Mobilize Camp	Proponent's estimate indicates a minimal requirement for the camp. Without further information and due to the use of temporary structures in the exploration camp, ARKTIS has adopted the Proponent's cost estimate.	\$0	\$4,000 (\$4,000)	Mobilization (GNWT)
13.0 Mobilize Workers	It is assumed workers (supervisors, operators, and labourers) completing reclamation activities will be shared between the Federal and Territorial sites; therefore, costing has been split based on the relative proportion of territorial to federal capital costs. Due to updates to capital costs, the costing to	\$921	\$1,117 (\$196)	Mobilization (GNWT)

Item	Changes to Reclamation Activities	TERRITORIAL Reclamation Security		RECLAIM Worksheet
		ARKTIS Dec. 2022 RECLAIM	ARKTIS Mar. 2023 RECLAIM (Change in Security from 2022 to 2023)	
	Mobilize Workers (including demobilization cost) has been updated.			
14.0 Worker Accommodations	The time to complete reclamation activities is based on the estimated amount of person days needed to complete building teardown, demobilize drill rigs, reclaim abandoned drill holes, and winter road construction. Based on recent information, the total number of person days to complete the reclamation activities has increased. This increase is primarily attributed to the increase in number of anticipated drill holes that require reclamation on Territorial land.	\$4,640	\$9,620 (\$4,980)	Mobilization (GNWT)
15.0 Mobilize Fuel	The estimated volume of fuel required to complete reclamation activities increased to correspond with the estimated time to complete the reclamation activities. With the increase in estimated fuel consumption, the cost to mobilize fuel also increased.	\$930	\$1,860 (\$930)	Mobilization (GNWT)
16.0 Winter Road	Based on current information in the Project Description, there is a cost associated with the construction and operation of the existing winter road (Thompson-Lundmark) and new winter road construction. Additionally, new information from site maps has provided clarity on the length of road located on Territorial land. Based on this new information, ARKTIS has updated the costing associated with winter road construction on Territorial land.	\$20,000	\$58,000 (\$38,000)	Mobilization (GNWT)
17.0 Demobilize Heavy Equipment	The cost to demobilize heavy equipment was revised to include additional equipment required for reclamation. Per Proponent's correspondence, an additional snow cat was required. The operations equipment was also revised to reflect the additional pieces of operations equipment present on site. The additional pieces are summarized as follows: <ul style="list-style-type: none"> • 3 water trucks • 2 snow machines • 4 pick-up trucks 	\$6,048	\$9,621 (\$3,573)	Mobilization (GNWT)

Item	Changes to Reclamation Activities	TERRITORIAL Reclamation Security		RECLAIM Worksheet
		ARKTIS Dec. 2022 RECLAIM	ARKTIS Mar. 2023 RECLAIM (Change in Security from 2022 to 2023)	
	<ul style="list-style-type: none"> 4 diesel generators <p>In addition to the change in equipment, the federal and territorial split was updated based on updates to capital costs.</p> <p>These updates increase the territorial security estimate.</p>			
18.0 Demobilize Camp	Proponent's estimate indicates a minimal requirement for the camp. Without further information, ARKTIS has adopted the Proponent's cost estimate.	\$0	\$4,000 (\$4,000)	Mobilization (GNWT)
19.0 Demobilize Waste	<p>The Proponent's estimate indicates a total of 3 (flat-bed) truck loads of waste to Yellowknife are anticipated. Without further information, ARKTIS has updated the cost to reflect the increase in anticipated waste to be demobilized. Additionally, based on the addition of Item 1.0 (Trench reclamation), a new line item for the demobilization of the potentially acid generating waste rock from the trenches as a result of the Proponent's bulk sampling program has been added in ARKTIS' estimate update.</p> <p>These updates result in an increase in cost for demobilization of waste from territorial land.</p>	\$23,967	\$28,126 (\$4,159)	Mobilization (GNWT)
20.0 Inflation	<p>Reclamation security has been updated to apply a 21.6% inflation rate (2014 to 2023) based on the most recent available inflation data.</p> <p>ARKTIS' estimate applies inflation to capital and indirect costs to address potential increases to various unit costs based on the elapsed time and to better align with more recent security estimates completed for the GNWT. The change in cost reported for inflation is primarily due to the changes in capital and indirect costs.</p>	\$21,030	\$44,507 (\$23,477)	Total

Table 2: Summary of the ARKTIS RECLAIM security estimate adjustments – Federal Liability.

Item	Changes to Reclamation Activities	FEDERAL Reclamation Security		RECLAIM Worksheet
		ARKTIS Dec. 2022 RECLAIM	ARKTIS Mar. 2023 RECLAIM (Change in Security from 2022 to 2023)	
1.0 Trench reclamation	<p>The Project Description describes obtaining bulk samples from trenches, the sample weight, number of trenches, and their trench dimension. Reclamation activities of trenches are not described.</p> <p>Based on the information provided ARKTIS has added a cost for reclamation work of the trenches after bulk sampling in this updated security estimate. Trenches are assumed to be stable and assume reclamation activities to include demobilization and disposal of potentially acid generating waste rock, filling and levelling/grading, and revegetation. Assuming shared territorial and federal cost based on the proportion of work described on each lease (approximately 10% Federal).</p> <p>This estimate may be updated as additional information becomes available.</p>	\$0	\$34 (\$34)	UG Mine (Fed)
2.0 Remove Buildings	The cost for building removal was revised based on the additional generator sheds (formerly wood structures), as indicated in the CRP.	\$23,959	\$24,957 (\$998)	Bldgs & Equip (Fed)
3.0 Grade and Contour Pads	<p>Costing for grade and contour pads has been revised based on the following:</p> <ul style="list-style-type: none"> Decrease in the number of drill holes anticipated on federal land leases (22 drill holes total per CRP and per Table 1 Project Description). The CRP and Project Description indicate that the majority of drill holes (90% rounded, or 259 of 281 holes) are anticipated to be drilled on Territorial land. The new information updates the cost to revegetate the drill pads, backfill, recontour, and stabilize the drill cutting sumps, cap drill holes, and the labour associated with capping drill holes. 	\$23,629	\$40,549 (\$16,920)	Bldgs & Equip (Fed)

Item	Changes to Reclamation Activities	FEDERAL Reclamation Security		RECLAIM Worksheet
		ARKTIS Dec. 2022 RECLAIM	ARKTIS Mar. 2023 RECLAIM (Change in Security from 2022 to 2023)	
	<ul style="list-style-type: none"> The cost to revegetate these areas has been revised to reflect the additional structures (Item 2.0).and based on new information provided in the Proponent's estimate. The new information includes an increase in the required area for revegetation from 20% to 50% and the additional revegetation of Storage Facilities at the Hidden Lake Camp on federal land. New cost based on Proponent's estimate associated with reclamation of sumps at the Hidden Lake campsite. The CRP indicates that sumps are filled and levelled during closure. Dimensions of these two sumps are described in the Waste Management Plan. Based on this information, ARKTIS has incorporated the cost for sump reclamation at the Hidden Lake campsite on federal land. New cost added to adopt new reclamation activity indicated in Proponent's estimate – scarify camp, building, and laydown areas. This reclamation activity appears to align with the LUP (Condition 81) which indicates that the Proponent “shall prepare the site in such a manner as to facilitate natural revegetation”. Based on this information the Proponent's project cost for this activity has been incorporated into this security estimate update <p>The overall net change based on these revisions is an increase in cost.</p>			
4.0 Reclaim Roads	The cost associated with reclaiming winter roads has been revised to reflect the winter road length on Federal land based on current information. Based on site maps for the length of road on Federal land, the number of anticipated portages has decreased.	\$3,000	\$500 (-\$2,500)	Bldgs & Equip (Fed)

Item	Changes to Reclamation Activities	FEDERAL Reclamation Security		RECLAIM Worksheet
		ARKTIS Dec. 2022 RECLAIM	ARKTIS Mar. 2023 RECLAIM (Change in Security from 2022 to 2023)	
	Therefore, based on this information ARKTIS has updated the costing in this RECLAIM estimate.			
5.0 Consolidation of Hazardous Material	Based on the Proponent's estimate, the RECLAIM high unit cost rate was used and a new line item was added for one (1) additional personnel to assist the Environmental Technician / Coordinator. Without further information, ARKTIS has adopted the Proponent's cost estimate which results in an increase in cost.	\$890	\$2,155 (\$1,265)	Chemical (Fed)
6.0 Hazardous Materials Removal	The cost for removal of waste fuel stored at the Hidden Lake Camp was updated to reflect the increase in fuel on-site from 20,000 L to 25,000 L. It is noted that the Proponent has included an additional cost for removal of 36 barrels of waste fuel (assuming 10% remaining) which would exceed the maximum fuel allowance on site, per Licence application.	\$8,597	\$10,397 (\$1,800)	Chemical (Fed)
7.0 Hazardous Material	The Proponent's estimate indicates a new line item attributed to the disposal of five cubic meters (5m ³) of hazardous waste offsite at a tipping fee of \$240 per cubic meter. Without further information available, ARKTIS has adopted the Proponent's estimate. Demobilization of this waste to the offsite location is addressed in the Mobilization worksheet.	\$0	\$1,200 (\$1,200)	Chemical (Fed)
8.0 Contaminated Soils	Based on recent information in the Proponent's amendment application, the number of soil samples to support the Phase 1 ESA was updated to reduce the number of samples on federal land. However, the overall increase in cost is due to the application of the RECLAIM unit cost for a Phase 1 ESA as indicated in the Proponent's estimate.	\$6,290	\$8,790 (\$2,500)	Chemical (Fed)
9.0 Contaminated Soil Removal	The Proponent's estimate indicates an update to the quantity of contaminated soil anticipated on federal land. ARKTIS has therefore updated the costing	\$304	\$8,388 (\$8,084)	Chemical (Fed)

Item	Changes to Reclamation Activities	FEDERAL Reclamation Security		RECLAIM Worksheet
		ARKTIS Dec. 2022 RECLAIM	ARKTIS Mar. 2023 RECLAIM (Change in Security from 2022 to 2023)	
	<p>attributed to decontaminating and contouring the area based on the Proponent's information. ARKTIS has assumed that the updated volume encompasses the 1 m³ described in the Waste Management Plan.</p> <p>The increase in contaminated soil and additional contouring activity result in an increase in cost.</p>			
10.0 Post-closure Monitoring and Maintenance	<p>The Proponent's estimate indicates a summer inspection that is attributed to the Federal liability portion only. ARKTIS has assumed inspection of all sites would be included. The total number of sites is assumed to be 8 with 2 federal sites (Hidden Lake Camp and lease NT-3366) and 6 territorial sites (NITE, BIG, Ki, Fi, and Shorty leases), per Project Description. The Proponent has indicated that the inspection would take place during the summer which requires helicopter support, per Project Description. Without additional information available, ARKTIS has updated the costing for Post-closure Monitoring and Maintenance to include this cost with a 75:25 split for the territorial and federal liability, respectively. Additionally, helicopter support based out of Yellowknife for the assumed eight (8) sites has been included in the updated cost estimate.</p>	\$0	\$5,141 (\$5,141)	Post Closure (Fed)
11.0 Mobilize Heavy Equipment	<p>Based on Proponent correspondence (Mar 17, '23), new equipment for reclamation activities (snow cat) was required. Additionally, the duration to complete reclamation activities on federal land was updated based on estimated duration of activities from current information. ARKTIS has updated the cost to reflect these changes.</p> <p>It is assumed equipment will be shared between the Federal and Territorial sites; therefore, costing was split based on the relative proportion of territorial to federal capital costs. A similar assumption is present in the Proponent's estimate.</p>	\$10,000	\$5,849 (- \$4,151)	Mobilization (Fed)

Item	Changes to Reclamation Activities	FEDERAL Reclamation Security		RECLAIM Worksheet
		ARKTIS Dec. 2022 RECLAIM	ARKTIS Mar. 2023 RECLAIM (Change in Security from 2022 to 2023)	
	These updates result in a decrease in the federal portion of the security estimate.			
12.0 Mobilize Camp	Proponent's estimate indicates a minimal requirement for the camp. Without further information and due to the use of temporary structures in the exploration camp, ARKTIS has adopted the Proponent's cost estimate.	\$0	\$4,000 (\$4,000)	Mobilization (Fed)
13.0 Mobilize Workers	It is assumed workers (supervisors, operators, and labourers) completing reclamation activities will be shared between the Federal and Territorial sites; therefore, costing has been split based on the relative proportion of territorial to federal capital costs. As a result of updated capital costs, the cost of the shared worker mobilization and demobilization has been updated.	\$1,239	\$1,043 (-\$196)	Mobilization (Fed)
14.0 Worker Accommodations	Person days needed to complete reclamation activities are based on the estimated amount of building teardown, demobilize drill rigs, reclaiming abandoned drill holes, and winter road construction. Based on recent information, the total number of person days to complete the reclamation activities has decreased to 39.9 days total due to the decrease in number of anticipated drill holes on federal land.	\$5,810	\$3,570 (-\$2,240)	Mobilization (Fed)
15.0 Mobilize Fuel	The estimated volume of fuel required to complete reclamation activities was updated to correspond with the revised estimate for the duration of reclamation activities. Although the volumetric amount of fuel decreased, the amount remained within the freight capacity of the flat-bed trucks for mobilization. Thus, there was no change in cost.	\$930	\$930 (no change)	Mobilization (Fed)
16.0 Winter Road Construction and Operation	The cost to construct and operate the winter road situated on federal land was updated based on new site maps clarifying federal and territorial land designation. Based on the current information, ARKTIS has updated the cost estimate for the winter road construction and maintenance on federal land.	\$30,000	\$9,400 (-\$20,600)	Mobilization (Fed)

Item	Changes to Reclamation Activities	FEDERAL Reclamation Security		RECLAIM Worksheet
		ARKTIS Dec. 2022 RECLAIM	ARKTIS Mar. 2023 RECLAIM (Change in Security from 2022 to 2023)	
17.0 Demobilize Heavy Equipment	<p>The cost to demobilize heavy equipment was revised to include additional equipment required for reclamation. It was noted in the Proponent's correspondence (item 11) that an additional snow cat was required. Demobilization of operations equipment was also revised to reflect the additional pieces of equipment present on-site based on the CRP. The additional pieces are summarized as follows:</p> <ul style="list-style-type: none"> • 3 water trucks • 2 snow machines • 4 pick-up trucks • 4 diesel generators <p>In addition to the change in pieces of equipment, the federal and territorial split was updated based on updates to capital costs.</p> <p>Overall, these updates increase the federal security estimate portion.</p>	\$8,134	\$9,652 (\$1,518)	Mobilization (Fed)
18.0 Demobilize Camp	Proponent's estimate indicates a minimal requirement for the camp. Due to the use of temporary structures in the exploration camp, ARKTIS has adopted the Proponent's cost estimate.	\$0	\$4,000 (\$4,000)	Mobilization (Fed)
19.0 Demobilize Waste	<p>The cost to demobilize waste offsite was updated based on new information presented in the Proponent's estimate. The Proponent's estimate indicates an update to the total number of truckloads (2 to 3) to be transported to Yellowknife and the anticipated amount of solid waste (40 tonnes) from federal lands. Based on the assumed capacity of the trucks it is assumed that the truckloads are allocated to demobilize 1) waste, 2) hazardous waste, and 3) contaminated soil. Without further information available ARKTIS has updated the cost to reflect the new information provided for waste demobilization. The tipping fees have also been updated to reflect current rates (as of January 2023).</p>	\$17,910	\$11,053 (- \$6,857)	Mobilization (Fed)

Item	Changes to Reclamation Activities	FEDERAL Reclamation Security		RECLAIM Worksheet
		ARKTIS Dec. 2022 RECLAIM	ARKTIS Mar. 2023 RECLAIM (Change in Security from 2022 to 2023)	
	<p>Additionally, in concordance with the addition of Item 1.0 (Trench reclamation), a new line item for the demobilization of the potentially acid generating (PAG) waste rock possibly generated from the trenches in the Proponent's bulk sampling program has been added in ARKTIS' updated estimate. The federal liability portion is based on the proportion of work anticipated to take place on federal (approximately 10%) and territorial (approximately 90%) lands.</p> <p>The net change based on these revisions is a decrease in the cost to demobilize waste from federal land.</p>			
20.0 Inflation	<p>Reclamation security has been updated to apply a 21.6% inflation rate based on the most recent available data.</p> <p>ARKTIS' estimate applies inflation to capital and indirect costs to address potential increases to various unit costs based on the elapsed time and to better align with more recent security estimates completed for the GNWT. The change in cost reported for inflation is primarily due to the changes in capital and indirect costs.</p>	\$28,509	\$29,117 (\$608)	Total

3.0 RESULTS OF RECLAIM SECURITY UPDATE

Table 3 provides a summary of the updated ARKTIS 2023 financial security estimate to the previous ARKTIS 2022 estimate. The RECLAIM v7 output sheets are provided in Appendix A.

Table 3: Summary of total reclamation security.

Capital Costs	Total Costs		Notes
	ARKTIS' 2022, Estimate	ARKTIS' March 2023 Estimate	
Underground mine	\$0	\$341	Increase of \$341, see Table 1 and Table 2, line item 1
Buildings and equipment	\$110,395	\$172,577	Increase of \$62,182, see Table 1 and Table 2, line items 2, 3, and 4.
Chemicals and contaminated soil management	\$24,871	\$51,745	Increase of \$21,874, see Table 1 and Table 2, line items 5, 6, 7, 8, and 9.
Interim care and maintenance	\$5,0000	\$5,000	
Inflation (21.6%) mobilization / demobilization and post-closure monitoring and maintenance	\$26,173	\$42,561	Increase of \$16,388, see Table 1 line item 20, and Table 2 line item 20.
SUBTOTAL: Capital Costs	\$166,440	\$272,224	
Indirect Costs	Total Costs		
Mobilization/demobilization	\$138,094	\$175,663	Increase of \$37,569, see Table 1 line items 11 through 19, and Table 2 line items 11 through 19.
Post-closure monitoring and maintenance	\$0	\$20,564	Increase of \$20,564, see Table 1 and Table 2, line items 10.
Engineering (5%)	\$8,322	\$13,611	These indirect costs are calculated as a percentage of the capital cost. The capital costs differ between the estimates and therefore these indirect costs are different.
Project management (5%)	\$8,322	\$13,611	
Health and safety plans / monitoring and quality assurance / quality control (1%)	\$1,664	\$2,722	
Bonding / Insurance (1%)	\$1,664	\$2,722	
Contingency (20%) – applied to capital cost, mobilization / demobilization, post-closure monitoring and maintenance and inflation	\$65,557	\$99,897	
Market price factor adjustment (0%)	\$0	\$0	
Inflation (21.6%) mobilization / demobilization and post-closure monitoring and maintenance	\$23,249	\$31,064	Increase of \$7,815, see Table 1 line item 20, and Table 2 line item 20.
SUBTOTAL: Indirect Costs	\$246,872	\$359,824	
TOTAL COSTS	\$413,312	\$632,048	

4.0 COMPARISON TO PROPONENT'S RECLAIM SECURITY ESTIMATE

A summary of ARKTIS' updated 2023 financial security estimate for the Project with a comparison to the Proponent's 2023 security estimate is provided in Table 4 for the Territorial portion and Table 5 for the Federal portion. Notes detailing the cause for differences between estimates are also provided in the tables. Appendix A provides the RECLAIM output sheets that contain the detailed calculations.

Table 4: Comparison of total territorial liabilities for the Yellowknife Lithium Project

Capital Costs	Territorial Total Costs		Notes
	EREX's March 9, 2023, Estimate	ARKTIS' March 2023 Estimate	
Underground mine	\$0	\$307	Increase of \$307 is attributed to the reclamation of trenches (fill, grade, and revegetate) from the bulk sampling program.
Buildings and equipment	\$54,266	\$96,051	<p>Increase of \$41,785 is due to computational errors in the Proponent's RECLAIM file. The Proponent had mistakenly duplicated the Federal liability portion.</p> <p>Apart from the computational errors, the main cost contributors to the increase in security are attributed to the significant increase in number of drill holes on territorial land and the addition of the reclamation activity to scarify the laydown areas at the Hidden Lake Camp which the Proponent had included in their Territorial tab. Additional contributors include additional temporary structures, estimated quantities for reclamation activities indicated by the proponent, and length of winter road on territorial land.</p>
Chemicals and contaminated soil management	\$9,731	\$20,814	Increase of \$11,083 primarily due to the disposal fee of excavated contaminated soil. The proponent's estimate indicates the excavation of contaminated soil as well as contouring of the decontaminated site but excluded the disposal of the contaminated soil. Another contributor to the cost increase is an additional unit for Phase 1 ESA at the Proponent's unit cost in correspondence with the increase in work on territorial land. Other contributors to the increase include differences in estimated person hours for consolidation of hazardous materials, waste fuel disposal, and number of soil sampling for the Phase 1 ESA.
Interim care and maintenance	\$2,500	\$2,500	
Inflation (21.6%)	N/A	\$21,138	Increase of \$21,138 due to inflation and updates to capital costs. EREX's estimate total excludes inflation.
SUBTOTAL: Capital Costs	\$77,559	\$140,811	It is noted that there are errors in EREX's RECLAIM file and the difference in subtotals between estimates here is misaligned with the total of differences in cost of the preceding items above.

Capital Costs	Territorial Total Costs		Notes
	EREX's March 9, 2023, Estimate	ARKTIS' March 2023 Estimate	
Indirect Costs	Territorial Total Costs		
Mobilization/demobilization	\$51,218	\$126,136	Increase of \$74,918 is primarily due to differences in the quantity of estimated waste demobilized from territorial land, demobilization of waste from ECHO lease via helicopter, demobilizing operations equipment from site, and estimated additional person days to complete reclamation activities (i.e., drill holes on territorial land). Finally, another contributor to the increase in security cost is a result of changes in capital cost above that increased the territorial proportion of shared liability items (e.g., reclamation equipment).
Post-closure monitoring and maintenance	\$0	\$15,423	Increase of \$15,423 due to the assumed territorial and federal split of 75:25 of the summer post-closure monitoring and maintenance cost indicated in the Proponent's estimate. In contrast, the cost for the post-closure summer inspection was fully allocated to the Federal liability in the Proponent's estimate. An additional contributor to the increase in cost is the helicopter support needed during the summer inspection, per Project Description and CRP. The cost of helicopter support was excluded in the Proponents' estimate.
Engineering (5%)	\$3,878	\$7,041	These indirect costs are calculated as a percentage of the capital cost. The capital costs differ between the estimates and therefore these indirect costs are different.
Project management (5%)	\$3,878	\$7,041	
Health and safety plans / monitoring and quality assurance / quality control (1%)	\$776	\$1,408	
Bonding / Insurance (1%)	\$776	\$1,408	
Contingency (15% vs 20%)	\$11,634	\$61,148	Increase of \$49,514 due to updates to capital costs described above and the difference in contingency percentage used (20% vs 15%).
Market price factor adjustment (0%)	\$0	\$0	
Inflation (21.8% vs 21.6%)	N/A	\$23,369	Increase of \$23,369 due to inflation and updates to mob/demob and new inspection post-closure. EREX's estimate excludes inflation.
SUBTOTAL: Indirect Costs	\$72,159	\$242,973	
TOTAL COSTS	\$149,719	\$383,784	

Table 5: Comparison of total federal liabilities for the Yellowknife Lithium Project

Capital Costs	Federal Total Costs		Notes
	EREX's March 9, 2023, Estimate	ARKTIS' March 2023 Estimate	
Underground mine	\$0	\$34	Increase of \$34 is attributed to the reclamation of trenches (fill, grade, and revegetate) from the bulk sampling program. This is the federal proportion based on the proportion of drill holes anticipated on federal and territorial land.
Buildings and equipment	\$54,266	\$76,526	Increase of \$22,260 is due to increase in building infrastructure quantities indicated in the CRP that were excluded in the Proponent's estimate, differences in estimated quantities for reclamation activities between ARKTIS' and the Proponents' estimate, and updated reclamation activities. A primary contributor was based on the Proponent's approach to scarifying and revegetating the camp and laydown areas which the Proponent had misplaced under the Territorial tab, based on the described area, and estimated footprint. Other contributors include updates to the number of drill holes on federal land, number of generator shacks on site, reclamation of sumps on site, and reclamation of winter road based on current information that were typically higher than the quantities included in the Proponent's estimate. It is noted that EREX's estimate includes the demobilization of operational equipment in this category (tab) instead of the mob/demob category.
Chemicals and contaminated soil management	\$27,300	\$30,930	Increase of \$3,630 is due to the disposal fee associated with the excavated contaminated soil. EREX's estimate includes the excavation and contouring activities to remove and reclaim the contaminated area but excludes the disposal of the contaminated soil.
Interim care and maintenance	\$2,500	\$2,500	
Inflation (21.8% vs 21.6%)	N/A	\$21,423	Increase of \$21,423 due to inflation and updates to mob/demob and post-closure inspection. EREX's estimated total excludes inflation.
SUBTOTAL: Capital Costs	\$84,066	\$131,413	
Indirect Costs	Federal Total Costs		
Mobilization/demobilization	\$55,369	\$49,497	Decrease of \$5,872 due to decrease in the number of light duty truck rentals and decrease in estimated person days to complete reclamation activities resulting from the decrease in the number of drill holes and other reclamation activities located on federal land. Another contributing factor to the decrease in mob/demob cost is a result of the updated proportion of capital costs used to estimate the proportion of shared cost items.
Post-closure monitoring and maintenance	\$5,000	\$5,141	Increase in \$141 due to additional cost for helicopter support for the summer inspection post-closure and the territorial/federal split of 75:25, respectively. The territorial/federal split is based on

Capital Costs	Federal Total Costs		Notes
	EREX's March 9, 2023, Estimate	ARKTIS' March 2023 Estimate	
			the assumed number of inspection sites located on federal and territorial land.
Engineering (5%)	\$4,203	\$6,571	These indirect costs are calculated as a percentage of the capital cost. The capital costs differ between the estimates and therefore these indirect costs are different.
Project management (5%)	\$4,203	\$6,571	
Health and safety plans / monitoring and quality assurance / quality control (1%)	\$841	\$1,314	
Bonding / Insurance (1%)	\$841	\$1,314	
Contingency (15% vs. 20%)	\$22,429	\$38,749	Increase of \$16,320 due to updates to capital costs described above and the difference in contingency percentage used (ARKTIS' 20% vs EREX's 15%).
Market price factor adjustment (0%)	\$0	\$0	
Inflation (21.6%)	N/A	\$7,695	Increase \$7,695 due to inflation applied to updates to mob/demob and post-closure costs noted above. EREX's estimate has not applied inflation.
SUBTOTAL: Indirect Costs	\$92,886	\$116,851	
TOTAL COSTS	\$176,952	\$248,264	

5.0 RECOMMENDATIONS

This RECLAIM security estimate update calculates the portion of security that is applicable to Federal and Territorial land and water liabilities. It is recommended that the security be held under the appropriate instrument (e.g., land use permit, water licence, etc.). The total reclamation security and recommended Federal/Territorial land and water portions as presented by ARKTIS' and EREX's estimate is provided in Table 6 for a direct cost comparison.

Table 6. Summary of reclamation security.

Estimate	Total Costs	Total Land Liability	Total Water Liability	Territorial Land Liability	Territorial Water Liability	Federal Land Liability	Federal Water Liability
ARKTIS	\$632,048	\$441,094	\$190,954	\$238,419	\$145,365	\$202,675	\$45,589
EREX	\$326,671	\$264,093	\$62,578	\$117,490	\$32,229	\$146,603	\$30,349
Difference	\$305,377	\$177,001	\$128,376	\$120,929	\$113,136	\$56,072	\$15,240

ARKTIS' 2023 estimate update reflects current information provided in the amendment application documentation lists in Section 1 and EREX's correspondence on March 17, 2023. It is noted that EREX's RECLAIM estimate contains items of not such as the exclusion of inflation in the total costs, mistakes in cell references or calculations, and discrepancies in quantities from values indicated in the CRP, Project Description, and/or other cost items within the RECLAIM estimate.

Additional information from EREX's amendment application and correspondence has addressed some uncertainties identified in ARKTIS' 2022 review and RECLAIM estimate. Where applicable, the new data and information have been incorporated in this RECLAIM security estimate update. Additional information and details for further consideration and/or to be provided by EREX to further refine the reclamation security estimate and address outstanding uncertainties include without limitation:

Underground Mine

1. Description of closure and reclamation activities anticipated for the trenches. Include an estimate for the quantity of potential PAG waste rock that may require off-site disposal.

Buildings & Equipment

1. The number of drill pads/holes requiring remediation on Federal and Territorial leases for the 2023-24 program has been provided in the CRP however it is uncertain whether these numbers are representative of the annual average. The distribution of drill holes located on federal and territorial land has been used to inform the cost split of select items in the RECLAIM security estimate. Since the distribution and number of drill holes may vary in future years of mineral exploration, the proportion of Federal and Territorial costs allocated to these components may also change. Further information detailing the anticipated number of drill holes on Federal and Territorial leases on an annual basis for the duration of the program may further refine the cost split for the security estimate.
2. Some additional clarification regarding the length of winter road portages on Federal and Territorial leases was provided in correspondence and has been incorporated in updating the RECLAIM estimate. However, it is unclear whether EREX is responsible for construction and operation of the Thompson-Lundmark winter road or section of the winter road. The number of ice bridges crossing streams and creeks also remains uncertain.
 - a. Length of the existing Thompson-Lundmark winter road for which EREX is required to complete construction and operation.
 - b. Estimated number of ice bridges crossing streams/creeks on Federal and Territorial leases that will require reclamation (i.e., V-notching).
3. Identify all areas that require reclamation and describe the closure and reclamation activities anticipated for these areas (e.g., scarification, seeding, regrading, etc.). Include estimated quantities or map(s) providing a clear delineation of areas and the reclamation activities to occur.
4. The drilling programs described in the Project Description indicate variability in drill location between federal and territorial land such as during the transition between the Spring-Summer and Winter Programs. Due to the variability in drill location, there is uncertainty of drill location at the time of abandonment which may affect the Federal/Territorial cost split for drill removal. Presently, the cost split is assumed to be 50:50, however further information detailing the locations of all drills throughout the year may further refine the cost split for the security estimate.

Interim and Post-Closure Monitoring and Maintenance

1. Describe the interim monitoring/inspection locations and duration.
2. Describe the post-closure monitoring/inspection locations and duration.

Mobilization/Demobilization

1. An estimate of 21 days was indicated by EREX as the duration of the anticipated reclamation program however, specific details on the reclamation activities required to be completed within the program and their timelines are unclear.

- a. Provide a detailed schedule for all closure and reclamation activities, including equipment requirements associated with these activities, and the crew and time requirements to complete the activities.
 - b. Estimate fuel requirements to support, sustain, and complete the reclamation activities on Federal and Territorial land.
2. Confirm the disposal location and all applicable fees associated with the types of waste for off-site disposal. It is noted that the Waste Management Plan (v1.2) did not include attachments in Appendix A.

6.0 DISCLAIMER AND CLOSURE

ARKTIS Solutions Inc. assumes no responsibility for inappropriate use of the contents of this report and disclaims all liability arising from negligence or otherwise in respect of such information and recommendations presented in this report. General terms and conditions are available in Appendix B.

ARKTIS SOLUTIONS INC.

Jun-tian Zhang, Ph.D., EIT	Drew Stavinga, M.Sc., P.Geo. Professional Geoscientist	Jamie Van Gulck, Ph.D., P.Eng. Chief Technical Officer
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APPENDIX A – RECLAIM OUTPUTS

SUMMARY OF COSTS

CAPITAL COSTS	COMPONENT NAME	COST	TOTAL TERRITORIAL COST	Territorial Land Liability	Territorial Water Liability	TOTAL FEDERAL COST	Federal Land Liability	Federal Water Liability	Source of Information	Comparison to Proponent's Security
UNDERGROUND MINE		\$341	\$307	\$307	\$0	\$34	\$34	\$0	Reclamation of bulk sampling program based on \$0 assumed activities.	Not included in Proponent's estimate.
ROCK PILE		\$0	\$0	\$0	\$0	\$0	\$0	\$0		
BUILDINGS AND EQUIPMENT		\$172,577	\$96,051	\$63,363	\$32,689	\$76,526	\$73,482	\$3,043		Proponent has referenced the FED value twice in the total cost for this item. Discrepancies between description for line items and CRP/ Project Description (see Bldgs. & Equip Tabs). E.g., number holes, additional buildings
CHEMICALS AND CONTAMINATED SOIL MANAGEMENT		\$51,745	\$20,814	\$10,424	\$10,390	\$30,930	\$15,465	\$15,465		
SURFACE AND GROUNDWATER MANAGEMENT		\$0	\$0	-	\$0	\$0	-	\$0		
INTERIM CARE AND MAINTENANCE		\$5,000	\$2,500	-	\$2,500	\$2,500	-	\$2,500		
INFLATION (2014 to 2023) ON CAPITAL COSTS	21.6%	\$42,561	\$21,138	\$13,383	\$7,756	\$21,423	\$18,300	\$3,123		Inflation is not applied in the total estimate values.
SUBTOTAL: Capital Costs		\$272,224	\$140,811	\$87,476	\$53,335	\$131,413	\$107,281	\$24,132		
PERCENT OF SUBTOTAL			52%	62%	38%	48%	82%	18%		
INDIRECT COSTS		COST	TOTAL TERRITORIAL COST	Territorial Land Liability	Territorial Water Liability	TOTAL FEDERAL COST	Federal Land Liability	Federal Water Liability		
MOBILIZATION/DEMOBILIZATION		\$175,633	\$126,136	\$78,360	\$47,776	\$49,497	\$40,408	\$9,089		includes inspection allowance of \$5000 total under federal tab. Excludes terrified split. Excludes helicopter/air support for the summer inspection.
POST-CLOSURE MONITORING AND MAINTENANCE		\$20,564	\$15,423	\$9,581	\$5,842	\$5,141	\$4,197	\$944		
ENGINEERING	5%	\$13,611	\$7,041	\$4,374	\$2,667	\$6,571	\$5,364	\$1,207		
PROJECT MANAGEMENT	5%	\$13,611	\$7,041	\$4,374	\$2,667	\$6,571	\$5,364	\$1,207		
HEALTH AND SAFETY PLANS/MONITORING & QA/QC	1%	\$2,722	\$1,408	\$875	\$533	\$1,314	\$1,073	\$241		
BONDING/INSURANCE	1%	\$2,722	\$1,408	\$875	\$533	\$1,314	\$1,073	\$241		
CONTINGENCY	20%	\$99,897	\$61,148	\$37,987	\$23,161	\$38,749	\$31,634	\$7,116	Includes a 20% contingency, applied to capital costs, mob/demob, post-closure and inflation costs. Follows RECLAIM manual	Based on RECLAIM Manual (2017, Mining). 15% is used if there is "Little detailed engineering and costs based upon verbal quote". Presently, it is unclear whether any detailed engineering and cost quotes have been provided.
MARKET PRICE FACTOR ADJUSTMENT	0%	\$0	\$0	\$0	\$0	\$0	\$0	\$0		
INFLATION (2014 to 2023)	21.6%	\$31,064	\$23,369	\$14,518	\$8,851	\$7,695	\$6,282	\$1,413	Inflation update to Jan 2023	Inflation was excluded
SUBTOTAL: Indirect Costs		\$359,824	\$242,973	\$150,942	\$92,031	\$116,851	\$95,394	\$21,458		
TOTAL COSTS		\$632,048	\$383,784	\$238,419	\$145,365	\$248,264	\$202,675	\$45,589		

Statistics Canada inflation rate for YK from January 2014 (Consumer Price Index 127.0) to 154.4 Jan 2023 for inflation of 21.6%.
(<https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=1810000401>)

TERRITORIAL RECLAIM OUTPUTS

Underground Mine Name				UG Mine # 1								
ACTIVITY/MATERIAL	Notes	Unit	Qty	Code	Unit Cost	Cost %	Land	Land Cost	Water Cost	Source of Information	Comparison to Proponent's Security	Information Requested from Proponent
CONTROL ACCESS												
Fence		m		#N/A	\$0.00	\$0		\$0	\$0			
Signs		each		#N/A	\$0.00	\$0		\$0	\$0			
Block roads		m3		#N/A	\$0.00	\$0		\$0	\$0			
Berm		m3		#N/A	\$0.00	\$0		\$0	\$0			
Concrete wall in portals		m3		#N/A	\$0.00	\$0		\$0	\$0			
Trench stabilization/grade	Assume as-constructed long-term stable.	m3	0	#N/A	\$0.00	\$0		\$0	\$0	Assume as-constructed bulk sample trench is long-term stable.	Not included in proponent's estimate	
										Based on Project Description, up to 10 tonnes of rock may be broken out of 10 trenches where each sample would weigh up to one tonne. Assume 50% waste rock from bulk sample (5 tonnes) is PAG and requires removal from site at closure. Assume disposal location for PAG waste rock located in Alberta. It is assumed all bulk sample has already been removed from site. Tipping fee assumed based on reasonable tipping fees for metal contaminated soil in Alberta, Tipping fee is adjusted for inflation from Feb '22. Transportation off-site is included under Demobilize Waste in the Mobilization tab. Assume 90% Terr; 10% Fed. based on drill holes per terrifed lease. Applies inflation from 2022 to Jan 2023. Territorial cost reported only	Not included in proponent's estimate	Confirm the estimated quantity of PAG waste rock generated from the bulk sampling program
Waste rock disposal fee	Tipping fee of \$30./tonne	tonne	5	#N/A	\$30.00	\$135	100%	\$135	\$0	\$5		
										Trench dimensions are trenches are approx. 2.5 m long, 0.5 m deep and 0.3 m wide per Project Description. Assume trenches to be filled and leveled. Total cost reported.	Not included in proponent's estimate	
Replace top soil cover	Assume fill and levelgrade trench area.	m3	37.5	SB3L	\$5.10	\$172	100%	\$172	\$0	\$37		Confirm reclamation activity of trenches
										Assume 90% Terr; 10% Fed. based on drill holes per terrifed lease. Territorial cost reported only	Not included in proponent's estimate	
Revegetate trench area	Assume trench area is revegetated.	ha		#N/A	\$0.00	\$0		\$0	\$0	\$0		Confirm reclamation activity of trenches
Backfill Portal		m3		#N/A	\$0.00	\$0		\$0	\$0			
Backfill Portal		m3		#N/A	\$0.00	\$0		\$0	\$0			
Cap raise # 1		m3		#N/A	\$0.00	\$0		\$0	\$0			
Cap raise #2		m3		#N/A	\$0.00	\$0		\$0	\$0			
Cap shaft #1		m3		#N/A	\$0.00	\$0		\$0	\$0			
Cap shaft #2		m3		#N/A	\$0.00	\$0		\$0	\$0			
Backfill adits		m3		#N/A	\$0.00	\$0		\$0	\$0			
Backfill open slope		m3		#N/A	\$0.00	\$0		\$0	\$0			
Concrete cap over open slope		m3		#N/A	\$0.00	\$0		\$0	\$0			
Other				#N/A	\$0.00	\$0		\$0	\$0			
REMOVE HAZARDOUS MATERIALS												
Remove hazardous materials, U/G labor		mandays		#N/A	\$0.00	\$0		\$0	\$0			
Remove/decontam. stationary & elect. equip		mandays		#N/A	\$0.00	\$0		\$0	\$0			
Remove/decontam. mobile equipment		each		#N/A	\$0.00	\$0		\$0	\$0			
Remove misc. haz. mat & explosives		kg		#N/A	\$0.00	\$0		\$0	\$0			
Other				#N/A	\$0.00	\$0		\$0	\$0			
INSTALL BULKHEADS												
Bulkheads to control water flow		each		#N/A	\$0.00	\$0		\$0	\$0			
Grout bulkhead		m3		#N/A	\$0.00	\$0		\$0	\$0			
FLOOD MINE												
Supply/install pump		each		#N/A	\$0.00	\$0		\$0	\$0			
Supply/install piping system		each		#N/A	\$0.00	\$0		\$0	\$0			
Operate pumps to flood workings		m3		#N/A	\$0.00	\$0		\$0	\$0			
Other				#N/A	\$0.00	\$0		\$0	\$0			
INSTALL GROUNDWATER COLLECTION SYSTEM												
Excavate/install sumps		m2		#N/A	\$0.00	\$0		\$0	\$0			
Install pumping wells		m3		#N/A	\$0.00	\$0		\$0	\$0			
Install pumps/pipelines/power supply		LS		#N/A	\$0.00	\$0		\$0	\$0			
SPECIALIZED ITEMS												
Install water quality monitoring pipes		personhours		#N/A	\$0.00	\$0		\$0	\$0			
Install permanent pumping system		each		#N/A	\$0.00	\$0		\$0	\$0			
Other				#N/A	\$0.00	\$0		\$0	\$0			
					Total	\$307		\$307	\$0			
					% of Total			100%	0%			

1 Building / Equip Name:		Bldg / Equip #: 1												
ACTIVITY/MATERIAL	Notes	Units	Quantity	Cost Code	Unit Cost	Cost	Land	Land Cost	Water Cost	Inflation	Source of Information	Comparison to Proponent's Security	Information Requested from Proponent	
DISPOSE MOBILE EQUIPMENT														
Decontaminate and ship off-site		allow		#N/A	\$0.00	\$0		\$0	\$0					
Decontaminate and dispose on-site		allow		#N/A	\$0.00	\$0		\$0	\$0					
Drill removal - supervisor labour	NITE&BIG lease: 2 drills. 1 supervisor. 5 hrs/drill to demob to Yellowknife.	personhrs	10	SuperI	\$52.00	\$520	100%	\$520	\$0		\$112 Assume 1 drill per lease (NITE, BIG) based on CRP. Assume approx. 5 hrs per drill to pack up and remove to Yellowknife. Assume 1 supervisor to oversee work.	Included into Proponent's estimate		
Drill removal - drill crew labour	NITE&BIG lease: 2 drills. Drill crew of 4. 5 hrs/drill to demob to Yellowknife.	personhrs	40	lab-sl	\$41.00	\$1,640	100%	\$1,640	\$0		\$354 Assume 1 drill per lease (NITE, BIG) based on CRP. Assume approx. 5 hrs per drill to pack up and remove to Yellowknife, 4 person drill crew, based on Proponent's estimate ("Assumes 2.5 days total, by 4 person crew for 7 drills total. Uses project specific unit cost. No terr/fed split provided.").	Included into Proponent's estimate		
Drill removal - Hiab	NITE&BIG lease: 2 drills. 2 loads/drill. 5 hrs/drill to demob to Yellowknife by flatbed truck.	hrs	20	HiabI	\$155.00	\$3,100	100%	\$3,100	\$0		\$670 Assume 1 drill per lease (NITE, BIG) based on CRP. Assume approx. 5 hrs per drill to pack up and remove to Yellowknife, 2 loads/drill, based on Proponent's estimate ("Assumes 2 loads/drill at 5hrs/drill. No terr/fed split provided.").	Included into Proponent's estimate		
Drill removal - supervisor labour	ECHO (formerly THOR) lease: 2 drills. 1 supervisor. 5 hrs/drill to demob to Yellowknife.	personhrs	10	SuperI	\$52.00	\$520	100%	\$520	\$0		\$112 per Project Description, N-3192 (ECHO (formerly known as THOR)). Assume up to 2 drills for ECHO lease, based on CRP. Assume approx. 5 hrs per drill to pack up and remove to Yellowknife, based on Proponent's estimate. Assume 1 supervisor to oversee work.	Included into Proponent's estimate		
Drill removal - drill crew labour	ECHO (formerly THOR) lease: 2 drills. Drill crew of 4. 5 hrs/drill to demob to Yellowknife.	personhrs	40	lab-sl	\$41.00	\$1,640	100%	\$1,640	\$0		\$354 per Project Description, N-3192 (ECHO (formerly known as THOR)). Assume up to 2 drills for ECHO lease, based on CRP. Assume approx. 5 hrs per drill to pack up and remove to Yellowknife, 4 person drill crew, based on Proponent's estimate ("Uses project specific unit cost. No terr/fed split provided.").	Included into Proponent's estimate		
Drill removal - heli	ECHO (formerly THOR) lease: 2 drills. Heli - time	allowance	1	#N/A	\$10,376.00	\$10,376	100%	\$10,376	\$0		\$1,193 Helicopter access only to ECHO lease per Project Description. Up to 2 drills per Project Description. Assume up to 2 hrs flying time to demob each drill to Yellowknife. 2 drills * 2 hrs/drill = 4 hrs total. Included costs based on helicopter quotation from Sahlu Helicopters Jan 22, 2021. Flight time = \$1850/hr * 4 hr flight/day = \$7,400 Fuel usage = \$744/hr * 4 hrs = \$2,976 Total = \$10,376 (per lease) Inflation from Jan 2021 to present applied.	Included in Proponent's estimate		
Other				#N/A	\$0.00	\$0		\$0	\$0		Addressed in the mob tab.	Proponent's estimate includes additional truck cost to remove other stuff.		
REMOVE BUILDINGS - see note below														
Accommodation Complex	ECHO (formerly THOR) lease: Temporary structures: tent, soft-sided Sleepers (7), Kitchen (1)	m2	168.6	BRWL	\$27.50	\$4,635	100%	\$4,635	\$0		\$1,001 Quantities and structures from CRP (Table 3)	Included in Proponent's estimate		
Process Facilities	ECHO (formerly THOR) lease: Temporary structures: tent, soft-sided Dry (1), Office (1)	m2		#N/A	\$0.00	\$0		\$0	\$0			Excludes 3 sleepers		
Offices, Repair, Lab, Warehouse		m2	42.1	BRWL	\$27.50	\$1,159	100%	\$1,159	\$0		\$250 Quantities and structures from CRP (Table 3)	Included in Proponent's estimate		
Storage Facilities		m2		#N/A	\$0.00	\$0		\$0	\$0					
Water and Wastewater Treatment Facilities		m2		#N/A	\$0.00	\$0		\$0	\$0					
UG Heating Plant		m2		#N/A	\$0.00	\$0		\$0	\$0					
Emulsion Plant		m2		#N/A	\$0.00	\$0		\$0	\$0					
AN Storage Facility		m2		#N/A	\$0.00	\$0		\$0	\$0					
	NITE&BIG lease: Temporary structures: tent, soft-sided Emergency shelter (2)													
	ECHO lease: Temporary structures: tent, soft-sided Core logging (1), Core cutting (1)	m2	84.3	BRWL	\$27.50	\$2,318	100%	\$2,318	\$0		\$501 Quantities and structures from CRP (Table 3)	Included in Proponent's estimate		
Warehouse, Shops and Other		m2		#N/A	\$0.00	\$0		\$0	\$0			Excludes (2) core logging, cutting tents		
Storage Facility at Laydown/Airstrip														
	No fuel tanks present on territorial land. All fuel stored in drums, cylinders, tubes, cans, pails See 'Chemicals' and 'Mob' for removal and disposal.	each		#N/A	\$0.00	\$0		\$0	\$0		CRP and LUP application indicates all fuel storage on territorial land will be in drums, cylinders, tubes, cans or pails. Transport costs for fuel containers addressed in Mob tab. Handling and disposal costs addressed in Chemicals tab.			
Fuel tanks		m2		#N/A	\$0.00	\$0		\$0	\$0					
Freshwater intake		m2		#N/A	\$0.00	\$0		\$0	\$0					
Reclaim pumps		m2		#N/A	\$0.00	\$0		\$0	\$0					
Outfall & Diffuser		m2		#N/A	\$0.00	\$0		\$0	\$0					
Airstrip lighting, navigation, electrician		v		#N/A	\$0.00	\$0		\$0	\$0					
Airstrip lighting, navigation, mechanical		persondays		#N/A	\$0.00	\$0		\$0	\$0					
Break foundation slabs		m2		#N/A	\$0.00	\$0		\$0	\$0					
Consolidate & dump boneyard debris		m3		#N/A	\$0.00	\$0		\$0	\$0					
Other		allow		#N/A	\$0.00	\$0		\$0	\$0					
LANDFILL FOR DEMOLITION WASTE														
Place rock cover		m3		#N/A	\$0.00	\$0		\$0	\$0					
Place soil cover		m3		#N/A	\$0.00	\$0		\$0	\$0					
Vegetate		ha		#N/A	\$0.00	\$0		\$0	\$0					
GRADE AND CONTOUR PADS														
											Uses Proponent's approach of tent and building area + 5%. Use camp and building area footprint described in CRP. Uses Proponent's approach for camp on federal land for consistency	Item was identified in Proponent's estimate but incomplete and not included in estimate cost.	Confirm and identify the areas to be scarified.	
Accommodation Complex	Scarify area beneath and around tents and buildings +	ha	0.031	scfyl	\$4,300.00	\$133	100%	\$133	\$0					
Process Facilities		ha		#N/A	\$0.00	\$0		\$0	\$0					
Offices, Repair, Lab, Warehouse		ha		#N/A	\$0.00	\$0		\$0	\$0					
Storage Facilities		ha		#N/A	\$0.00	\$0		\$0	\$0					
Water and Wastewater Treatment Facilities		ha		#N/A	\$0.00	\$0		\$0	\$0					
UG Heating Plant		ha		#N/A	\$0.00	\$0		\$0	\$0					
Emulsion Plant		ha		#N/A	\$0.00	\$0		\$0	\$0					

2 of 2

1 Chemicals/Soil Area Name:

Note: The procedures, equipment and packaging for clean up and removal of chemicals or contaminated soils are highly dependent on the nature of the chemicals and their existing state of containment. Government guidelines should be consulted on an individual chemical basis. Any estimate made here should be considered very rough unless specific evaluations have been conducted.

ACTIVITY/MATERIAL	Notes	Units	Quantity	Cost Code	Unit Cost	% Cost	Land Cost	Water Cost	Inflation	Source of Information	Comparison to Proponent's Security	
HAZARDOUS MATERIALS AUDIT												
Hazardous materials audit		mandays		#N/A	\$0.00	\$0		\$0	\$0			
CONSOLIDATION OF HAZARDOUS MATERIALS												
										Assume 1 day to oversee removal of residual fuel and contaminated soil from three locations (leases); assume time to travel between locations is included. Total of 6 territorial leases (NITE, BIG, ECHO and FI,Ki, and Shorty) results in 2 days for inspection. Assume 12hrs per day.		Included in Proponent's estimate assumes 1 day for activity at Hidden Lake Camp. Assume 12hr/day
Environmental technician/coordinator	Fuel and contaminated soil removal	personhrs	24	ENV/COH	\$130.00	\$3,120	50%	\$1,560	\$1,560	\$674	Unit cost based on Proponent's estimate	
Decontaminate: oil, fuel		persondays		#N/A	\$0.00	\$0		\$0	\$0			
Decontaminate maintenance shop		persondays		#N/A	\$0.00	\$0		\$0	\$0			
Decontaminate power plant		persondays		#N/A	\$0.00	\$0		\$0	\$0			
Decontaminate bulk fuel storage		persondays		#N/A	\$0.00	\$0		\$0	\$0			
Decontaminate ANFO plant		persondays		#N/A	\$0.00	\$0		\$0	\$0			
Decontaminate offices/warehouse/accom		persondays		#N/A	\$0.00	\$0		\$0	\$0			
Removal of asbestos siding on buildings		m2		#N/A	\$0.00	\$0		\$0	\$0			
Removal of friable asbestos on equipment		m2		#N/A	\$0.00	\$0		\$0	\$0			
										Based on Proponent's estimate. Assume skilled labour support is for Enviro. Tech/Coord. Support		Included in Proponent's estimate. Uses high cost estimate Assumes 12hrs
Other	Support/Assist Enviro Tech/Coord	personhrs	24	lab-sh	\$49.60	\$1,190	50%	\$595	\$595	\$257	Assume hours based on Enviro. Tech/Coord. (see above)	
HAZARDOUS MATERIALS REMOVAL												
Waste fuel - diesel, aviation fuel, and gasoline	NITE,BIG, ECHO lease: 10% of total max on site	litre	2337	ORL	\$0.43	\$1,005	50%	\$502	\$502	\$217	Quantity based on 10% of total fuel quantity for site, as identified in CRP. Assume low unit cost given fuel is to be stored in drums or other small containers, limiting handling requirements. Estimate 91 L per 100 lb (45 kg) propane cylinder. Assume cost includes disposal fee. Assume unit cost excludes cost for transport off site. Transport addressed under Mob tab.	Fuel from territorial land not included in Proponent's estimate. CRP and project description indicates fuel storage in these quantities on ECHO, BIG, and NITE leases (territorial)
Propane	NITE,BIG, ECHO lease: 10% of total max on site	litre	91	ORL	\$0.43	\$39	50%	\$20	\$20	\$8		
Other - various lubricants (e.g., drilling fluids)	NITE,BIG, ECHO lease: 10% of total max on site	litre	66	ORL	\$0.43	\$28	50%	\$14	\$14	\$6		
Waste Oil		litre		#N/A	\$0.00	\$0		\$0	\$0			
Assay & environmental lab reagents		kg		#N/A	\$0.00	\$0		\$0	\$0			
Machine shop paints, solvents etc		litre		#N/A	\$0.00	\$0		\$0	\$0			
Glycol		litre		#N/A	\$0.00	\$0		\$0	\$0			
Process reagents		kg		#N/A	\$0.00	\$0		\$0	\$0			
Nuclear sources		allow		#N/A	\$0.00	\$0		\$0	\$0			
Other hazardous materials		allow		#N/A	\$0.00	\$0		\$0	\$0			
HAZARDOUS MATERIALS												
Transportation to disposal facility	included in mob/demob tab	hrs		#N/A	\$0.00	\$0		\$0	\$0	\$0	included in mob/demob tab Assume disposal at Yellowknife Based on Proponent's estimate. Assume this cost was not included in the cost assumption above since it was included as a separate item. Assume this quantity accounts for the hazardous wastes listed in WMP, excluding contaminated soil and waste fuel. Use project unit cost. Assume current rate (no inflation)	included in demob tab Included in Proponent's estimate Estimate \$240 per m³ for contaminated soil disposal
Disposal fees	hazardous materials	m3	5	#N/A	\$240.00	\$1,200	50%	\$600	\$600	N/A, current rates		
Other				#N/A	\$0.00	\$0		\$0	\$0			
CONTAMINATED SOILS												
										Fuel storage areas are to be assessed for fuel contamination as noted by the CRP. Assume Phase 1 ESA for Territorial lease drill sites. Uses Proponent's cost allowance. Assume includes travel time and transport. An additional allowance compared to previous estimate due to increase drilling on Territorial leases.		included in Proponent's estimate
Contam. soil investigation - Phase 1	Phase 1 ESA	allow	2	#N/A	\$5,000.00	\$10,000	50%	\$5,000	\$5,000	\$2,160		
Contam. soil investigation - Phase 2		each		#N/A	\$0.00	\$0		\$0	\$0			
										Assume 1 sample per site, 4 current drill locations on territorial land at time of closure and 3 fuel caches. Total of 7 sites. Assume 50:50 split of drills due to uncertainty of location at time of abandonment. Uses Proponent's sample cost allowance. Assume No inflation due to current estimated sample rates.		Includes 4 samples for drill locations at time of closure
Soil sampling for Phase 1	Soil sampling for Phase 1 ESA	allow	7	#N/A	\$215.00	\$1,505	50%	\$753	\$753	N/A, current rates		
CONTAMINATED SOIL REMOVAL												
Excavate and transport to onsite facility		m3		#N/A	\$0.00	\$0		\$0	\$0			
Manage hydrocarbon remediation at facility		m3		#N/A	\$0.00	\$0		\$0	\$0			
Reagents/stabilizing agent		m2		#N/A	\$0.00	\$0		\$0	\$0			
										Quantity based on described approach in Proponent' estimate. Unit cost for excavation. Use foot print of areas on Territorial Land, per CRP. Assume excavation for transport off site. Transport cost off site included in Mobilization tab. Territorial only cost reported		Assumes 26.14 m3 total for project based on 3% of total area. Therefore, assumes a depth of 1m3. Includes additional costing line for 1m3
Excavate	Contaminated soil Assume 3% of total structures area on Terr. Land	m3	8.85	SB1L	\$4.30	\$38	50%	\$19	\$19	\$8		

1 Chemicals/Soil Area Name:

Note: The procedures, equipment and packaging for clean up and removal of chemicals or contaminated soils are highly dependent on the nature of the chemicals and their existing state of containment. Government guidelines should be consulted on an individual chemical basis. Any estimate made here should be considered very rough unless specific evaluations have been conducted.

										Use Proponent's disposal fee. Inflation from Jan 2020 to present applied.		Included disposal fee based on KBL 2020 rates. Includes disposal of 1m3 but excludes the 26.14 m3 of excavated soil	
Disposal fees	Contaminated soil Assume 3% of total structures area on Terr. Land	m3	8.85	#N/A	\$300.00	\$2,655	50%	\$1,327	\$1,327	\$258	Assume off-site disposal of excavated soil		
Contour decontaminated area		m3	8.85	dsh	\$3.80	\$34	100%	\$34	\$0	Based on Proponent's estimate. \$7 Assume contouring of excavated soil area		assume approx. 3% of the total area for camp requires contouring due to contaminated soil excavation	
CONTAMINATED SOIL VERY LOW PERMEABILITY COVER													
Supply geomembrane, HDPE, ES3, GCL		m2		#N/A	\$0.00	\$0		\$0	\$0				
Upper and lower bedding layers		m3		#N/A	\$0.00	\$0		\$0	\$0				
Install geomembrane, HDPE, ES3, GCL		m2		#N/A	\$0.00	\$0		\$0	\$0				
Erosion protection layer		m3		#N/A	\$0.00	\$0		\$0	\$0				
Vegetate		m2		#N/A	\$0.00	\$0		\$0	\$0				
Install infiltration/seepage instrumentation		allow		#N/A	\$0.00	\$0		\$0	\$0				
Other				#N/A	\$0.00	\$0		\$0	\$0				
OTHER				#N/A	\$0.00	\$0		\$0	\$0				
						Total	\$20,814		\$10,424	\$10,390			
						% of Total			50%	50%			
										Inflation			
										Land	Water		
										Cost	Cost		
										\$1,801	\$1,794		

1 Interim Care and Maintenance

ACTIVITY/MATERIAL	Notes	Units	Quantity	Cost Code	Unit Cost	Cost	Inflation	Source of Information	Comparison to Proponent's Security
INTERIM CARE & MAINTENANCE									
on-site caretaker		manmonths		#N/A	0	\$0			
extra personnel		manmonths		#N/A	0	\$0			
-electrician		manmonths		#N/A	0	\$0			
-mechanic		manmonths		#N/A	0	\$0			
annual fuel		litre		#N/A	0	\$0			
misc. supplies		allow		#N/A	0	\$0			
pick-up truck		each		#N/A	0	\$0			
small dozer		allow		#N/A	0	\$0			
small excavator		allow		#N/A	0	\$0			
snow machine		allow		#N/A	0	\$0			
communications		allow		#N/A	0	\$0			
SNP/AEMP water sampling & reporting		each		#N/A	0	\$0			
geotechnical assessment		each		#N/A	0	\$0			
interim water treatment				#N/A		\$0			
Uses Proponent's cost allowance.									
No inflation due to current estimated project specific cost.									
Other	ICM Inspection	allow	1	#N/A	2500	\$2,500	N/A, current rates	Assume Territorial amount shown	Included project-specific cost allowance. Includes travel time and transport. Territorial (under GNWT Tab)
						Annual Interim C&M Cost			
Number of years of ICM						Total	\$0	1 years ICM assumed.	included in Proponent's estimate

1 Mobilization/Demobilization:

ACTIVITY/MATERIAL	Notes	Units	Quantity	Cost Code	Unit Cost	Cost Inflation	Source of Information	Comparison to Proponent's Security	Information Requested from Proponent		
MOBILIZE HEAVY EQUIPMENT							Per RECLAIM manual, it is assumed existing on-site equipment is not available for use in reclamation. Therefore, assume below equipment is required to be mobilized/demobilized to complete winter road construction and reclamation activities. Assume average 1.5 hr travel time between Yellowknife and all leases based on site maps. Unless otherwise stated, assume fed/terr split based on capital cost split. Territorial cost reported only.	Costs shown are territorial costs unless otherwise noted. Assume difference in Fed./Terr. split differs based on differences in proportion of capital cost	Confirm reclamation equipment requirements.		
Reclamation Equipment											
Excavators	1 piece. Winter road construction/site reclamation. Transport by 1 flat deck truck.	hrs	1.5	hiabl	\$155	\$120				\$26 Assume 1 load per each piece of equipment.	Included in Proponent's estimate.
Dozers	1 piece. Winter road construction/site reclamation. Transport by 1 flat deck truck.	hrs	1.5	hiabl	\$155	\$120				\$26 Assume 1 load per each piece of equipment.	Included in Proponent's estimate.
Loader	1 piece. Winter road construction/site reclamation, loading flat decks. Transport by 1 flat deck truck.	hrs	1.5	hiabl	\$155	\$120				\$26 Assume 1 load per each piece of equipment.	Included in Proponent's estimate.
Light duty vehicles	3 vehicles. Worker access. Addressed with worker mobilization.	hrs		#N/A	\$0	\$0	\$0 costs addressed with worker mobilization/demobilization.	Included in Proponent's estimate.			
Water truck	1 piece. Winter road construction/site reclamation. Addressed with worker mobilization.	hrs		#N/A	\$0	\$0	\$0 Assume truck driven back from site by reclamation staff, with costs addressed with worker mobilization/demobilization.	Included in Proponent's estimate.			
							Assume 3 trucks. Typical daily rental rate assumed. Assume mobilization of light trucks to site is addressed with worker mobilization costs below. Assume reclamation program duration based on reclamation activities.	Included in Proponent's estimate.			
Light duty vehicles	Rental fee. 3 trucks for all leases.	days	90	#N/A	\$200	\$9,311	\$2,011 Territorial cost reported. Per Proponent's correspondence (Mar 17), listed the addition of a snow cat as a required equipment to support reclamation of the fed/terr leases to "open the existing WR to access the campsite."	Assumes 13 day program for reclamation activities on Territorial land			
Snow cats	1 piece. Winter road construction/site reclamation. Transport by 1 flat deck truck.	hrs	1.5	hiabl	\$155	\$120	\$26 Assume 1 load per each piece of equipment.	Not included in Proponent's estimate.			
Other - helicopter	Addressed with drill demob in Bldgs&Equip.	allow		#N/A		\$0					
MOBILIZE MISC. EQUIPMENT											
Pump shipping		each		#N/A	\$0	\$0					
Pipe shipping		m		#N/A	\$0	\$0					
Minor tools and equipment		allow		#N/A	\$0	\$0					
Truck tires		allow		#N/A	\$0	\$0					
Other		allow		#N/A		\$0					
MOBILIZE CAMP											
								Proponent's estimate assumes a cost of \$4,000 based on the rationale, "Assume minimal camp requirements as exploration camp will be taken down as part of reclamation activities."			
Reclamation activities		allow	1	#N/A	\$4,000	\$4,000	Adopted Proponent's estimate.				
Long term reclamation activities (eg pump flooding)		allow		#N/A	\$0	\$0	Assume Territorial cost reported only.				
MOBILIZE WORKERS											
							Assume 1 supervisor required for winter road construction, drill site reclamation and demob. Assume 1.5 hr travel time from Yellowknife (3 hr round trip). Assume transport to camp by light duty pick up truck. Assume shift change every 2 weeks. Assume supervisor is shared between leases, with federal/territorial split based on capital cost split. Territorial cost reported only.				
Reclamation activities - travel time	All activities 1 supervisor. Mob and demob. Transport by pick-up truck. 2 week shift, 2 mob events.	hrs	6	SUPERL	\$52	\$161	\$35	Included in Proponent's estimate.			
							Assume 4 person drill crew required for drill site reclamation and demob based on Proponent's estimate. Assume 1.5 hr travel time from Yellowknife (3 hr round trip). Assume transport to camp by light duty pick up truck. Assume shift change every 2 weeks. Assume drill crew is shared between leases, with federal/territorial split based on capital cost split. Territorial cost reported only.				
Reclamation activities - travel time	Drill demob/reclamation 4 person drill crew. Mob and demob. Transport by pick-up trucks. 2 week shift, 2 mob events.	hrs	24	LAB-SL	\$41	\$509	\$110	Included in Proponent's estimate.			
							Assume 2 labourers required for winter road construction. Assume 1.5 hr travel time from Yellowknife (3 hr round trip). Assume transport to camp by light duty pick up truck. Assume shift change every 2 weeks. Assume labourers shared between leases, with federal/territorial split based on capital cost split. Territorial cost reported only.				
Reclamation activities - travel time	Winter road construction 2 skilled labourers. Mob and demob. Transport by pick-up truck. 2 week shift, 2 mob events.	hrs	12	LAB-USL	\$31	\$192	\$42	Included in Proponent's estimate.			
							Assume 2 equipment operators required for winter road construction. Assume 1.5 hr travel time from Yellowknife (3 hr round trip). Assume transport to camp by light duty pick up truck. Assume shift change every 2 weeks. Assume operators shared between leases, with federal/territorial split based on capital cost split. Territorial cost reported only.				
Reclamation activities - travel time	Winter road construction 2 equipment operators. Mob and demob. Transport by pick-up truck. 2 week shift, 2 mob events.	hrs	12	OPERL	\$41	\$254	\$55	Included in Proponent's estimate.			

1 Mobilization/Demobilization:

ACTIVITY/MATERIAL	Notes	Units	Quantity	Cost Code	Unit Cost	Cost	Inflation	Source of Information	Comparison to Proponent's Security	Information Requested from Proponent
Long term reclamation activities (eg pump flooding) - transport		each		#N/A	\$0	\$0				
Long term reclamation activities (eg pump flooding) - travel time		each		#N/A	\$0	\$0				
Airfare - Reclamation Monitoring		each		#N/A	\$0	\$0				
WORKER ACCOMMODATIONS									4640	(\$4,640)
								Total persondays is based on estimated crew and activity time requirements (see estimates below). Additional camp support staff are expected to be required beyond the approx. 9 person crew. However, costing for additional camp support staff is assumed addressed with camp operation costs.	Included in Proponent's estimate Total person days 46.6	Provide schedule of project activities, including equipment, crew and time requirements.
Reclamation activities	Drill demob, site reclamation, winter road construction/operation	persondays	96.2	ACCML	\$100	\$9,620	\$2,078	Territorial cost reported only.		
Long term reclamation activities (eg pump flooding)		personmonths		#N/A	\$0	\$0				
MOBILIZE FUEL										
								Estimate approx. 19000 L total fuel requirement based on estimated equipment requirements (see calculations below). Estimate 93 fuel drums. Assume 25 drums per truck, thus 4 truck loads. Assume 1.5 hr travel time from Yellowknife (3 hr round trip). Assume transport by flat-bed truck. Territorial cost reported only.	Proponent's estimate includes total fuel estimate of 6000L.	Confirm estimated fuel required for reclamation activities.
Fuel freight - reclamation activities & accommodations		hrs	12	HIABL	\$155	\$1,860	\$402	Assume cost of fuel is included with costing for reclamation activities.		
Fuel freight - long term reclamation activities		litre		#N/A	\$0	\$0				
WINTER ROAD										
								Based on Proponent's correspondence, approx. 5.2 km of winter road required for NITE/BIG leases and approx. 4.7 km of winter road required for Fi,Ki, Shorty leases. These leases are categorized as Territorial per on Project Description (Table 1) Estimate of 19.1 km for Thompson-Lundmark winter road based on site maps. Total length of road approx. 29 km Territorial cost reported only here.	Included in Proponent's estimate. Estimates a total of 10 km winter road	Confirm estimate of winter road required for reclamation.
Construction and operation	5.2 km winter road to BIG/NITE leases 4.7 km winter roads to Fi, Ki, Shorty leases. 19.1km winter road (Thompson-Lundmark)	km	29	WRCL	\$2,000	\$58,000	\$12,528			
Limited winter use		km		#N/A	\$0	\$0				
Winter road tariff		km		#N/A	\$0	\$0				
DEMobilize HEAVY EQUIPMENT										
								Per RECLAIM manual, it is assumed existing on-site equipment is not available for use in reclamation. Therefore, assume below equipment is required to be mobilized/demobilized to complete winter road construction and reclamation activities. Assume average 1.5 hr travel time between Yellowknife and all leases based on site maps. Assume fed/terr split based on capital cost split. Territorial cost reported only.		
Reclamation Equipment										
Excavators	1 piece. Winter road construction/site reclamation. Transport by 1 flat deck truck.	hrs	1.5	hiabl	\$155	\$120	\$26	Assume 1 load per each piece of equipment.	Included in Proponent's estimate.	
Dozers	1 piece. Winter road construction/site reclamation. Transport by 1 flat deck truck.	hrs	1.5	hiabl	\$155	\$120	\$26	Assume 1 load per each piece of equipment.	Not included in Proponent's estimate.	
Loader	1 piece. Winter road construction/site reclamation, loading flat decks. Transport by 1 flat deck truck.	hrs	1.5	hiabl	\$155	\$120	\$26	Assume 1 load per each piece of equipment.	Included in Proponent's estimate.	
Snow cats	1 piece. Winter road construction/site reclamation. Transport by 1 flat deck truck.	hrs	1.5	hiabl	\$155	\$120	\$26	Assume 1 load per each piece of equipment.	Not included in Proponent's estimate.	
Light duty vehicles	3 vehicles. Worker access. Addressed with worker mobilization.	hrs		#N/A	\$0	\$0	\$0	Assume trucks will be driven back from site by reclamation staff, with costs addressed with worker mobilization/demobilization.	Not included in Proponent's estimate.	
Water truck	1 piece. Winter road construction/site reclamation. Addressed with worker mobilization.	hrs		#N/A	\$0	\$0	\$0	Assume truck driven back from site by reclamation staff, with costs addressed with worker mobilization/demobilization.	Not included in Proponent's estimate.	
Operations Equipment								Below quantities from CRP. Assume average 1.5 hr travel time between Yellowknife and all leases (3 hr round trip) based on site maps. Assume transport by flat-bed truck. Assume 1 load for each piece of equipment unless otherwise noted. Assume fed/terr split based on capital cost split due to uncertainty in location of most equipment at the time of abandonment. Territorial cost reported only.	Unless otherwise noted, below quantities included in Proponent's estimate under Bldgs & Equip (Fed) Tab. Excludes Terr./Fed split. Additional differences/ notes provided below. Not included in Proponent's estimate.	
Solids removal equipment cw generator	5 pieces	hrs	15	hiabl	\$155.00	\$1,203	\$260			
Skidder or D-6 bulldozer	4 pieces	hrs	12	hiabl	\$155.00	\$962	\$208			
Water truck	4 piece	hrs	12	hiabl	\$155.00	\$962	\$208			
Excavator	1 piece	hrs	3	hiabl	\$155.00	\$241	\$52		Excludes 2 pieces	
Grader	1 piece	hrs	3	hiabl	\$155.00	\$241	\$52			
Snow cats	2 pieces	hrs	6	hiabl	\$155.00	\$481	\$104			
Hagglund BV206	1 piece	hrs	3	hiabl	\$155.00	\$241	\$52			
Water pumps	10 pieces	hrs	3	hiabl	\$155.00	\$241	\$52			

1 Mobilization/Demobilization:

ACTIVITY/MATERIAL	Notes	Units	Quantity	Cost		Cost Inflation	Source of Information	Comparison to Proponent's Security	Information Requested from Proponent
				Code	Unit Cost				
ATVs	6 pieces	hrs	3	hiabl	\$155.00	\$241	\$52		
Snow machines	10 pieces	hrs	6	hiabl	\$155.00	\$481	\$104	Assume typical dimensions for hiabl truck and snow machines.	Excludes 2 pieces
Pick-up trucks	12 pieces (9 pieces Total) 5 pieces (5kw-10kw) 1 pieces (20kw)	hrs	36	hiabl	\$155.00	\$2,886	\$623	Assume 2 loads for 10 snow machines	Excludes 4 pieces
Diesel generators	3 pieces (40kw)	hrs	6	hiabl	\$155.00	\$481	\$104	Assume 1 load per generator larger than 19 kw (4 total) and 1 load for all generators less than 11 kw.	
Incinerator	1 piece (1500kg)	hrs	3	hiabl	\$155.00	\$241	\$52		
Miscellaneous equipment	e.g., core saws, oil heaters, ice auger, blast hole drill	hrs	3	hiabl	\$155.00	\$241	\$52		
DEMOBILIZE CAMP									
Reclamation activities		allow	1	#N/A	\$4,000	\$4,000	N/A, current rates	Adopted Proponent's estimate.	Proponent's estimate assumes a cost of \$4,000 based on the rationale, "Assume minimal camp requirements as exploration camp will be taken down as part of reclamation activities." based on end of LUP term.
DEMOBILIZE WORKERS									
Reclamation activities - travel time	Included with mob costs.	hrs		#N/A	\$0	\$0		Assume Territorial cost reported only.	Confirm schedule of anticipated reclamation activities
crew transportation	Included with mob costs.	each		#N/A	\$0	\$0	Included in Mobilize Worker	Proponent's estimate includes two additional line items for demob crew (1 super and 5 crew members). Discrepancy with Mob Workers since Mob Worker include demob costing. Proponent's estimate uses units (persondays) and cost code (\$/hr) that are misaligned	Confirm the crew size required for reclamation activities
DEMOBILIZE WASTE									
Demobilize waste	Waste removal from Territorial Leases	hrs	9	HIABL	\$155	\$1,395	\$301	Based on Proponent's Estimate Assume includes demolished buildings, contaminated soil, site refuse and debris, sewage, remaining fuel drums, and any other inert and hazardous waste. (Chemicals (GNWT) Tab) Estimate 3 hrs total per round trip. Assume transport by flat-bed truck. Assume 3 loads at approx. 10 m3 each	Proponent's estimate includes one line item under Demob Camp category 3 loads, round trip to YK by flat-bed truck
Transport waste rock to disposal facility	Assume PAG. Disposal in Alberta. 5 tonnes 1 round trip required. Tipping fee addressed in UG tab.	hrs	20.5	HIABL	\$155	\$2,860	\$618	Quantities outlined in UG tab. Assume waste rock from bulk sample is PAG and requires removal from site. Estimate 3 hrs travel time between Yellowknife and Hidden Lake Camp for transport trucks. Estimate distance by winter road between Camp and bulk sample site approx. 10km (30min round trip) for Ki, Fi, and Shorty leases. Assume 1 hr travel time between Yellowknife and BIG & NITE leases. Assume disposal location for PAG waste rock located in Alberta at approximately 8 hrs travel time from Yellowknife (one-way). Assume fed/terr split cost based on capital costs. Territorial cost reported	Not included in Proponent's estimate.
Demobilize waste	ECHO lease Helicopter transport	allow	1	#N/A	\$15,564	\$15,564	\$1,665	Helicopter access only to ECHO lease as described in Project Description. Assume up to 0.5 day (6 hrs) flying time to demob all site waste to Yellowknife. Included costs based on helicopter quotation from Sahtu Helicopters Jan 22, 2021. Flight time = \$1850/hr * 6 hr flight/day = \$11,100 Fuel usage = \$744/hr * 6 hrs = \$4,464 Total = \$15,564 Inflation from Jan 2021 to present applied.	Not included in Proponent's estimate. Proponent's estimate includes one line item under Demob Camp category Provides Tipping fee of \$156/tonne Assumes 40 tonnes
Solid waste tipping fee	Tipping fee	tonne	40	#N/A	\$191.50	\$7,660	N/A, current rates	Based on 2023 Yellowknife landfill tipping fees for commercial waste from outside city. Assume an allowance for one full truck load of 40 tonnes.	Provide Supporting documentation for project specific tipping fees WMP - Appendix A (correspondences) is missing/not provided
Solid waste tipping fee	Minimum equipment charge	allow	1	#N/A	\$130	\$130	N/A, current rates	Minimum equipment charge based on 2023 Yellowknife tipping fees.	Not included in Proponent's estimate.
Sewage tipping fee	Assumed \$95.75/m3	m3	5.4	#N/A	\$95.75	\$517	N/A, current rates	Estimate 100 L sewage produced per person per day. Assume 20% is blackwater for off-site disposal, thus: 100 L/person/day x 9 people x 30 days = 27,000 L x 20% = 5,400 L = 5.4 tonnes. Estimate 5.4 m3 of blackwater for disposal. Assume half solid waste tipping fee	Not included in Proponent's estimate.
					Total	\$126,136	\$22,027		

Estimated Equipment Fuel Use

1 Mobilization/Demobilization:

ACTIVITY/MATERIAL	Notes	Units		Quantity		Cost		Cost Inflation	Source of Information	Comparison to Proponent's Security	Information Requested from Proponent
		Days Active	L/hr	Consumption L/day (10hrs/day)	Unit Cost	Total fuel (L)					
Equipment	# of Machines										
Excavators		1	5	15	150	692	Assume needed for soil excavation, building teardown, winter road reclamation (assume approx. 5 days)				
Water truck		1	30	12	120	3600	Assume needed for winter road construction/operation (total project duration)				
Service Vehicles		3	30	2.5	25	2250	Assume needed for total project duration (total project duration)				
Loader		1	30	7	70	2100	Assume needed for loading flat decks, winter road construction/operation (total project duration)				
Dozers		1	30	15	150	4500	Assume needed for winter road construction/operation (total project duration)				
Snow Cat		1	30	17	170	5100	Per Proponent's correspondence (Mar 17 '23), assume needed for winter road construction/operation (total project duration)				
Camp generator		1	30	2.9	29	870	Assume needed for total project duration				
Total Per Day						19112	93 estimate number of barrels (205 L /barrel)				

* L/hr for equipment based on rates for typical equipment available online. Actual rates will likely vary based on specific equipment model, standby time, operational effort, environmental conditions, etc.

Major Project Activity Time Estimate		
Building Teardown		
Tent frames and pads	1 hr/each, 14 frames/pads = 1.4 days based on size and teardown by equipment/hand.	
Total teardown time	1.4 days (10 hr day)	
Days		1.4
Crew required	4 (1 supervisor, 2 labourer, 1 operator)	
Crew quantity (persons) - excluding supervisor		3
Crew days (person days)		4.2
Demob Drill Rigs		
Demob drill rigs	5 hrs/drill	
# drills		4
Total time	20 hrs = 2 days (10 hr day)	
Days		2
Crew required	5 (1 supervisor, 4 drill crew)	
Crew quantity (persons) - excluding supervisor		4
Crew days (person days)		8
Abandon Drill Holes		
Cut/plug/cap time	0.5 hr	
Travel time b/w holes	0.5 hr	
# holes	280 holes rounded (approx. 90% total # for territorial land)	
Total time	252 hrs = 25.2 days rounded (10 hr day)	
Days		25.2
Crew required	2 (2 labourers)	
Crew quantity (persons) - excluding supervisor		2
Crew days (person days)		50.4
Winter Road Construction		
Winter road build rate	10 km/day based on build distance/time for other northern winter roads	
Winter road length	10 km	
Total build time	1 day	
Days		1
Crew required	3 (1 supervisor, 2 operators, 2 labourers)	
Crew quantity (persons) - excluding supervisor		4
Crew days (person days)		4
Total project days		29.6
Total persondays (excluding supervisor)		66.6
Supervisor days		29.6
Total persondays	Assume supervisor present for total project duration	96.2
Maximum persons onsite		9

1 Post-Closure Monitoring & Maintenance:

ACTIVITY/MATERIAL	Notes	Units	Quantity	Cost Code	Unit Cost	Cost	Source of Information	Comparison to Proponent's Security	Information Requested from Proponent
MONITORING & INSPECTIONS									
Annual geotechnical inspection		each		#N/A	\$0.00	\$0			
Survey inspection		each		#N/A	\$0.00	\$0			
Regulatory costs*		each		#N/A	\$0.00	\$0			
Site water monitoring (AEMP and SNP)		each		#N/A	\$0.00	\$0			
- Active closure and flooding		each		#N/A	\$0.00	\$0			
- Post pit flooding		each		#N/A	\$0.00	\$0			
Air Quality Monitoring Program (AQMP)		each		#N/A	\$0.00	\$0			
Wildlife Effects Monitoring Program (WEMP)		each		#N/A	\$0.00	\$0			
Vegetation Monitoring		each		#N/A	\$0.00	\$0			
							Per Project Description, access to leases and camps during. The summer program is supported by helicopter / aircraft. Assume 1 inspection per lease and 1 inspection at Hidden Lake camp, 8 locations total. 8 locations * 0.5 hrs per location = 4 hrs. Assume up to 2 hrs flying time round trip to Yellowknife. 6 hrs total. Included costs based on helicopter quotation from Sahu Helicopters Jan 22, 2021. Flight time = \$1850/hr * 6 hr flight/day = \$11,100 Fuel usage = \$744/hr * 6 hrs = \$4,464 Total = \$15,564 Inflation from Jan 2021 to present applied. Terrified split based on proportion of inspection locations (75:25).		
Helicopter	Support for summer inspection	allowance	1	#N/A	\$15,564.00	\$11,673	\$1,342 Territorial cost reported only	not included in proponent's estimate	Confirm support required for post-closure inspection
							Uses Proponent's cost allowance. No inflation due to current estimated project specific cost. Terrified split based on proportion of inspection locations (75:25). Assume allowance excludes needed helicopter support during summer. Territorial cost reported only	Includes project-specific cost allowance for a one-time follow-up site inspection to confirm no erosion or other issues.	Confirm anticipated inspection activities and criteria for passing inspection.
Other	summer inspection	each	1	#N/A	\$5,000.00	\$3,750	N/A, current rates Territorial cost reported only	Federal cost only; no territorial cost split.	
COVER MAINTENANCE									
Repair erosion - infill gullies		allow		#N/A	\$0.00	\$0			
Repair erosion - upgrade diversion ditches		allow		#N/A	\$0.00	\$0			
Remove problem vegetation		allow		#N/A	\$0.00	\$0			
Repair animal damage		allow		#N/A	\$0.00	\$0			
Repair/upgrade access controls		allow		#N/A	\$0.00	\$0			
Other				#N/A	\$0.00	\$0			
SPILLWAY MAINTENANCE									
Repair erosion		m3		#N/A	\$0.00	\$0			
Clear spillway		each		#N/A	\$0.00	\$0			
CWTS MAINTENANCE									
Maintain flow, restore vegetation		allow		#N/A	\$0.00	\$0			
POST-CLOSURE WATER TREATMENT**									
Annual water treatment cost, from "Water Treatment"						\$0			
Subtotal, Annual post-closure costs						\$15,423			
Discount rate for calculation of net present value of post-closure cost, %				0.00%					
Number of years of post-closure activity				1 years					
Present Value of payment stream						\$15,423	\$1,342		

*Regulatory costs - annual reporting, management plans, progress reports etc.
Include water treatment cost from "Water Treatment" worksheet if treatment is considered long term, such as ARD/ML.

FEDERAL RECLAIM OUTPUTS

Underground Mine Name		UG Mine # 1								Source of Information	Comparison to Proponent's Security	Information Requested from Proponent
ACTIVITY/MATERIAL	Notes	Unit	Qty	Code	Unit Cost	Cost %	Land	Water Cost				
CONTROL ACCESS												
Fence		m		#N/A	\$0.00	\$0		\$0	\$0	Assume as-constructed bulk sample trench is long-term stable. Based on Project Description, up to 10 tonnes of rock may be broken out of 10 trenches where each sample would weigh up to one tonne. Assume 50% waste rock from bulk sample (5 tonnes) is PAG and requires removal from site at closure. Assume disposal location for PAG waste rock located in Alberta. It is assumed all bulk sample has already been removed from site. Tipping fee assumed based on reasonable tipping fees for metal contaminated soil in Alberta, Tipping fee is adjusted for inflation from Feb '22. Transportation off-site is included under Demobilize Waste in the Mobilization tab. Assume 90% Terr; 10% Fed. based on drill holes per terr/fed lease. Applies inflation from 2022 to Jan 2023	Not included in proponent's estimate	Confirm the estimated quantity of PAG waste rock generated from the bulk sampling program
Signs		each		#N/A	\$0.00	\$0		\$0	\$0			
Block roads		m3		#N/A	\$0.00	\$0		\$0	\$0			
Berm		m3		#N/A	\$0.00	\$0		\$0	\$0			
Concrete wall in portals		m3		#N/A	\$0.00	\$0		\$0	\$0			
Trench stabilization/regrade	Assume as-constructed long-term stable.	m3	0	#N/A	\$0.00	\$0		\$0	\$0	\$1		
Waste rock disposal fee	Tipping fee of \$30./tonne	tonne	5	#N/A	\$30.00	\$15	100%	\$15	\$0	\$1		
Replace top soil cover	Assume fill and level/grade trench area.	m3	37.5	SB3L	\$5.10	\$19	100%	\$19	\$0	\$4		
Revegetate trench area	Assume trench area is revegetated.	ha		#N/A	\$0.00	\$0		\$0	\$0	\$0		
Backfill Portal		m3		#N/A	\$0.00	\$0		\$0	\$0			
Backfill Portal		m3		#N/A	\$0.00	\$0		\$0	\$0			
Cap raise # 1		m3		#N/A	\$0.00	\$0		\$0	\$0			
Cap raise #2		m3		#N/A	\$0.00	\$0		\$0	\$0			
Cap shaft #1		m3		#N/A	\$0.00	\$0		\$0	\$0			
Cap shaft #2		m3		#N/A	\$0.00	\$0		\$0	\$0			
Backfill adits		m3		#N/A	\$0.00	\$0		\$0	\$0			
Backfill open stope		m3		#N/A	\$0.00	\$0		\$0	\$0			
Concrete cap over open stope		m3		#N/A	\$0.00	\$0		\$0	\$0			
Other				#N/A	\$0.00	\$0		\$0	\$0			
REMOVE HAZARDOUS MATERIALS												
Remove hazardous materials, U/G labor		mandays		#N/A	\$0.00	\$0		\$0	\$0			
Remove/decontam. stationary & elect. equip		mandays		#N/A	\$0.00	\$0		\$0	\$0			
Remove/decontam. mobile equipment		each		#N/A	\$0.00	\$0		\$0	\$0			
Remove misc. haz. mat & explosives		kg		#N/A	\$0.00	\$0		\$0	\$0			
Other				#N/A	\$0.00	\$0		\$0	\$0			
INSTALL BULKHEADS												
Bulkheads to control water flow		each		#N/A	\$0.00	\$0		\$0	\$0			
Grout bulkhead		m3		#N/A	\$0.00	\$0		\$0	\$0			
FLOOD MINE												
Supply/install pump		each		#N/A	\$0.00	\$0		\$0	\$0			
Supply/install piping system		each		#N/A	\$0.00	\$0		\$0	\$0			
Operate pumps to flood workings		m3		#N/A	\$0.00	\$0		\$0	\$0			
Other				#N/A	\$0.00	\$0		\$0	\$0			
INSTALL GROUNDWATER COLLECTION SYSTEM												
Excavate/install sumps		m2		#N/A	\$0.00	\$0		\$0	\$0			
Install pumping wells		m3		#N/A	\$0.00	\$0		\$0	\$0			
Install pumps/pipelines/power supply		LS		#N/A	\$0.00	\$0		\$0	\$0			
SPECIALIZED ITEMS												
Install water quality monitoring pipes		personhours		#N/A	\$0.00	\$0		\$0	\$0			
Install permanent pumping system		each		#N/A	\$0.00	\$0		\$0	\$0			
Other				#N/A	\$0.00	\$0		\$0	\$0			
						Total	\$34	\$34	\$0			
						% of Total		100%	0%			
										Inflation		
										Land Cost	Water Cost	
										\$5	\$0	

Federal cost reported here.
Assume 90% territorial and 10% federal based on described work in Project Description.

Building / Equip Name				Bldg / Equip #:									
ACTIVITY/MATERIAL	Notes	Units	Quantity	Cost Code	Unit Cost	% Cost Land	Land Cost	Water Cost	Inflation	Source of Information	Comparison to Proponent's Security	Information Requested from Proponent	
DISPOSE MOBILE EQUIPMENT													
Decontaminate and ship off-site		allow		#N/A	\$0.00	\$0	\$0	\$0					
Decontaminate and dispose on-site		allow		#N/A	\$0.00	\$0	\$0	\$0					
										Assume 4 drills for Fi-Shorty-Ki & Perlis leases, assuming 4 out of 8 total drills are at NITE/BIG/ECHO leases based on CRP.			
										Assume 50/50 terrified split for drills due to uncertainty in drill location at time of abandonment. Based on CRP, drills working on territorial leases may be stored on Federal land of Territorial land at time of abandonment.			
										Assume approx. 5 hrs per drill to pack up and remove to Yellowknife, based on Proponent's estimate.	Included in Proponent's estimate.		
Drill removal - supervisor labour	Hidden Lake Camp (Fi-Shorty (formerly Hi)-Ki lease): 4 drills. 1 supervisor. 5 hrs/drill to demob to Yellowknife.	personhrs	20	Superl	\$52.00	\$1,040	100%	\$1,040	\$0	\$225 Assume 1 supervisor to oversee work.	4 at Fi-Shorty-Ki (federal) and 2 at NITE.BIG,ECHO (terr.)	Confirm the total number of drills and anticipated distribution between federal and territorial lands in their CRP.	
										Assume 4 drills for Fi-Shorty-Ki leases, assuming 4 out of 8 total drill are at NITE/BIG/ECHO leases based on CRP.			
										Assume approx. 5 hrs per drill to pack up and remove to Yellowknife, based on Proponent's estimate.	Included in Proponent's estimate.		
Drill removal - drill crew labour	Hidden Lake Camp (Fi-Shorty (formerly Hi)-Ki lease): 4 drills. Drill crew of 4. 5 hrs/drill to demob to Yellowknife.	personhrs	80	lab-sl	\$41.00	\$3,280	100%	\$3,280	\$0	\$708 territorial leases are stored on Federal land at time of abandonment.	Describes 6 drills total 4 at Fi-Shorty-Ki (federal) and 2 at NITE.BIG,ECHO (terr.)		
										Assume 4 drills for Fi-Shorty-Ki leases, assuming 4 out of 8 total drill are at NITE/BIG/ECHO leases based on CRP.			
										Assume approx. 5 hrs per drill to pack up and remove to Yellowknife, based on Proponent's estimate.	Included in Proponent's estimate.		
Drill removal - Hiab	Hidden Lake Camp (Fi-Shorty (formerly Hi)-Ki lease): 4 drills. 2 loads/drill. 5 hrs/drill to demob to Yellowknife by flatbed truck.	hrs	40	Hiabl	\$155.00	\$6,200	100%	\$6,200	\$0	\$1,339 territorial leases are stored on Federal land at time of abandonment.	Describes 6 drills total 4 at Fi-Shorty-Ki (federal) and 2 at NITE.BIG,ECHO (terr.)		
Other REMOVE BUILDINGS - see note below													
Accommodation Complex	Hidden Lake Camp Temporary structures: tent, soft-sided Sleepers (18), First Aid (1), Kitchen (2)	m2	484.6	BRWL	\$27.50	\$13,327	100%	\$13,327	\$0	\$2,879 Quantities and structure type from CRF At Hidden Lake Camp, therefore Federal (based on Project Description)	Included in Proponent's estimate. Includes Drys and toilets Proponent's estimate includes core logging and cutting facilities here.		
Process Facilities	Hidden Lake Camp Temporary structures: tent, soft-sided Mens Dry (1), Womens Dry (2), Offices (2)	m2		#N/A	\$0.00	\$0		\$0	\$0	Included in Warehouse Shops and Other Quantities and structure type from CRF At Hidden Lake Camp, therefore Federal (based on Project Description)	Included in Proponent's estimate Excludes the Drys (see Accommodation Complex)		
Offices, Repair, Lab, Warehouse		m2	136.7	BRWL	\$27.50	\$3,760	100%	\$3,760	\$0	\$812			
Storage Facilities		m2		#N/A	\$0.00	\$0		\$0	\$0				
Water and Wastewater Treatment Facilities		m2		#N/A	\$0.00	\$0		\$0	\$0				
U/G Heating Plan		m2		#N/A	\$0.00	\$0		\$0	\$0				
Emulsion Plant		m2		#N/A	\$0.00	\$0		\$0	\$0				
AN Storage Facility		m2		#N/A	\$0.00	\$0		\$0	\$0				
Warehouse, Shops and Other	Hidden Lake Camp Temporary structures: tent, soft-sided Core logging (3), Core cutting (3), Toilets (2)	m2	231.8	BRWL	\$27.50	\$6,374	100%	\$6,374	\$0	\$1,377 Quantities and structure type from CRP Based on Project Description, structures are located at Hidden Lake Camp, therefore on Federal land	Included in Proponent's estimate under Process Facilities. Excludes the toilets (see note for Accommodation Complex)		
Generator shed	Hidden Lake Camp Generator Shack (3)	m2	54.4	BRWL	\$27.50	\$1,496	100%	\$1,496	\$0	\$323 Quantities and structure type from CRP Based on Project Description, structures are located at Hidden Lake Camp, therefore on Federal land	Included in Proponent's estimate Excludes 2 generator shacks	Confirm the number of generator shacks located on territorial and federal land.	
Storage Facility at Laydown/Airstrip		m2		#N/A	\$0.00	\$0		\$0	\$0				
Fuel tanks	Three (3) 25,000 L fuel tanks. Additional fuel stored in drums, cylinders, tubes, cans, pails See 'Chemicals' and 'Mob' for removal and disposal.	each		#N/A	\$0.00	\$0		\$0	\$0	CRP and LUP amendment application indicates 3 fuel tanks (25,000 L each) stored on fed land, with additional fuel storage in drums, cylinders, tubes, cans or pails. Assume fuel tanks are removed intact, thus no teardown required. Transport costs for fuel tanks and containers addressed in Mob tab. Handling and disposal costs addressed in Chemicals tab.	Included in Proponent's estimate		
Freshwater intake		m2		#N/A	\$0.00	\$0		\$0	\$0				
Reclaim pumps		m2		#N/A	\$0.00	\$0		\$0	\$0				
Outfall & Diffuser		m2		#N/A	\$0.00	\$0		\$0	\$0				
Airstrip lighting, navigation, electrician		v		#N/A	\$0.00	\$0		\$0	\$0				
Airstrip lighting, navigation, mechanics		persondays		#N/A	\$0.00	\$0		\$0	\$0				
Break foundation slab		m2		#N/A	\$0.00	\$0		\$0	\$0				
Consolidate & dump boneyard debris		m3		#N/A	\$0.00	\$0		\$0	\$0				
Other		allow		#N/A	\$0.00	\$0		\$0	\$0				
LANDFILL FOR DEMOLITION WASTE													
Place rock cover		m3		#N/A	\$0.00	\$0		\$0	\$0				
Place soil cover		m3		#N/A	\$0.00	\$0		\$0	\$0				
Vegetate		ha		#N/A	\$0.00	\$0		\$0	\$0				
GRADE AND CONTOUR PADS													
Accommodation Complex	scarify area beneath and around building and tents + 5%	ha	0.095	scfy	\$4,300.00	\$410	100%	\$410	\$0	\$89 Uses Proponent's approach of tent and building area footprint + 5%. Use camp and building area footprint described in CRP.	Included in Proponent's estimate Estimates footprint area of 871.25m2 Assumes additional 5% for area around footprint.	clarify reclamation activities and area estimate	
Process Facilities		ha		#N/A	\$0.00	\$0		\$0	\$0				
Offices, Repair, Lab, Warehouse		ha		#N/A	\$0.00	\$0		\$0	\$0				
										Included in Proponent's estimate under the Territorial tab. Assume misplacement of cost item in Proponent's estimate. Proponent's estimate includes two additional areas to be scarified: 1) Warehouse, Shops and Other under Grade and Contour Pads and 2) under Scarify laydown areas under Reclaim Roads. Both of these areas have an estimated foot print of 2500m2 or 0.25 ha (50m by 50m) however, are not described nor identified in the Application documents.			
										Uses total footprint of equipment, storage, and helipad areas based on site map (Project Description - Figure 4). Excludes two additional areas in Proponent's estimate (see right for description). These two areas are not identified nor described in the Application documents.			
Storage Facilities	Scarify equipment/storage laydown area	ha	1.3	scfy	\$4,300.00	\$5,590	100%	\$5,590	\$0	\$1,207		Identify and confirm areas to be scarified.	
Water and Wastewater Treatment Facilities		ha		#N/A	\$0.00	\$0		\$0	\$0				
U/G Heating Plan		ha		#N/A	\$0.00	\$0		\$0	\$0				

Emulsion Plant	ha	#N/A	\$0.00	\$0	\$0	\$0
Warehouse, Shops and Other	ha	#N/A	\$0.00	\$0	\$0	\$0
Place rock cover	m3	#N/A	\$0.00	\$0	\$0	\$0

Re-vegetate										Assume total building footprint x10 for camp/pad/fuel cache and equipment/storage laydown footprint based on Proponent's estimate. Included in Proponent's estimate under a different activity/material label "Vegetate".	
Camp/building/fuel cache areas	Hidden Lake Camp									Based on Proponent's estimate, 50% of building/camp/fuel cache and equipment/storage footprint requires revegetation. Proponent's cost uses RECLAIM cost code "scfyl".	clarify reclamation activities and area estimate
Equipment/storage laydown areas	Vegetate	ha	6.95 VHFL	\$4,000.00	\$27,815	100%	\$27,815	\$0	\$6,008		
Drill pads - Re-vegetate	Vegetate									Assume drill pad size based on Proponent's estimate. Assume 20% of total drill pad area requires re-veg, based on Proponent's estimate. CRP indicates 281 drill holes in 2023-2024. Of these 281 holes, 22 drill holes (~10%) are on the Federal Lease NT-3366. Therefore, assume 10% of drill holes/pads located on federal land.	Excludes 11 drill pads for re-veg. Estimates drill pads = 10m x 20 m Assumes costing for reveg of 1 ha of land.
	200 m2/drill pad	ha	0.1 VHFL	\$4,000.00	\$448	100%	\$448	\$0	\$97		
Drill cuttings sumps	Backfill, recontour, stabilize									Sump footprint (1 m2/sump) from Proponent's estimate. Uses Proponent's unit cost for backfill, recontour and stabilize. Assume infill material is adjacent to sump from initial excavation. Assume 1 sump/drill hole, with number of drills holes assumed as noted above.	Includes project-specific sump backfill/recontour unit cost. Excludes 11 drill holes
	1 m2/sump	m2	22 #N/A	\$100.00	\$2,200	50%	\$1,100	\$1,100	\$475		
Drill holes - capping	Clay bentonite for capping.	kg	504 #N/A	\$2.20	\$1,109	50%	\$554	\$554	\$554	CRP indicates drill holes are to be capped/sealed with plugs or concrete. Assume 3" diameter drill holes. Assume clay bentonite cap for 2 m. Approx. 0.01 m3/drill hole or 18 kg/hole. Estimate approx. \$2.2/kg based on retail rates. Assume mobilized with other items/crew in Mob tab. Number of drills holes terrifed split as noted above.	Exclude 11 drill holes
Drill holes - cap/plug	Assume approx. 10% of drill holes on federal land	personhours	56 LAB-SH	\$49.60	\$2,778	50%	\$1,389	\$1,389	\$600	Assume 2 skilled labourers to plug/cap drill holes at: 0.5 hr to plug/cap 0.5 hr to move to next hole Thus, 1 hr/drill hole Assume 10% of drill holes located on federal land as noted above	Not included in Proponent's estimate. Confirm reclamation activities for drill holes
Grade Greywater Sump	2 sumps at Hidden Lake Camp 1 sump by kitchen (6m by 3m by 1m) 1 sump by helpad (1 m by 1m by 1m)	allowance	1 #N/A	\$200.00	\$200	100%	\$200	\$0	\$0	Description based on Proponent's estimate, CRP (Final Closure), an WMMP (Sumps). Sump by dining hall (1m by 6m by 3 m) and by core cutting tents (1m by 1m by 1m) Assume cost is for both sumps at the hidden lake camp. Assume Proponent's project/unit cost based on Proponent's Terr. estimate for sump of similar dimensions. Assume typo in Proponent's sump dimension (1m by 0.5m by 0.5 m) and lower project cost (\$100)	Proponent's estimate describes different sump dimension (1m by 0.5m by 0.5 m) and lower project cost (\$100) Confirm sump dimensions and number of sumps

PUNCTURE LINED SUMPS						
Puncture liner and place soil cove	m3	#N/A	\$0.00	\$0	\$0	\$0
RECLAIM ROADS						
Remove culverts	each	#N/A	\$0.00	\$0	\$0	\$0
Remove bridges	each	#N/A	\$0.00	\$0	\$0	\$0
Scarify and install water break	ha	#N/A	\$0.00	\$0	\$0	\$0
Scarify airstrip	ha	#N/A	\$0.00	\$0	\$0	\$0
Scarify laydown areas	ha	#N/A	\$0.00	\$0	\$0	\$0
Vegetate	ha	#N/A	\$0.00	\$0	\$0	\$0

Winter roads	Remove snow fills and ice bridges on winter road portages	each	1 #N/A	\$500.00	\$500	100%	\$500	\$0	\$109	CRP indicates ice bridges at stream crossings are to be v-notched as part of winter road reclamation. Assume Proponent's proposed site-specific unit cost for removing snow fills and ice bridges on portages. Per Project Description maps, there is stretch of road (approx. 2.5km) through the Hidden Lake Camp that is on federal land and another stretch of road (approx. 2.2) on the south-east T-L leases (Perlis) that are also on federal land. Estimate up to 1 portage on federal land based on site maps.	Identify number of anticipated ice bridges/portages
Other										Included in Proponents estimate under Grade and Contour Pads Assumes 6 portages	
SPECIALIZED ITEMS											
Other		ha	#N/A	\$0.00	\$0	\$0	\$0	\$0			
Total				\$76,526	\$73,482	96%	\$3,043				
% of Total							4%				

Note: Unit costs are based on 3m high, single storey building. Scale larger building areas accordingly. E.g. 10m high building multiply area by 3.3 (10m/3m)

Inflation	
Water	
Land Cost	
Cost	
\$15,709	\$538

1 Chemicals/Soil Area Name:

Note: The procedures, equipment and packaging for clean up and removal of chemicals or contaminated soils are highly dependent on the nature of the									
ACTIVITY/MATERIAL	Notes	Units	Quantity	Cost Code	Unit Cost	Cost	% Land Cost	Water Cost	Inflation
HAZARDOUS MATERIALS AUDIT									
Hazardous materials audit		mandays		#N/A	\$0.00	\$0		\$0	\$0
CONSOLIDATION OF HAZARDOUS MATERIALS									
Environmental technician/coordinator		persondays	12	ENVCOH	\$130.00	\$1,560	50%	\$780	\$780
Decontaminate: oil, fue		persondays		#N/A	\$0.00	\$0		\$0	\$0
Decontaminate maintenance shoj		persondays		#N/A	\$0.00	\$0		\$0	\$0
Decontaminate power plan		persondays		#N/A	\$0.00	\$0		\$0	\$0
Decontaminate bulk fuel storage		persondays		#N/A	\$0.00	\$0		\$0	\$0
Decontaminate ANFO plan		persondays		#N/A	\$0.00	\$0		\$0	\$0
Decontaminate offices/warehouse/accor		persondays		#N/A	\$0.00	\$0		\$0	\$0
Removal of asbestos siding on building		m2		#N/A	\$0.00	\$0		\$0	\$0
Removal of friable asbestos on equipmer		m2		#N/A	\$0.00	\$0		\$0	\$0
Other	Support/Assist Enviro Tech/Coord	persondays	12	lab-sh	\$49.60	\$595	50%	\$298	\$298
HAZARDOUS MATERIALS REMOVAL									
Waste fuel - diesel tanks	Hidden Lake Camp 10% of total max on site	litre	7500	ORH	\$1.20	\$9,000	50%	\$4,500	\$4,500
Waste fuel - diesel, aviation and gasoline	Hidden Lake Camp 10% of total max on site	litre	2665	ORL	\$0.43	\$1,146	50%	\$573	\$573
Propane	Hidden Lake Camp 10% of total max on site	litre	364	ORL	\$0.43	\$157	50%	\$78	\$78
Other - various lubricants (e.g., drilling fluids)	Hidden Lake Camp 10% of total max on site	litre	220	ORL	\$0.43	\$95	50%	\$47	\$47
Waste Oil		litre		#N/A	\$0.00	\$0		\$0	\$0
Assay & environmental lab reagent		kg		#N/A	\$0.00	\$0		\$0	\$0
Machine shop paints, solvents et		litre		#N/A	\$0.00	\$0		\$0	\$0
Glycol		litre		#N/A	\$0.00	\$0		\$0	\$0
Process reagents		kg		#N/A	\$0.00	\$0		\$0	\$0
Nuclear sources		allow		#N/A	\$0.00	\$0		\$0	\$0
Other hazardous materials	36 barrels of waste fuel assume 10% remaining	allow	0	orh	\$1.20	\$0		\$0	\$0
HAZARDOUS MATERIALS									
Transportation to disposal facilit	included in Mob/Demob tat	hrs		#N/A	\$0.00	\$0		\$0	\$0
Disposal fees	hazardous materials	m3	5	#N/A	\$240.00	\$1,200	50%	\$600	\$600
Other				#N/A	\$0.00	\$0		\$0	\$0
CONTAMINATED SOILS									
Contam. soil investigation - Phase 1	Phase 1 ESA	allow	1	cs1l	\$7,500.00	\$7,500	50%	\$3,750	\$3,750
Contam. soil investigation - Phase :		each		#N/A	\$0.00	\$0		\$0	\$0
Soil sampling for Phase 1	Soil sampling for Phase 1 ESA	allow	6	#N/A	\$215.00	\$1,290	50%	\$645	\$645
CONTAMINATED SOIL REMOVAL									
Excavate and transport to onsite facilit		m3		#N/A	\$0.00	\$0		\$0	\$0
Manage hydrocarbon remediation at facili		m3		#N/A	\$0.00	\$0		\$0	\$0
Reagents/stabilizing agen		m2		#N/A	\$0.00	\$0		\$0	\$0
Excavate	Hydrocarbon contaminated soil	m3	27.23	SB1L	\$4.30	\$117	50%	\$59	\$59
Disposal fees	Hydrocarbon contaminated soil	m3	27.23	#N/A	\$300.00	\$8,168	50%	\$4,084	\$4,084
Contour decontaminated area	Contouring excavated area	m3	27.23	DSH	\$3.80	\$103	50%	\$52	\$52
CONTAMINATED SOIL VERY LOW PERMEABILITY COVER									
Supply geomembrane, HDPE, ES3, GCI		m2		#N/A	\$0.00	\$0		\$0	\$0
Upper and lower bedding layer		m3		#N/A	\$0.00	\$0		\$0	\$0
Install geomembrane, HDPE, ES3, GCI		m2		#N/A	\$0.00	\$0		\$0	\$0
Erosion protection laye		m3		#N/A	\$0.00	\$0		\$0	\$0
Vegetate		m2		#N/A	\$0.00	\$0		\$0	\$0
Install infiltration/seepage instrumentation		allow		#N/A	\$0.00	\$0		\$0	\$0

Other	#N/A	\$0.00	\$0	\$0	\$0
OTHER	#N/A	\$0.00	\$0	\$0	\$0
		Total	\$30,930	\$15,465	\$15,465
		% of Total		50%	50%

Inflation	
Land	Water
Cost	Cost
\$2,586	\$2,586

1 Interim Care and Maintenance

ACTIVITY/MATERIAL	Notes	Units	Quantity	Cost Code	Unit Cost	Cost	Inflation	Source of Information	Comparison to Proponent's Security
INTERIM CARE & MAINTENANCE									
on-site caretaker		manmonths		#N/A	0	\$0			
extra personnel		manmonths		#N/A	0	\$0			
-electrician		manmonths		#N/A	0	\$0			
-mechanic		manmonths		#N/A	0	\$0			
annual fuel		litre		#N/A	0	\$0			
misc. supplies		allow		#N/A	0	\$0			
pick-up truck		each		#N/A	0	\$0			
small dozer		allow		#N/A	0	\$0			
small excavator		allow		#N/A	0	\$0			
snow machine		allow		#N/A	0	\$0			
communications		allow		#N/A	0	\$0			
SNP/AEMP water sampling & reporting		each		#N/A	0	\$0			
geotechnical assessment		each		#N/A	0	\$0			
interim water treatment				#N/A	\$0	\$0			
Other	ICM Inspection	allow	1	#N/A	2500	\$2,500	N/A, current rates	Uses Proponent's cost allowance. No inflation due to current estimated project specific cost. Assume Federal amount shown	Included project-specific cost allowance. Includes travel time and transport. Federal (under GNWT Tab)
						Annual Interim C&M Cost			
Number of years of ICM						Total		1 years ICM assumed.	included in Proponent's estimate

1 Mobilization/Demobilization:

ACTIVITY/MATERIAL	Notes	Units	Quantity	Cost Code	Unit Cost	Cost	Inflation	Source of Information	Comparison to Proponent's Security	Information Requested from Proponent
MOBILIZE HEAVY EQUIPMENT								Per RECLAIM manual, it is assumed existing on-site equipment is not available for use in reclamation. Therefore, assume below equipment is required to be mobilized/demobilized to complete winter road construction and reclamation activities. Assume average 1.5 hr travel time between Yellowknife and all leases based on site maps. Unless otherwise stated, assume fed/terr split based on capital cost split. Federal cost reported only.	Costs shown are territorial costs unless otherwise noted. Assume difference in Fed./Terr. split differs based on differences in proportion of capital cost	Confirm reclamation equipment requirements.
Reclamation Equipment										
Excavators	1 piece. Winter road construction/site reclamation. Transport by 1 flat deck truck.	hrs	1.5	hiabl	\$155	\$112		\$24 Assume 1 load per each piece of equipment.	Included in Proponent's estimate.	
Dozers	1 piece. Winter road construction/site reclamation. Transport by 1 flat deck truck.	hrs	1.5	hiabl	\$155	\$112		\$24 Assume 1 load per each piece of equipment.	Included in Proponent's estimate.	
Loader	1 piece. Winter road construction/site reclamation, loading flat decks. Transport by 1 flat deck truck.	hrs	1.5	hiabl	\$155	\$112		\$24 Assume 1 load per each piece of equipment.	Included in Proponent's estimate.	
Light duty vehicles	3 vehicles. Worker access. Addressed with worker mobilization.	hrs		#N/A	\$0	\$0		\$0 costs addressed with worker mobilization/demobilization.	Included in Proponent's estimate.	
Water truck	1 piece. Winter road construction/site reclamation. Addressed with worker mobilization.	hrs		#N/A	\$0	\$0		\$0 addressed with worker mobilization/demobilization.	Included in Proponent's estimate.	
Light duty vehicles	Rental fee. 3 trucks for all leases.	days	27	#N/A	\$200	\$5,400	\$1,166	Assume 3 trucks. Typical daily rental rate assumed. Assume mobilization of light trucks to site is addressed with worker mobilization costs below. Assume reclamation program duration based on reclamation activities on federal land (9 days). Federal only cost reported. Per Proponent's correspondence (Mar 17), listed the addition of a snow cat as a required equipment to support reclamation of the fed/terr leases to "open the existing WR to access the campsite."	Proponent's estimate assumes 16 day program associated to federal land. Proponent's estimate includes an additional line cost item of 2 trucks for 21 days in line item "Other" without providing rationale.	
Snow cats	1 piece. Winter road construction/site reclamation. Transport by 1 flat deck truck.	hrs	1.5	hiabl	\$155	\$112		\$24 Assume 1 load per each piece of equipment.	Not included in Proponent's estimate.	
Other										
MOBILIZE MISC. EQUIPMENT										
Pump shipping		each		#N/A	\$0	\$0				
Pipe shipping		m		#N/A	\$0	\$0				
Minor tools and equipment		allow		#N/A	\$0	\$0				
Truck tires		allow		#N/A	\$0	\$0				
Other		allow		#N/A	\$0	\$0				
MOBILIZE CAMP								Adopted Proponent's estimate. Assume minimal camp requirements Assume current rate, thus no inflation Assume Federal cost reported only.	Included in Proponent's estimate Assume minimal camp requirements as exploration camp will be taken down as part of reclamation activities.	
Reclamation activities		allow	1	#N/A	\$4,000	\$4,000	N/A, current rates			
Long term reclamation activities (eg pump flooding)		allow		#N/A	\$0	\$0				Confirm schedule of anticipated reclamation activities including any shift changes
MOBILIZE WORKERS										
Reclamation activities - travel time	All activities 1 supervisor. Mob and demob. Transport by pick-up truck. 2 week shift, 2 mob events.	hrs	6	SUPERL	\$52	\$151		\$33 Assume 1 supervisor required for winter road construction, drill site reclamation and demob. Assume 1.5 hr travel time from Yellowknife (3 hr round trip). Assume transport to camp by light duty pick up truck. Assume shift change every 2 weeks. Assume supervisor is shared between leases, with federal/territorial split based on capital cost split. Federal cost reported only.	Includes costing for 3 hrs of travel time (round trip) for 1 supervisor, split between Mod and Demob. Assume 1 shift	
Reclamation activities - travel time	Drill demob/reclamation 4 person drill crew. Mob and demob. Transport by pick-up trucks. 2 week shift, 2 mob events.	hrs	24	LAB-SL	\$41	\$475	\$103	Assume 4 person drill crew required for drill site reclamation and demob based on Proponent's estimate. Assume 1.5 hr travel time from Yellowknife (3 hr round trip). Assume transport to camp by light duty pick up truck. Assume shift change every 2 weeks. Assume drill crew is shared between leases, with federal/territorial split based on capital cost split. Federal cost reported only.	Includes costing for 3 hrs of travel time (round trip) for 5 person crew, split between Mod and Demob. Assume 1 shift	
Reclamation activities - travel time	Winter road construction 2 skilled labourers. Mob and demob. Transport by pick-up truck. 2 week shift, 2 mob events.	hrs	12	LAB-USL	\$31	\$180	\$39	Assume 2 labourers required for winter road construction. Assume 1.5 hr travel time from Yellowknife (3 hr round trip). Assume transport to camp by light duty pick up truck. Assume shift change every 2 weeks. Assume labourers shared between leases, with federal/territorial split based on capital cost split. Federal cost reported only.	Not included in Proponent's estimate.	
Reclamation activities - travel time	Winter road construction 2 equipment operators. Mob and demob. Transport by pick-up truck. 2 week shift, 2 mob events.	hrs	12	OPERL	\$41	\$238	\$51	Assume 2 equipment operators required for winter road construction. Assume 1.5 hr travel time from Yellowknife (3 hr round trip). Assume transport to camp by light duty pick up truck. Assume shift change every 2 weeks. Assume operators shared between leases, with federal/territorial split based on capital cost split. Federal cost reported only.	Not included in Proponent's estimate.	
Long term reclamation activities (eg pump flooding) - transport		each		#N/A	\$0	\$0				
Long term reclamation activities (eg pump flooding) - travel time		each		#N/A	\$0	\$0				
Airfare - Reclamation Monitoring		each		#N/A	\$0	\$0				
WORKER ACCOMMODATIONS										

							Total persondays is based on estimated crew and activity time requirements (see estimates below).	
							Additional camp support staff are expected to be required beyond the approx. 9 person crew. However, costing for additional camp support staff is assumed addressed with camp operation costs.	
Reclamation activities	Drill demob, site reclamation, winter road construction/operation	persondays	35.7 ACCML	\$100	\$3,570	\$771	Included in Proponent's estimate	Assumes a 6 person crew
Long term reclamation activities (eg pump flooding)		personmonths	#N/A	\$0	\$0		Assumes a 21 day (3 weeks) program	Provide schedule of project activities, including equipment, crew and time requirements.
MOBILIZE FUEL								
							Estimate approx. 5800 L total fuel requirement based on estimated equipment requirements (see calculations below).	
							Estimate 28 fuel drums. Assume 25 drums per truck, thus 2 truck loads.	
							Assume 1.5 hr travel time from Yellowknife (3 hr round trip).	
							Assume transport by flat-bed truck.	
							Federal cost reported only.	
Fuel freight - reclamation activities & accommodations		hrs	6 HIABL	\$155	\$930	\$201	Assume cost of fuel is included with costing for reclamation activities.	Proponent's estimate assumes fuel estimate of 2050 L to support the camp and equipment for 2 weeks. Discrepancy between available fuel and program length.
Fuel freight - long term reclamation activities		litre	#N/A	\$0	\$0		Uses RECLAIM unit cost for corresponding fuel quantity.	
WINTER ROAD								
		Roads located on Federal Land						
		* Hidden Lake Camp						
Construction and operation	* Perlis Lease NT-3366	km	4.7 WRCL	\$2,000	\$9,400	\$2,030	Estimate total of 4.7km of winter road is located on federal land based on site maps	
Limited winter use		km	#N/A	\$0	\$0		Assume approximately 2.2 km of winter road required on federal land (one season)	
Winter road tariff		km	#N/A	\$0	\$0			
DEMOLIBIZE HEAVY EQUIPMENT								
							Per RECLAIM manual, it is assumed existing on-site equipment is not available for use in reclamation.	
							Therefore, assume below equipment is required to be mobilized / demobilized to complete winter road construction and reclamation activities.	
							Assume average 1.5 hr travel time between Yellowknife and all leases based on site maps.	
							Assume fed/terr split based on capital cost split.	
							Federal cost reported only.	
Reclamation Equipment								
Excavators	1 piece. Winter road/site reclamation. Transport by 1 flat deck truck.	hrs	1.5 hiabl	\$155	\$112	\$24	Assume 1 load per each piece of equipment.	Included in Proponent's estimate
Dozers	1 piece. Winter road construction/site reclamation. Transport by 1 flat deck truck.	hrs	1.5 hiabl	\$155	\$112	\$24	Assume 1 load per each piece of equipment.	Not included in Proponent's estimate.
Loader	1 piece. Winter road construction/site reclamation, loading flat decks. Transport by 1 flat deck truck.	hrs	1.5 hiabl	\$155	\$112	\$24	Assume 1 load per each piece of equipment.	Included in Proponent's estimate
Snow cats	1 piece. Winter road construction/site reclamation. Transport by 1 flat deck truck.	hrs	1.5 hiabl	\$155	\$112	\$24	Assume 1 load per each piece of equipment.	Not included in Proponent's estimate.
Light duty vehicles	3 vehicles. Worker access. Addressed with worker mobilization.	hrs	#N/A	\$0	\$0	\$0	Assume trucks will be driven back from site by reclamation staff, with costs addressed with worker mobilization/demobilization.	Not included in Proponent's estimate.
Water truck	1 piece. Winter road construction/site reclamation. Addressed with worker mobilization.	hrs	#N/A	\$0	\$0	\$0	Assume truck driven back from site by reclamation staff, with costs addressed with worker mobilization/demobilization.	Not included in Proponent's estimate.
Operations Equipment							Below quantities from CRP.	
Solids removal equipment cw generator							Assume average 1.5 hr travel time between Yellowknife and all leases (3 hr round trip) based on site maps.	
5 pieces							Assume transport by flat-bed truck.	
15 hiabl							Assume 1 load for each piece of equipment unless otherwise noted	
\$155.00							Assume fed/terr split based on capital cost split due to uncertainty in location of most equipment at the time of abandonment.	
\$1,122							Federal cost reported only.	
\$242							Below quantities included in Proponent's estimate under Bldgs & Equip (Fed) Tab.	
							Excludes Terr./Fed split	
							Additional differences/ notes provided below.	
							Not included in Proponent's estimate.	
Skidder or D-6 bulldozer	4 pieces	hrs	12 hiabl	\$155.00	\$898	\$194		
Water truck	4 piece	hrs	12 hiabl	\$155.00	\$898	\$194		
Excavator	1 piece	hrs	3 hiabl	\$155.00	\$224	\$48		
Grader	1 piece	hrs	3 hiabl	\$155.00	\$224	\$48		
Snow cats	2 pieces	hrs	6 hiabl	\$155.00	\$449	\$97		
Hagglund BV206	1 piece	hrs	3 hiabl	\$155.00	\$224	\$48		
Water pumps	10 pieces	hrs	3 hiabl	\$155.00	\$224	\$48		
ATVs	6 pieces	hrs	3 hiabl	\$155.00	\$224	\$48		
Snow machines	10 pieces	hrs	6 hiabl	\$155.00	\$449	\$97	Assume 2 loads for 10 snow machines	excludes 2 pieces
Pick-up trucks	12 pieces	hrs	36 hiabl	\$155.00	\$2,694	\$582		
(9 pieces Total)								
5 pieces (5kw-10kw)								
1 pieces (20kw)								
Diesel generators	3 pieces (40kw)	hrs	15 hiabl	\$155.00	\$1,122	\$242	Assume 1 load per generator larger than 19 kw (4 total) and 1 load for all generators less than 11 kw.	
Incinerator	1 piece (1500kg)	hrs	3 hiabl	\$155.00	\$224	\$48		
Miscellaneous equipment		hrs	3 hiabl	\$155.00	\$224	\$48		
e.g., core saws, oil heaters, ice auger, blast hole drill								
DEMOLIBIZE CAMP								
							Adopted Proponent's estimate.	
							Assume minimal camp requirements.	
							Assume current rate, thus no inflation.	
							Assume Federal cost reported only.	
Reclamation activities		allow	1 #N/A	\$4,000	\$4,000	N/A, current rates	Included in Proponent's estimate	
DEMOLIBIZE WORKERS							Assume minimal camp requirements as exploration camp will be taken down as part of reclamation activities.	
Reclamation activities - travel time	Included with mob costs.	hrs	#N/A	\$0	\$0			
							Proponent's estimate includes two additional line items for demob crew (1 super and 5 crew members).	
							Proponent's estimate uses units (persondays) and cost code (\$/hr) that are misaligned	
crew transportation		each	#N/A	\$0	\$0		Included in Mobilize Worker.	

DEMobilize WASTE

Demobilize fuel tanks	3x 25,000L fuel tanks located at Hidden Lake Camp	hrs	9	HIABL	\$155	\$1,395	\$301	Assume 1 truck per tank to remove from site. Estimate 3 hrs total per round trip. Assume transport by flat-bed truck.	Not included in Proponent's estimate.	
Demobilize waste	From Hidden Lake Camp	hrs	9	HIABL	\$155	\$1,395	\$301	Based on Proponent's estimate. Assume includes demolished buildings, contaminated soil, site refuse and debris, sewage, remaining fuel drums, and any other inert and hazardous waste. Estimate 3 hrs total per round trip. Assume truck allocation is for hazardous waste removal under the Chemical tab, contaminated soil, and solid waste. Quantities outlined in UG tab Assume waste rock from bulk sample is PAG and requires removal from site. Estimate 3 hrs travel time between Yellowknife and Hidden Lake Camp for transport trucks. Estimate distance by winter road between Camp and bulk sample site for is approx. 10km total (30min round trip) for Ki, Fi, and Shorty leases. Assume 1 hr travel time between Yellowknife and BIG & NITE leases. Assume disposal location for PAG waste rock located in Alberta at approximately 8 hrs travel time from Yellowknife (one-way). Federal cost reported only.	Proponent's estimate includes one line item under Demob Camp category for contaminated soil. 3 loads, round trip to YK by flat-bed truck	
Transport waste rock to disposal facility	Assume PAG. Disposal in Alberta. 5 tonnes 1 round trip required. Tipping fee addressed in UG tab.	hrs	20.5	HIABL	\$155	\$318	\$69	40 tonnes of waste, per Proponent's estimate and correspondence. Based on 2023 Yellowknife landfill tipping fees for commercial waste from outside city.	Proponent's estimate includes one line item under Demob Camp category Provides Tipping fee of \$156/tonne Assumes 40 tonnes	Provide Supporting documentation for project specific tipping fees WMP - Appendix A (correspondences) is missing/not provided
Solid waste tipping fee	Tipping fee	tonne	40	#N/A	\$191.50	\$7,660	N/A, current rates	Minimum equipment charge based on 2023 Yellowknife tipping fees.	Not included in Proponent's estimate.	
Solid waste tipping fee	Minimum equipment charge	allow	1	#N/A	\$130	\$130	N/A, current rates	Estimate 100 L sewage produced per person per day. Assume 20% is blackwater for off-site disposal, thus: 100 L/person/day x 9 people x 9 days = 8,100 L x 20%= 1.62 m3 = 1.62 tonnes. Estimate 1.62 m3 of blackwater for disposal. Assume half solid waste tipping fee	Not included in Proponent's estimate.	
Sewage tipping fee	Assumed \$94.88/m3	m3	1.62	#N/A	\$95.75	\$155	N/A, current rates			
					Total	\$49,497	\$7,247			

Estimated Equipment Fuel Use

Equipment	# of Machines	Days Active	L/hr	Consumption L/day (10hrs/day)	Total fuel (L)	
Excavators	1	2	15	150	300	Assume needed for soil excavation, building teardown, winter road reclamation (approx. 2 days)
Water truck	1	9	12	120	1080	Assume needed for winter road construction/operation (total project duration)
Service Vehicles	3	9	2.5	25	675	Assume needed for total project duration (total project duration)
Loader	1	9	7	70	630	Assume needed for loading flat decks, winter road construction/operation (total project duration)
Dozers	1	9	15	150	1350	Assume needed for winter road construction/operation (total project duration)
Snow Cat	1	9	17	170	1530	Per Proponent's correspondence (Mar 17 '23), assume needed for winter road construction/operation (total project duration)
Camp generator	1	9	2.9	29	261	Assume needed for total project duration
Total Per Day					5826	28 estimate number of barrels (205 L /barrel)

* L/hr for equipment based on rates for typical equipment available online. Actual rates will likely vary based on specific equipment model, standby time, operational effort, environmental conditions, etc.

Major Project Activity Time Estimate

Building Teardown	
Tent frames and pads	1 hr/each, 37 frames/pads = 3.7 days based on size and teardown by equipment/hand.
Total teardown time	3.7 days
Days	3.7
Crew required	4 (1 supervisor, 2 labourer, 1 operator)
Crew quantity (persons) - excluding supervisor	3
Crew days (person days)	11.1
Demob Drill Rigs	
Demob drill rigs	5 hrs/drill
# drills	4
Total time	20 hrs = 2 days (10 hr day)
Days	2
Crew required	5 (1 supervisor, 4 drill crew)
Crew quantity (persons) - excluding supervisor	4
Crew days (person days)	8
Abandon Drill Holes	
Cut/plug/cap time	0.5 hr
Travel time b/w holes	0.5 hr
# holes	280 holes rounded (10% total # for federal land)
Total time	28 hrs = 2.8 days rounded (10 hr day)
Days	2.8
Crew required	2 (2 labourers)
Crew quantity (persons) - excluding supervisor	2

Crew days (person days)		5.6	
Winter Road Construction			
Winter road build rate	10 km/day based on build distance/time for other northern winter roads		
Winter road length		4.7	
Total build time	0.5 day (assume min. half day)		
Days		0.5	
Crew required	3 (1 supervisor, 2 operators, 2 labourers)		
Crew quantity (persons) - excluding supervisor		4	
Crew days (person days)		2	
Total project days		9	
Total persondays (excluding supervisor)		26.7	
Supervisor days		9	Assume supervisor present for total project duration
Total persondays		35.7	
Maximum persons onsite		9	

1 Post-Closure Monitoring & Maintenance:

ACTIVITY/MATERIAL	Notes	Units	Quantity	Cost Code	Unit Cost	Cost	Source of Information	Comparison to Proponent's Security	Information Requested from Proponent
MONITORING & INSPECTIONS									
Annual geotechnical inspection		each		#N/A	\$0.00	\$0			
Survey inspection		each		#N/A	\$0.00	\$0			
Regulatory costs*		each		#N/A	\$0.00	\$0			
Site water monitoring (AEMP and SNP)		each		#N/A	\$0.00	\$0			
- Active closure and flooding		each		#N/A	\$0.00	\$0			
- Post pit flooding		each		#N/A	\$0.00	\$0			
Air Quality Monitoring Program (AQMP)		each		#N/A	\$0.00	\$0			
Wildlife Effects Monitoring Program (WEMP)		each		#N/A	\$0.00	\$0			
Vegetation Monitoring		each		#N/A	\$0.00	\$0			
							Per Project Description, access to leases and camps during. The summer program is supported by helicopter / aircraft. Assume 1 inspection per lease and 1 inspection at Hidden Lake camp, 8 locations total. 8 locations * 0.5 hrs per location = 4 hrs. Assume up to 2 hrs flying time round trip to Yellowknife. 6 hrs total. Included costs based on helicopter quotation from Sahu Helicopters Jan 22, 2021. Flight time = \$1850/hr * 6 hr flight/day = \$11,100 Fuel usage = \$744/hr * 6 hrs = \$4,464 Total = \$15,564 Inflation from Jan 2021 to present applied. Terrified split based on proportion of inspection locations (75:25).		
Helicopter	Support for summer inspection	allowance	1	#N/A	\$15,564.00	\$3,891	\$447 Federal cost reported only	not included in proponent's estimate	Confirm support required for post-closure inspection
							Uses Proponent's cost allowance. No inflation due to current estimated project specific cost. Terrified split based on proportion of inspection locations (75:25). Assume allowance excludes needed helicopter support during summer.	Includes project-specific cost allowance for a one-time follow-up site inspection to confirm no erosion or other issues.	Confirm anticipated inspection activities and criteria for passing inspection.
Other	summer inspection	each	1	#N/A	\$5,000.00	\$1,250	N/A, current rates Federal cost reported only	Federal cost only; no territorial cost split.	
COVER MAINTENANCE									
Repair erosion - infill gullies		allow		#N/A	\$0.00	\$0			
Repair erosion - upgrade diversion ditches		allow		#N/A	\$0.00	\$0			
Remove problem vegetation		allow		#N/A	\$0.00	\$0			
Repair animal damage		allow		#N/A	\$0.00	\$0			
Repair/upgrade access controls		allow		#N/A	\$0.00	\$0			
Other				#N/A	\$0.00	\$0			
SPILLWAY MAINTENANCE									
Repair erosion		m3		#N/A	\$0.00	\$0			
Clear spillway		each		#N/A	\$0.00	\$0			
CWTS MAINTENANCE									
Maintain flow, restore vegetation		allow		#N/A	\$0.00	\$0			
POST-CLOSURE WATER TREATMENT**									
Annual water treatment cost, from "Water Treatment"						\$0			
Subtotal, Annual post-closure costs						\$5,141			
Discount rate for calculation of net present value of post-closure cost, %				0.00%					
Number of years of post-closure activity				1 years					
Present Value of payment stream						\$5,141	\$447		

*Regulatory costs - annual reporting, management plans, progress reports etc.
Include water treatment cost from "Water Treatment" worksheet if treatment is considered long term, such as ARD/ML.

Unit Cost Table (for refining unit costs see "Estimator" worksheet)

		Filter by unit					
ITEM	Detail	COST CODE	UNITS	LOW \$	HIGH \$	SPECIFIED \$	COMMENTS
Accomodation							
		ACCM	manday	100.00	175.00		
Buildings - Decontaminate							
	Asbestos	BDA	m2	25.60	51.20		Low: removal of asbestos siding & flooring; High: removal of insulated pipes, friable asbestos
Buildings - Remove							
	Wood	BRW	m2	27.50	41.00		6.00 Specified: puncture concrete foundation slabs
	Concrete	BRC	m2	40.00	65.00		
	Steel - teardown	BRS1	m2	45.00	65.00		
	Steel - for salvage	BRS2	m2	67.00	100.00		
Concrete work							
	Small pour	CSF	m3	426.50	639.75		Low: YK; High=1.5xLow
	Large pour	CLF	m3	353.50	530.25	2,130.00	Specified: concrete crown pillar
Contaminated Soils							
	ESA Phase 1	CS1	each	7500.00			Low: small, "clean" site
	ESA Phase 1	CS2	each	50000.00			Low: small, "clean" site
	Remediate on site	CSR	m3	47.00	146.00		
Dozing							
	doze rock piles	DR	m3	1.05	2.40		Low cost: doze crest off dump
	doze overburden/soil piles	DS	m3	0.95	3.80		High cost: push up to 300 m
Excavate Rock; Low Spec's and QA/QC							
	drill/blast/load/short haul	RB1	m3	11.40	17.05		Low:quarry operations for bulk fill
	drill/blast/load/long haul	RB2	m3	12.05	17.80		
	RB1 + spread and compact	RB3	m3	12.05	17.80		
	RB2 + spread and compact	RB4	m3	12.50	30.75		
	Specified activity	RBS	m3				
Excavate Rock; High Spec's and QA/QC							
	drill/blast/load/short haul	RC1	m3	12.05	17.80		(e.g. ditch/spillway excavation)
	drill/blast/load/long haul	RC2	m3	12.70	18.40		Low:foundation excavation;High:spillway excavation
	RC1 + spread and compact	RC3	m3	12.70	18.40		e.g. cover construction
	RC2 + spread and compact	RC4	m3	13.50	19.20		e.g. cover construction
	Specified activity	RCS	m3			175.00	Specified-drift excavation
Excavate Rip Rap							
	drill/blast/load/short haul/place	RR1	m3	13.50	17.75		High: quarry & place rip rap in channel
	drill/blast/load/long haul/place	RR2	m3	14.20	20.65		
	source is waste dump/short haul	RR3	m3	7.00			cost includes sorting
	source is waste dump/long haul	RR4	m3	7.60			
	Specified activity	RRS	m3				
Excavate Soil; Low Spec's and QA/QC							
	clear & grub	SBC	m2	3.40	5.00		
	excavate/load/short haul	SB1	m3	4.30	5.90		Low: non-engineered; High:engineered
	excavate/load/long haul	SB2	m3	4.60	7.30		
	SB1 + spread and compact	SB3	m3	5.10	8.90		Low: non-engineered; High:engineered
	SB2 + spread and compact	SB4	m3	5.50	11.00		Low: rehandle waste rock dump by dozing; High:rehandle waste rock by hauling
	Specified activity	SBS	m3	3.20	6.30		High:contour surface - wet or frozen; Specified:haul/place wet infill
	Tailings	SBT	m3	1.35	3.70	15.50	
Excavate Soil, High Spec's and QA/QC							
	excavate/load/short haul	SC1	m3	6.80	9.30		Low: non-engineered; High:engineered
	excavate/load/long haul	SC2	m3	7.10	11.75		
	SC1 + spread and compact	SC3	m3	8.90	14.20		Low: non-engineered; High:engineered (e.g. complex covers, low volume dam construction)
	SC2 + spread and compact	SC4	m3	9.30	23.20		
	Specified activity	SCS	m3			18.80	Backfill adit with waste rock
Fence							
		FNC	m	13.55	203.00		
Fuel and Electricity							
	Fuel cost - gas	FCG	litre	1.05	1.40		
	Fuel cost - diesel	FCD	litre	0.99	1.39		
	Fuel mobilization	FCM	litre	0.22	0.42		High: winter road usage
	Electricity	FCE	kW-h	0.17	0.19	0.49	Low and High:Yellowknife; Specified:diesel generator
Geo-Synthetics							
	geotextile	GST	m2	3.44			Supply and install
	geogrid	GSG	m2	5.75			
	liner, HDPE	GSHDPE	m2	7.95	16.00		Supply and install; large quantity
	liner, ES3	GSES3	m2	20.20			FOB Yellowknife
	geosynthetic installation	GSI	m2	3.16	14.00		Low:geotextile; High:ES3 or HDPE
	bentonite soil ammendment	GSBA	tonne	308.30	348.50		FOB Edmonton, add shipping & mixing
Grouting (/m3 of rock grouted)							
		grout	m3	236.55	286.75		High: cement, FOB Yellowknife
Labour & Equipment Rates							
	Site manager	sman	\$/hr	125.00	152.00		
	Supervisor	super	\$/hr	52.00	91.84		
	Registered engineer	eng	\$/hr	95.00	220.00		
	Environmental coordinator	envco	\$/hr	74.16	130.00		
	Evironmental technologist	envtech	\$/hr	36.00			

Unit Cost Table (for refining unit costs see "Estimator" worksheet)

Filter by unit

Electrician	elec	\$/hr	74.00	95.00	
Journeyman - various	journey	\$/hr	44.00	71.79	
Labour - skilled	lab-s	\$/hr	41.00	49.60	
Labour - unskilled	lab-us	\$/hr	31.00	43.98	
Equipment operator	oper	\$/hr	41.00	65.00	
Heavy duty mechanic	mech	\$/hr	49.00	72.85	
Water treatment plant operator	oper-wt	\$/hr	41.00	59.86	
Security / first aid	safety	\$/hr	36.00	66.97	
Administrative staff	admin	\$/hr	38.00	57.89	
Equipment rates include operator and fuel					
Loader - 4 cu.yd (3.06m3)	load-s	\$/hr	175.00		
Loader - 7 cu.yd (5.35m3)	load-l	\$/hr	315.00		
Excavator - 26.76-30.84 tonnes	exc-s	\$/hr	190.00		
Excavator - 68.95+tonnes	exc-l	\$/hr	420.00		
Grader	grad	\$/hr	190.00		
Dump truck off hwy 30-50 tonnes	truck-s	\$/hr	225.00		
Dump truck off hwy 55-75 tonnes	truck-l	\$/hr	300.00		
dozer, small	dozers	\$/hr	205.00	260.00	
dozer, large	dozerl	\$/hr	490.00	565.00	
smooth drum compactor	comp	\$/hr	155.00		
scooptram, 6 yd3 bucket	scoop	\$/hr	170.00		
flat bed truck with hiab	hiab	\$/hr	155.00		
fuel truck	fttruck	\$/hr	150.00		
water truck	wtruck	\$/hr	58.00	150.00	
Mobilize Heavy Equipment					
Road access	MHER	kmtonne	3.40	10.25	
Air access	MHEA	kmtone	12.00		cargo rate>500lb
Mobilize Camp					
Road access	MCR	each	50000.00		refurbish existing camp
Mobilize Workers					
flight	MW	each	4500.00	9100.00	Low:e.g. 8 passenger; High: Dash 7
Oil Removal					
oil removal	OR	litre	0.43	1.20	Low:waste oil heater; High: ship offsite
PCB Removal					
Remove from site	PCBR	litre	40.20	46.90	Low: shipping, handling & disposal from Yellowknife
Pipes, small (<6in dia.)					
remove/dispose on site	PSR	m	1.00	24.00	Low: remove/dispose on site; High: remove/re-use
supply	PSS	m	6.10	11.10	Low:supply; High:supply and ship
install	PSI	m	25.00		
Pipes, large (>6in dia.)					
remove/dispose on site	PLR	m	22.00	72.00	Low: remove/dispose on site; High: remove/re-use
supply	PLS	m	129.00	143.00	Low:supply; High:supply and ship
install	PLI	m	50.00		
Power Lines					
remove/dispose on site	POWR	m	25.50		
Process Chemicals					
Remove from site	PCR	kg	0.45	2.50	Low: shipping, handling & disposal from Yellowknife
Pumps					
Pump capital cost	PC	each	195000.00		
Pump shipping	PS	each	2500.00		
Pump operating cost	POC	m3	0.12		pump operating costs should be calculated based on pump capacity, fuel costs, etc.
Pump maintenance	PM	allow	25000.00		
Pump sand BackFill					
	PBF	m3	85.00	300.00	
Scarify - road/mine site					
	SCFY	ha	4300	6030	2150
Shaft, Raise & Portal Closures					
Shaft & Raises	SR	m2	645.00	2132.00	Low:pre-cast concrete slabs, little site prep. Area=shaft+>1m all around
Portals	POR	m3	18.80	250.00	1200.00 Low:unit cost code SCS;High:excavate & backfill collapsed portal;Spec: installed pressure plug
Site Inspection Report					
	RPT	each	10000.00	20000.00	
SpillWay - Clear					
	SW	each	3000.00	7000.00	
Survey/Instrumentation					
	SI	each	1800.00	3600.00	2 person crew
Treatment Plant - Construct					
Small (< 1000 m3/d)	TPS	lump sum	9000000	15000000	
Large (> 1000 m3/d)	TPL	lump sum	15000000	46000000	
Constructed Wetland	CWTS	ha	200000	300000	
Treatment Plant - Operate					
	TPO	m3	0.35	2.00	
Treatment Chemicals					
ferric sulphate	ferric	kg	1.19		
ferrous sulphate	ferrous	kg	1.32		
lime	lime	kg	0.56		

Unit Cost Table (for refining unit costs see "Estimator" worksheet)

Filter by unit				
hydrogen peroxide, 35%	hperox	kg	1.50	
Sodium Metabisulfate	Nametab	kg	1.18	
Caustic soda, 50%	caustic	kg	0.74	
Sulfuric acid, 93%	sulfuric	kg	0.31	
flocculant	flocc	kg	6.00	
copper sulphate	copper	kg		
shipping	shipping	kg	0.20	
Vegetation				
Hydroseed, Flat	VHF	ha	4000.00	
Hydroseed, Sloped	VHS	ha	4500.00	
Veg. blanket/erosion mat	VB	ha	13000.00	
Tree planting	VT	ha	2600.00	6000.00
Wetland species	VW	ha		47.72
Water Sampling/Analysis/Reporting				
	WS	each	7000.00	10000.00
Winter Road				
Construction	WRC	km	2000.00	11500.00
Usage	WRU	kmtonne	0.29	

Specified= /m3, Wetland Growth Media Substrate mixed and installed (sand, biochar and fertilizer, woodchips)

APPENDIX B – GENERAL TERMS AND CONDITIONS

USE OF REPORT

This report has been prepared for the specific site, design objective, development and purpose described to ARKTIS Solutions Inc. (ARKTIS) by the Client. The factual data, interpretations and recommendations pertain to a specific site, a specific development, and a specific scope of work. It is not applicable to any other sites, nor should it be relied upon for types of development other than those to which it refers. Any variation of site conditions, purpose, and development plans, or if the project is not initiated within three months of the date of the report may alter the validity of the report. ARKTIS cannot be responsible for use of this report, or portions thereof, unless ARKTIS is requested to review, and if necessary, revise the report.

This report and the assessments and recommendations contained in it are intended for the sole benefit of ARKTIS' Client. No other party may use or rely on this report or any portion thereof without ARKTIS' expressed written consent. If the report was prepared to be included for a specific permit application process, then upon reasonable request of the client, ARKTIS may authorize in writing the use of this report by the regulatory agency as an Approved User for the specific and identified purpose of the applicable permit review process. Any other use of this report by others is prohibited and is without responsibility to ARKTIS.

The report, all plans, data, drawings, and other documents as well as all electronic media prepared by ARKTIS are considered its professional work product and shall remain the copyright property of ARKTIS, who authorizes only the Client and Approved Users to make copies of the report, but only in such quantities as are reasonable and necessary for the use of the report by those parties. The Client and Approved Users may not give, lend, sell, or otherwise make available the report or any portion thereof to any party without the express written consent of ARKTIS. The Client acknowledges that electronic media is susceptible to unauthorized modification, deterioration, and incompatibility and therefore the Client cannot rely upon the electronic media versions of ARKTIS' report or other work products. ARKTIS does not accept any responsibility for the accuracy of any of the data, the analysis or the recommendations contained or referenced in the report when the report is used or relied upon by any party other than ARKTIS' Client or Authorized User unless otherwise authorized in writing by ARKTIS.

LIMITATIONS OF REPORT

The report is of a summary nature and is not intended to stand alone without the reference to the instructions given to ARKTIS by the Client, communications between ARKTIS and the Client, and to any other reports prepared by ARKTIS for the Client relative to the specific site described in the report. In order to properly understand suggestions, recommendations and opinions expressed in this report, reference must be made to the whole of the report. ARKTIS cannot be responsible for use of portions of the report without reference to the entire report.

Unless otherwise stated, the suggestions, recommendations and opinions given in this report are intended only for the guidance of the Client in the design of the specific project. The extent and detail of investigations, including the number of test holes, necessary to determine all of the relevant conditions which may affect construction costs would normally be greater than has been carried out for design purposes. Contractors bidding on, or undertaking the work, should rely on their own investigations, as well as their own interpretations of the factual data presented in the report, as how subsurface conditions may affect their work, including but not limited to proposed construction techniques, schedule, and safety and equipment capabilities.

Classification and identification of soils, rocks, and geologic units have been based on commonly accepted methods employed in the practice of geotechnical engineering and related disciplines. Classification and identification of the type and condition of these materials or units involves judgment, and boundaries between different soil and rock or geologic types or units may be transitional rather than abrupt. Accordingly, ARKTIS does not warrant or guarantee the exactness of the descriptions.

LIMITATIONS OF LIABILITY

The client, and any other parties using this report with the express written consent of the clients and ARKTIS, acknowledge that conditions affecting the financial liability of the site can vary with time and that the conclusions and recommendations set out in this report are time sensitive.

During the performance of the work and the preparation of this report, ARKTIS may have relied on the information provided by persons other than the client. While ARKTIS endeavors to verify the accuracy of such information when instructed to do so by the client, ARKTIS accepts no responsibility for the accuracy or the reliability of such information which may affect the report.

The client, and any other party using this report with the express written consent of the client and ARKTIS, also acknowledge that the conclusions and recommendations set out in this report are based on limited observations and testing on the subject site and that conditions may vary across the site which, in turn, could affect the conclusions and recommendations made.

The client acknowledges that ARKTIS is neither qualified to, nor is it making, any recommendations with respect to the purchase, sale, investment or development of the property, the decisions on which are the sole responsibility of the client.

STANDARD OF CARE

Services performed by ARKTIS for this report have been conducted in a manner consistent with the level of skill ordinarily exercised by members of the profession currently practicing under similar conditions in the jurisdiction in which the services are provided, subject to the time limits and financial and physical constraints applicable to the services. Engineering judgment has been applied in developing the conclusions and/or recommendations provided in this report. No warranty or guarantee, express or implied, is made concerning the test results, comments, recommendations, or any other portion of this report.

ALTERNATE REPORT FORMAT

Where ARKTIS submits both electronic file and hard copy versions of reports, drawings and other project related documents and deliverables (collectively termed instruments of professional service), the Client agrees that only the signed and sealed hard copy versions shall be considered final and legally binding.

The hard copy versions submitted by ARKTIS shall be the original documents for record and working purposes, and, in the event of a dispute or discrepancies, the hard copy versions shall govern over the electronic versions. Furthermore, the Client agrees and waives all future right of dispute that the original hard copy signed version archived by ARKTIS shall be deemed to be the overall original for the Project.

The Client agrees that both electronic file and hard copy versions of instruments of professional services shall not, under any circumstances, no matter who owns or uses them, be altered by any party except ARKTIS. The Client warrants that instruments of professional services will be used only and exactly as submitted by ARKTIS.



Spill Contingency Plan
EREX International Ltd.
MV2022C021,
MV2022L8-0008, MV2022L8-0009

Project	Yellowknife Lithium Project
Location	Bighill – Hidden - Tanco Lakes area, NWT
Date of Submission	March, 2023
Version #	1.1

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APPENDICES

Appendix A: Site Maps

Map 1 – Regional location of EREX's leases.

Map 2 – Property Location detail: Fi-Hi-Ki leases.

Map 3 – Property Location detail: BIG and NITE leases.

Map 4 – Property Location detail: Thor Lease.

Appendix B: Reportable Quantities for NWT Spills

Appendix C: NWT Spill Report Form

Appendix D: Material and Safety Data Sheets (MSDS)

Versions and Revisions

The Spill Contingency Plan (SCP or the Plan) is a living document that will be reviewed annually, at a minimum, and prior to the start of any site activities, with additional reviews as warranted. Updates should be made to reflect changes in spill contingency planning and practices, and new personnel and associated contact information. Table 1 presents a summary of the versions of this Plan and any revisions made; it is updated each time a revision is made to the Plan. This ensures stakeholders have the most current copy of the Plan.

Table 1: Version and Revision History

Version #	Date	Sections/Pages revised	Summary of Changes/Comments
1.0	Sept. 15, 2022	n/a	First submission
1.1	Feb. 10, 2023	p.4, 5, 6, 8, 9, 14, 15, 16, Appendix D	Contacts, Fuel volumes, spills on snow, ice, & water, SDS added additional project info, maps

Table 2: Conformity Table

Revision	Section	Board Direction	Date
1.1	Section 8, page 12	Update to include details about the number of spill kits and where they will be located, and the details of the small spill kits with sorbent pads to be used for transporting fuel (74)	March 2023
1.1	Section 7,	Remove the irrelevant sentence about biological response from Section 7.	March 2023
1.1	Table 7, Page 9	Update the contact information according to the comment by ECCC	March 2023

1.1	Section 2, page 6	Clearly indicate that food and domestic waste, as well as greases, gasoline and glycol-based anti-freeze will be stored in an animal proof containers/containment	
1.1	Table 7, Page 9	Add the contact information for Crown Indigenous Relations and Northern Affairs Canada (CIRNAC) Resources and Lands – Yellowknife (867) 669-2442 and (867) 445-7935	

1. INTRODUCTION

EREX International Ltd. (“EREX” or the “Company”) has developed this *Spill Contingency Plan* (the “Plan”) for its Yellowknife Lithium Project (the “Project”). The Plan is effective from the date of issuance of the Land Use Permit that EREX has for its Project. The *Spill Contingency Plan* has been prepared for internal Company use and distributed to the Mackenzie Valley Land and Water Board for approval as part of EREX’s Land Use Permit application. Copies and updates of this Plan can be obtained by contacting:

Carl Verley
Vice-President, EREX
Phone: 604-616-8299
Email: carl@li-ft.com

Francis MacDonald
CEO & Director, EREX
778-322-8705
Francis@li-ft.com

The purpose of EREX’s *Spill Contingency Plan* is to provide a plan of action for any spill event during the Company's exploration programs on its leases in the project area situated in the Northwest Territories, as well as on Federal land where its main campsite is proposed to be located. The Plan provides protocols for responding to spills (or potential spills) that will minimize health and safety hazards, environmental damage, and clean-up costs, as well as defining responsibilities of response personnel. The Plan includes details for the sites that operations will be conducted upon, and describes the response organization, action plans, reporting procedures and training exercises in place.

1.1 Recipients

Table 3 identifies who the most recent version of the Plan has been distributed to:

Table 3: Recipients of this Version of the Spill Contingency Plan

Name	Position
Ryan Miller, Johanna Black, Adrian Boyd, Kieron Testart	Yellowknives Dene First Nation (YKDFN)
Settlement Administrative Officer	Lutselke First Nation (LKFN)
Minnie Whimp	Deninu Kue First Nation (DKFN)
Brett Wheler, Violet Camsell-Blondin, Jessica Pacunayen, Longinus Ekwe, Grace MacKenzie	Tlicho Government
Jessica Hurtubise, Noah Johnson	North Slave Metis Alliance
Jessica Poole	Akaiatcho Screening Board
Tim Morton	CIRNAC
Clint Ambrose	GNWT

2. PROJECT INFORMATION

The leases making up EREX’s Project are situated in Akaiatcho Territory and bounded by latitudes: 62.179129° North to 62.854255° North, and longitudes: 112.135661° West to 114.186622° West. The main campsite is tentatively located at the following coordinates: 62.570713° North and 113.501765° West. The campsite is situated on the abandoned Hidden Lake gold mine, land that has been reclaimed

by the Contaminants and Remediation Directorate of CIRNAC Crown Indigenous Relations and Northern Affairs Canada) The land is still under control of CIRNAC; EREX has an access agreement with CIRNAC to set up a campsite on that land. Capacity for the camp will be to a maximum of 49 people with the average being around 46 for most of the drilling program. Project location maps are found in Appendix A. Table 3 presents a tentative list of structures to be erected at the campsite.

Table 4. Camp Accommodations

Item, Purpose	Quantity	Dimensions (m)	Area (m2)
Tent, Sleepers	18	4.3 x 4.9	379.26
Tent, First Aid	1	4.3 x 4.9	21.07
Tent, Kitchen	2	4.3 x 9.8	84.28
Tent, Men's Dry	1	4.3 x 9.8	42.14
Tent, Women's Dry	2	4.3 x 6.1	52.46
Tent, Offices	2	4.3 x 4.9	42.14
Tent, Core logging	3	4.3 x 9.8	126.42
Tent, Core cutting	3	4.3 x 4.9	63.21
Tent, Toilets	3	4.3 x 4.9	63.21
Generator, Shed	3	3.7 x 4.9	54.39

Diesel and jet (helicopter) fuel will be stored on Federal land near the campsite in bulk fuel systems with a capacity of up to 75,000 litres, consisting of double-walled steel tanks. Double-walled steel tanks will be placed in earthen berms that act as third-order containment (since double wall is two orders) and to protect the tank from vehicles, in accordance with industry best-practise (PDAC, 2009). Storage Tank Permits will be obtained prior to be deployed and used at the Project for all tanks with capacity >4,000 litres, as required by the *Storage Tank Systems for Petroleum Products and Allied Petroleum Products Regulations* (Canada, 2008).

Fuel will be transferred from the bulk systems into smaller containers (e.g. 205 litre steel drums or tidy tanks) for local transport to drill sites, the generator shack or the helicopter pad, or directly into vehicles. Drums will be stored horizontally with their caps in the “3 and 9 o'clock” positions to minimize bung pressure and potential leakage.

All caches, including bulk fuel systems, fill lines and distribution lines will be marked with flags, posts, or similar devices to maximize their visibility.

Fuel will be dispensed using purpose-built manual or electric pumps. Liquid-tight containers or sumps will be placed below each tap, valve and nozzle used to dispense fuel. Spill kits, absorbent matting and copies of the Spill Contingency Plan will be present at all bulk fuel, small cache, and refuelling sites.

A limited amount of fuel in 205 litre drums will also be brought in and stored beside the main fuel cache, which will be situated on Federal land by the campsite and by the Thompson-Lundmark winter road, in a secondary containment area. Greases, gasoline, and glycol-based antifreeze will be stored either in animal proof containers or in animal proof structures at the main camp. The amount and variety of fuels that can

be on site at any one time are listed in Table 5. It is anticipated that over the term of the permit fuel will be required for drilling and camp support at the Echo lease (formerly known as THOR) as well as the BIG lease, also as listed in Table 5.

Table 5. Fuel Types to be used in the Project

Type of Fuel	Number of containers	Capacity of containers (e.g., litres, pounds)	Type of container (e.g., barrel, tank, tidy-tank)	Proposed storage or staging location(s)
Hidden Lake Camp – Federal Land				
Diesel	3	25,000 ltr	Tanks	Federal Land
Diesel:	60	205 ltr	Barrel	Federal Land
Gasoline:	10	205 ltr	Barrel	Federal Land
Aviation Fuel:	60	205 ltr	Barrel	Federal Land
Propane:	40	45 kg	100# cylinders	Federal Land, Camp
Other: various lubricants, including drilling fluids	100	1 ltr to 22 ltr	Tubes, cans, and pails	Federal Land, Camp
BIG Lease (NT-3197)				
Diesel	75	205 ltr	Barrel	Territorial Land, Camp site on lease
Aviation Fuel	25	205 ltr	Barrel	Territorial Land, Camp site on lease
Gasoline	2	205 ltr	Barrel	Territorial Land, Camp site on lease
Propane	5	45 kg	100# cylinders	Territorial Land, Camp site on lease
Other: various lubricants, including drilling fluids	100	1 ltr to 22 ltr	Tubes, cans, and pails	Territorial Land, Camp site on lease
Echo Lease (NT-3192)(formerly known as THOR)				
Diesel	50	205 ltr	Barrel	Territorial Land, Camp site on lease
Aviation Fuel	50	205 ltr	Barrel	Territorial Land, Camp site on lease

Table 4. continued

Type of Fuel	Number of containers	Capacity of containers (e.g., litres, pounds)	Type of container (e.g., barrel, tank, tidy-tank)	Proposed storage or staging location(s)
ECHO Lease (NT-3192)				
Gasoline	2	205 ltr	Barrel	Territorial Land, Camp site on lease
Propane	5	45 kg	100# cylinders	Territorial Land, Camp site on lease
Other: various lubricants, including drilling fluids	100	1 ltr to 22 ltr	Tubes, cans, and pails	Territorial Land, Camp site on lease

3. SPILL RESPONSE

The Camp Attendant will be responsible for checking fuel drum conditions and evidence of leakage on a daily basis, assuring drip trays are in place and not overflowing, keeping spill kits and absorbent mats in good repair and accessible. If a spill or the likelihood of a spill occurs, the Attendant will immediately report to the Project Manager. Drillers and other operators of machinery are to report spills or potential spills to the Project Manager.

In the event of a spill, the Project Manager will follow the Reporting Procedure and initiate cleanup. The Project Manager will request additional aid from external sources if deemed necessary.

If one or more of these key personnel are absent from the site, an alternative person will be named as either Camp Attendant or Project Manager in the interim. Names of key personnel to be responsible for activating the Spill Contingency Plan will be made available once crew members have been hired.

4. SPILL REPORTING PROCEDURE

Spill reporting procedures are listed in Table 6. Additional information and contacts for reporting spills are found in Table 6. Communication in the way of two-way radios will be set-up, such that in the event a spill occurs outside of camp (e.g., at a drill site), it can be immediately reported to the Project Manager. Spill kits located at drill sites, fuel caches, at the helicopter landing pad, and the camp office and will have contact information for the NWT Spill Report Line prominently displayed. A listing of the NWT 24-Hour Spill Report Line as well as other government contacts and company officials will be displayed adjacent to the satellite phone in camp. A guide to reportable spill volumes is found in Appendix B.

Table 6. Spill reporting procedure.

Step	Procedure
1	Fill out "SPILL REPORT" form as completely as possible before making the report. The form is in Appendix C.
2	CALL: Yellowknife using the 24-hour Spill Report Line: (867) 920-8130, or CALL: RCMP (867) 669-1111 if other means are not available. Calls can be made collect by informing the Operator that you wish to report a spill.

Table 7. Additional information or assistance regarding spills.

Contact	Phone Number
Regulatory Bodies	
Government of Northwest Territories Department of Lands – North Slave Region, Yellowknife	(867) 767-9188 (867) 446-0769
Crown Indigenous Relations and Northern Affairs Canada (CIRNAC) Lands and Resources - Yellowknife	(867) 669-2442 or (867) 445-7935
ECCC Environmental Enforcement	(867) 669-4730
National Environmental Emergencies Center (NEEC) Toll-Free	(866) 283-2333
RCMP Detachment, Yellowknife	(867) 669-1111
Contractors	
Discovery Mining Services, Yellowknife	(867) 920-4600
Equity Exploration Consultants Ltd	(604) 688-9806
Company	
EREX International Ltd – Carl Verley	(604) 616-8299
Equity Exploration Consultants Ltd – Chris Hughes	(604) 688-9806

5. INITIAL ACTION

The procedures for any individual to follow when a spill is detected are listed in Table 8 on the following page.

Table 8. Initial action procedure.

Step	Action
1	Stay alert and consider safety first.
2	Identify: a. The source of leak or spill b. The type of product
3	Assess the hazards to persons in the vicinity of the spill.
4	Isolate or remove any potential ignition source.
5	If possible, control danger to human life.
6	Assess whether the spill can be readily stopped or brought under control.
7	If safe and if possible, try to stop the flow.
8	Report the spill to the Project Manager, who will follow the <i>Spill Reporting Procedure</i> .
9	When safe, begin clean-up.

6. ACTION PLANS

The following responses are recommended for fuel spills in differing environments. Depending on the location and size of the exploration program, some of the equipment mentioned in the responses listed below will obviously not be located on site; however, they could be transported to the spill if deemed necessary. The most likely sources of fuel spills in this type of exploration program include:

- (a) leaking drums and/or tanks,
- (b) hydraulic-line malfunction, and
- (c) re-fueling operations.

Spills on Land

For spills on land (gravel, rock, soil, and vegetated surface areas) follow the procedures listed below.

Table 9. Procedure for land spills.

Step	Action Item
1	Trench or ditch to intercept or contain flow of fuel or petroleum products on land where feasible (loose sand, gravel and surface layers of organic materials are amenable to ditching/trenching; ditching/trenching in rocky substrates is typically impractical and impossible).
2	Construct a soil berm downslope of the spill. Use of synthetic, impervious sheeting can also be used to act as a barrier.
3	Where available, recover spills through manual or mechanical means including shovels, heavy equipment, and pumps.
4	Absorb petroleum residue with synthetic sorbent pad materials.
5	Recover spilled and contaminated material, including soil and vegetation.
6	Transport contaminated material to approved disposal or recovery site. Equipment used will depend on the magnitude and location of the spill. Note that land-based disposal is only authorized with the approval of government authorities.

Spills on Snow

For spills on snow follow the procedures listed below in Table 9.

Table 10. Procedures for spills on snow.

Step	Action Item
1	Trench or ditch to intercept or contain flow of fuel or petroleum products on snow, where feasible (ice, snow, loose sand, gravel and surface layers of organic materials as amenable to trenching/ditching; trenching in solid, frozen ground or rocky substrates is typically impractical and impossible).
2	Compact snow around the outside perimeter of the spill area.
3	Construct a dike or dam out of snow, either manually with shovels or with heavy equipment such as graders and dozers where available
4	If feasible, use synthetic liners to provide an impervious barrier at the spill site.
5	Locate the low point of the spill area and clear channels in the snow, directed away from waterways, to allow non-absorbed material to flow into the low point.
6	Once collected in the low area, options include shoveling spilled material into containers, picking up with mobile heavy-equipment, pumping liquid into tanker trucks or using vacuum truck to pick up material.
7	Transport contaminated material to approved disposal site. Equipment used will depend on the magnitude and location of the spill.

Spills on Ice

For spills on ice follow the procedures listed below, Table 10.

Table 11. Procedures of Spills on Ice

Step	Action Item
1	Contain material spilled using methods described above for snow, if feasible and/or use mechanical recovery with heavy equipment.
2	Prevent fuel/petroleum products from penetrating ice and entering watercourses. Remove contaminated material, including snow/ice as soon as possible.
3	Containment of fuel/petroleum products under ice surface is difficult given the ice thickness and winter conditions. However, if the materials get under ice, determine area where the fuel/petroleum product is located
4	Drill holes through ice using ice-auger to locate fuel/petroleum product.
5	Once detected, cut slots in the ice using chain-saws and remove ice blocks. Fuel/petroleum products collected in ice slots or holes can be picked up via suction hoses connected to portable pump, vacuum truck or standby tanker. Care should be taken to prevent the end of the suction hose clogging up by snow, ice or debris.

Spills on Water

For spills on water follow the procedures listed in Table 11, below

Table 12. Procedure for spills on water.

Step	Item
1	Contain spills on open water immediately to restrict the size and extent of the spill
2	Fuel/petroleum products which float on water may be contained through the use of booms, absorbent materials, skimming and the erection of culverts
3	Deploy containment booms to minimize spill area, although effectiveness of booms may be limited by wind, waves and other factors.
4	Use sorbent booms to slowly encircle and absorb spilled material. These absorbents are hydrophobic (repel water).
5	Once booms are secured, use skimmers to draw in hydrocarbons and minimal amounts of water. Skimmed material can be pumped through hoses to empty fuel tanks/drums
6	Culverts permit water flow while capturing and collecting fuel along the surface with absorbent materials.

7. SAFETY DATA SHEETS

Safety Data Sheets (SDS) for all hazardous materials involved in this project are listed in Appendix D. The MSDS sheets are for diesel, propane, Jet A, Jet B, gasoline, engine oils, as well as down hole drilling muds and chemicals.

8. RESOURCE INVENTORY – SPILL KITS

Spill kits containing the items tabulated below (Table 12) will be made available on-site to ensure the action plans may be executed in the event of a spill. Spill kits must be restocked as soon as possible after use. A total of 12 spill kits will be distributed through the project area as follows: one at each drill (7), 1 at the bulk fuel storage site, 1 at the company office, Hidden Lake camp, one in each of the generator sheds (3), and one in the kitchen mess facility. In addition, small spill kits with sorbent pads will be in each vehicle that is used for transporting fuel from the bulk storage facility to the main camp, or drill sites on the Fi, Ki, and Hi leases, or to drill sites on the BIG and NITE leases. These vehicles will also carry a shovel, garbage/disposal bags, a field notebook and pencil, as part of their small spill kit.

Table 13. Spill Kit Contents

Items	Quantity and Notes
Chemical master gloves	1 box
Garbage/disposal bags	10, large
Oil-only mats	25 (16"x20")
Sorbent pads	10
Booms for oil on water	6
Impervious sheeting (tarps)	2
Duct tape	1 roll
Utility knife	1
Field notebook and pencil	1

Table 12. continued

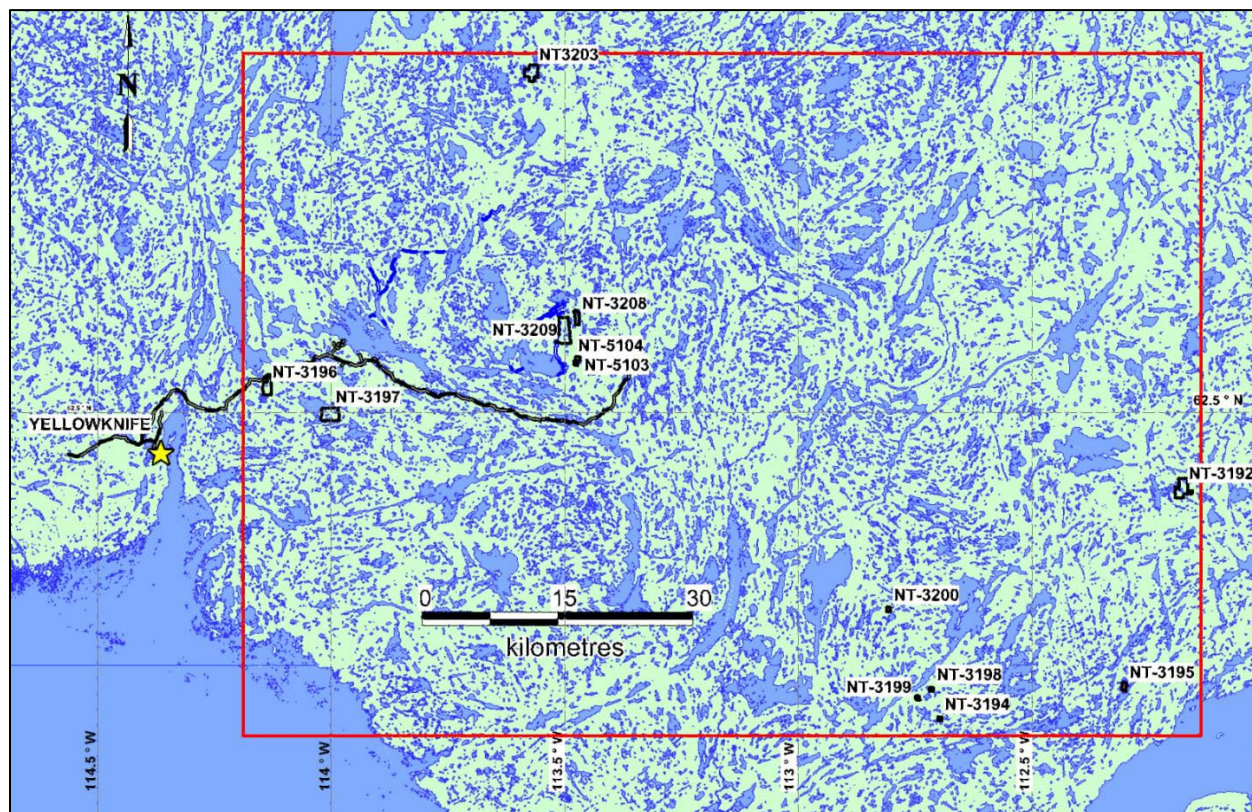
Items	Quantity and Notes
Rake	1
Pick axe	1
Shovel	3
Instruction binder	1
buckets	3
Empty drum	1

Additional resources may be obtained from EBA Engineering Consultants (867-873-2287) or Discovery Mining Services (867-920-4600), including larger pumps, Bobcats, and excavators.

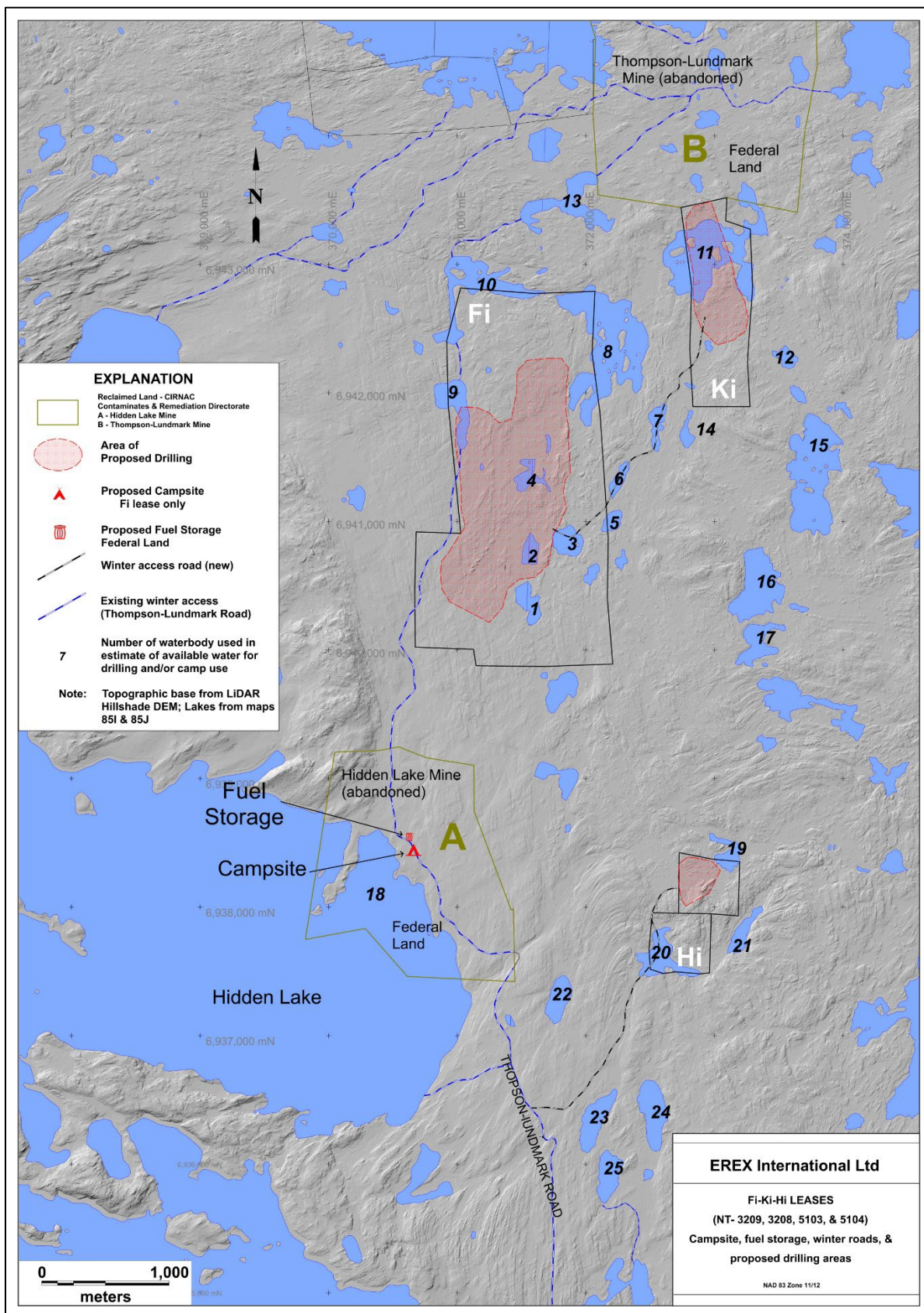
9. TRAINING EXERCISES

All personnel on site must be briefed and given a copy of the *Spill Contingency Plan* before field operations begin. Training consisting of mock spill-response exercises must be conducted early in the program to ensure that personnel are familiar with spill response equipment, and procedures and methods for using the equipment in spill events; in addition to fully understanding communication and reporting requirements for spill events.

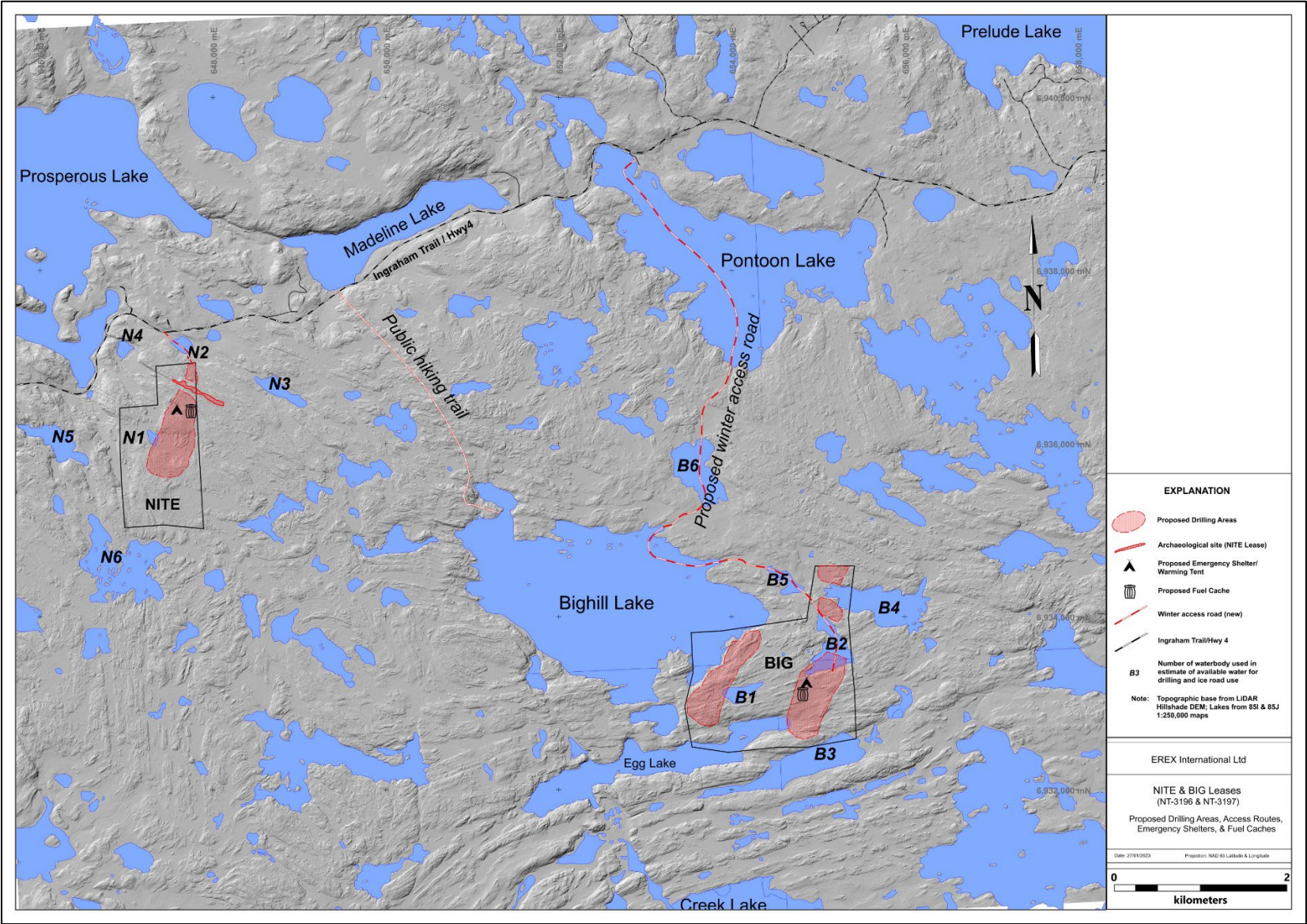
Appendix A – Site Maps



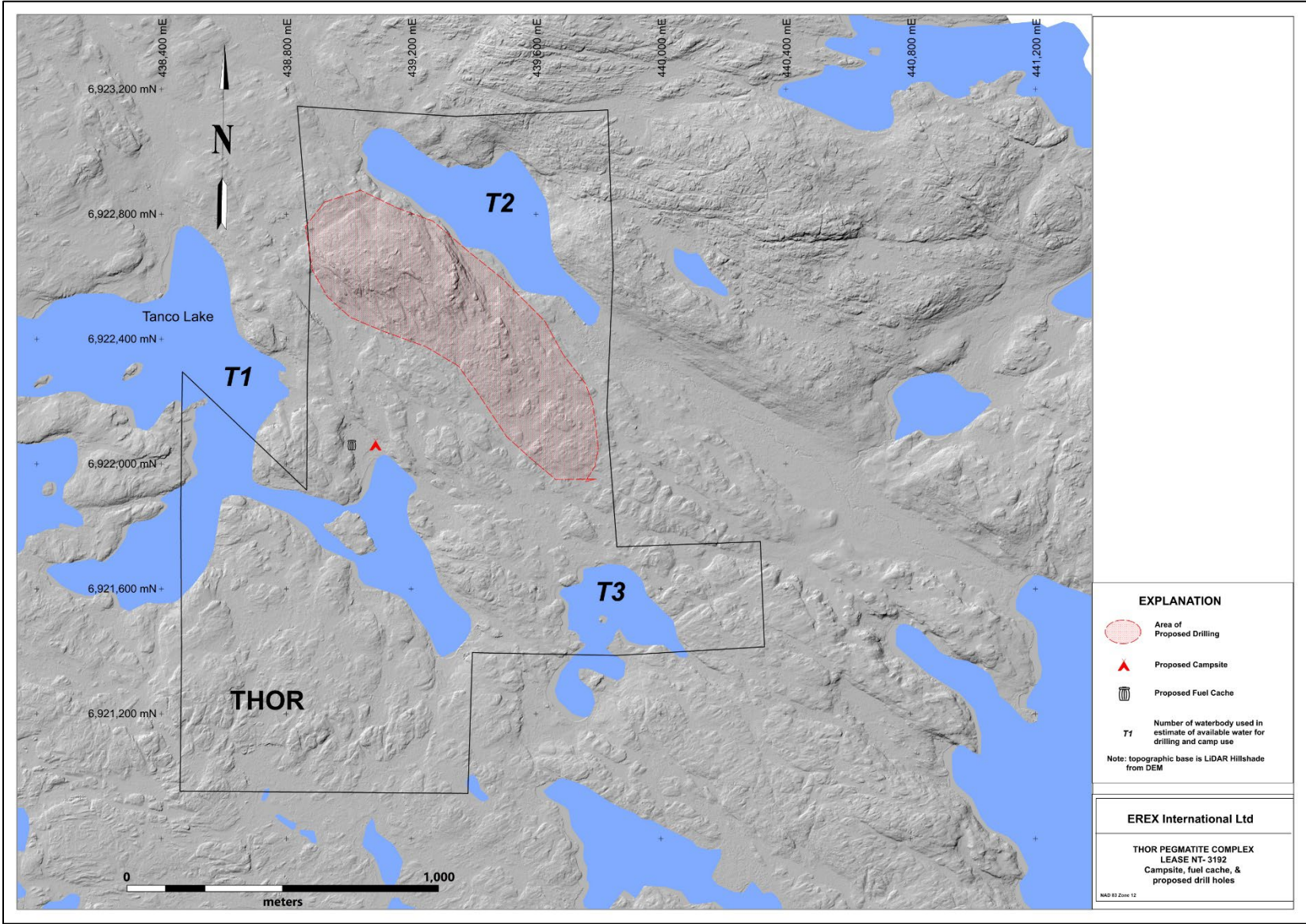
Map 1. Regional location of EREX's leases.



Map 2. Property Location detail: Fi-Hi-Ki leases.



Map 3. Property Location detail: NITE and BIG leases



Map 4. Property Location detail: THOR lease

Appendix B: Reportable Quantities for NWT Spills

Note: L = litre; kg = kilogram; PCB = Polychlorinated Biphenyls; ppm = parts per million

Substance	Reportable Quantity
Explosives Compressed gas (toxic/corrosive) Infectious substances Sewage and Wastewater (unless otherwise authorized) Radioactive materials Unknown substance	Any amount
Compressed gas (Flammable) Compressed gas (Non-corrosive, non-flammable)	Any amount of gas from containers with a capacity greater than 100L
Flammable liquid	≥100 L
Flammable solid Substances liable to spontaneous combustion Water reactant substances	≥ 25 kg
Oxidizing substances	≥ 50 L or 50 kg
Organic peroxides Environmentally hazardous substances intended for disposal	≥1 L or 1 kg
Toxic substances	≥ 5 L or 5 kg
Corrosive substances Miscellaneous products, substances or organisms	≥ 5 L or 5 kg
PCB mixtures of 5 or more ppm	≥ 0.5 L or 0.5 kg
Other contaminants --for example, crude oil, drilling fluid, produced water, Waste or spent chemicals , used or waste oil, vehicle fluids, wastewater.	≥ 100 L or 100 kg
Sour natural gas (i.e., contains H ₂ S) Sweet natural gas	Uncontrolled release or sustained flow of 10 minutes or more
Flammable liquid Vehicle fluid	≥ 20 L When released on a frozen water body that is being used as a working surface
Reported releases or potential releases of any size that: 1. are near or in an open water body; 2. are near or in a designated sensitive environment or habitat; 3. Pose an imminent threat to human health or safety; or 4. Pose an imminent threat to a listed species at risk or its critical habitat	Any amount

Appendix C: NWT Spill Report Form

Appendix D: – Safety Data Sheets (SDS)

