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Oral presentation

Written submission from the Birch Narrows Dene Nation

In the Matter of the

Cameco Corporation, McArthur River Operation and Key Lake Operation

Application for the renewal of uranium mine/mill licences for McArthur River Operation and Key Lake Operation

Commission Public Hearing

June 7-8, 2023

Exposé oral

Mémoire de la Nation des Dénés de Birch Narrows

À l'égard de

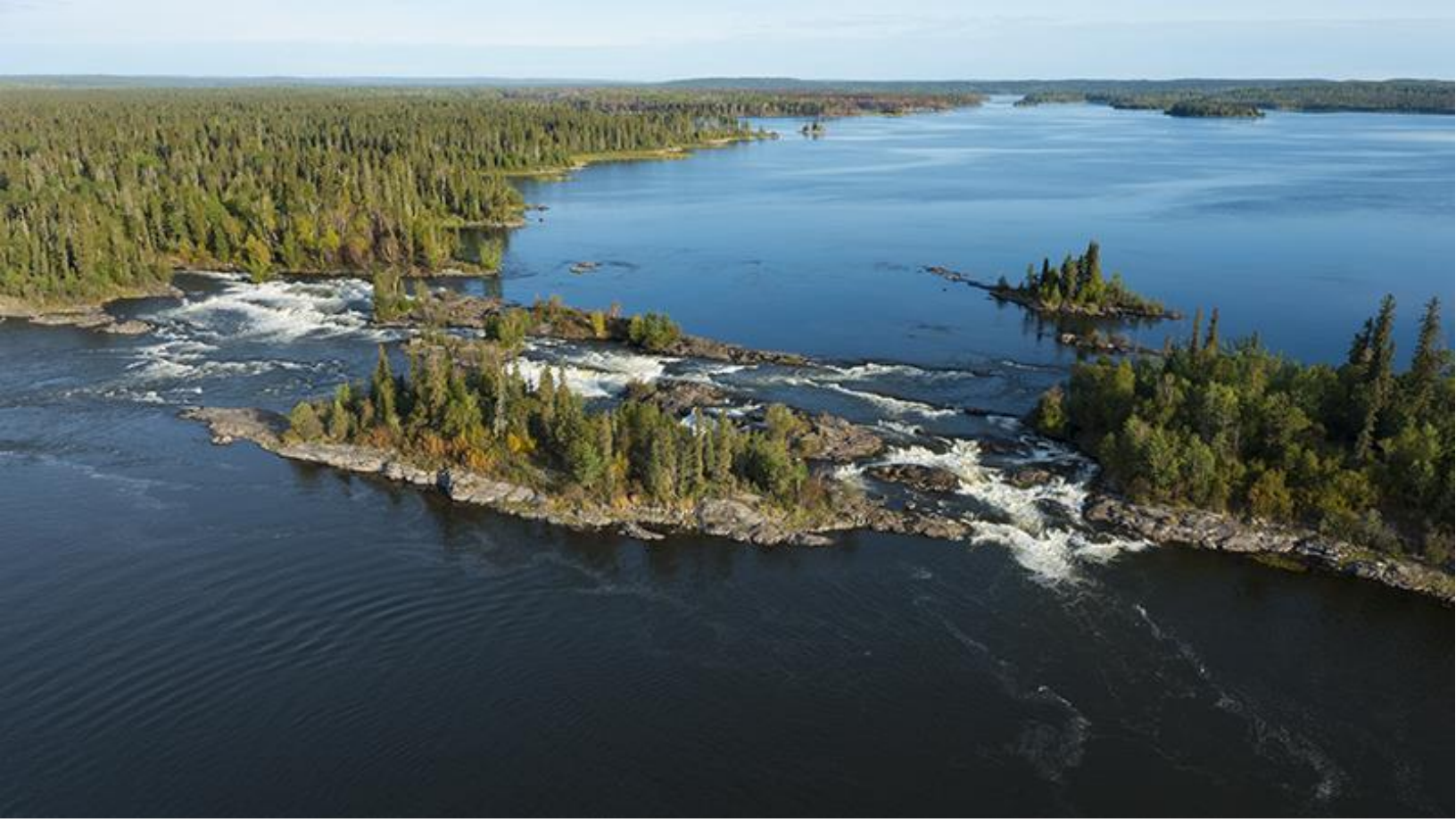
Cameco Corporation, établissements de McArthur River et de Key Lake

Demande visant le renouvellement des permis d'exploitation de mines et d'usines de concentration d'uranium pour les établissements de McArthur River et de Key Lake

Audience publique de la Commission

7-8 juin 2023

Canada



Cameco Corporation
Request to Renew the Licenses for the Key Lake and McArthur River Operations

Technical Review

May 1st, 2023

Submitted by:

Birch Narrows Dene Nation

Contents

1.0 Introduction

Birch Narrows Dene Nation (BNDN) has prepared this report as our written submission for the Canadian Nuclear Safety Commission's (CNSC) hearings on Cameco Corporation's application for the renewal of its uranium mine and mill operating license for the Key Lake and McArthur River Operations. In this submission, we have prepared a series of technical comments and recommendations on the license renewal application with a focus on the implications and potential impacts on our Treaty and Aboriginal rights and interests. These technical comments and recommendations were directly informed by input from our members during the week of April 24 to 28. These comments and recommendations have been reviewed, revised and approved by BNDN leadership. In addition to this written submission, BNDN intends to send representatives from our Nation to intervene at the Commission hearings scheduled for June 7-8, 2023.

Overall, BNDN does not oppose the renewal of the license to operate the Key Lake and McArthur River Operations. Our primary request from our written and oral intervention is to have more regular and ongoing dialogue with Cameco and the CNSC related to these Projects and all other uranium mining operations throughout the Athabasca Basin. The Key Lake and McArthur River Operations is on our Ancestral and Treaty Lands. Many of our members have worked at the Key Lake and McArthur River Operations and we have ties to the land around the Project. We see ongoing and regular dialogue with Cameco and the CNSC as an important vehicle for our members to understand Cameco's operations and for Cameco to understand our Nation's rights, interests and worldview.

1.1 Birch Narrows Dene Nation

Birch Narrows Dene Nation is a Denesųłiné First Nation band within the meaning of the Indian Act (Canada) and an Aboriginal people within the meaning of Section 35(1) of the Constitution Act, 1982 (Canada). BNDN members have occupied the lands of Dene Nene or "Land of the People" in northern Saskatchewan since time immemorial according to our own laws and system of government. Today, BNDN is a diverse and vibrant community of Dene, Cree and Métis citizens with 812 registered members. BNDN has 3 reserves, one at Turnor Lake (IR 193B) adjoins the village of Turnor Lake Saskatchewan and is the main reserve for BNDN. Churchill Lake (IR 193A) is at the junction of Churchill Lake and Frobisher Lake, and Turnor Lake (IR 194) is on Peter Pond Lake east of Dillon, SK. BNDN's vision is a healthy, self-reliant, educated, and united community. BNDN mission is to provide good governance and create opportunities for the wellbeing of all members.

As a signatory of Treaty 10, BNDN asserts that Treaty 10 was not an agreement to surrender lands and resources. As such BNDN laws, customs and jurisdiction still apply to our Ancestral Lands. There are cultural sites and artifacts left throughout the region that are significant for our members. Our community members continue to hunt, fish, gather and trap on the lands throughout our Ancestral Lands. Any direct or cumulative impacts from development could negatively affect our ability to exercise Aboriginal and Treaty rights, including the livelihoods of those who live off the land. The lands, waters and resources throughout our Territory are essential to the well-being and survival of our First Nation.

The BNDN Traditional Use Study Specific to Nexgen's Proposed Rook 1 Project (Firelight Research Inc., 2019) reports the following BNDN historical context:

> *Chief Raphael Redshilldkze signed Treaty 10 on behalf of the Clear Lake Band on August 28, 1906. Treaty 10 was based on other numbered treaties, and included the following standard hunting, trapping, and fishing rights clause:*
>
> > *And His Majesty the King hereby agrees with the said Indians that they shall have the right to pursue their usual vocations of hunting, trapping and fishing throughout the territory surrendered as heretofore described, subject to such regulations as may from time to time be made by the government of the country acting under the authority of His Majesty and saving and excepting such tracts as may be required or as may be taken up from time to time for settlement, mining, lumbering, trading or other purposes.* (Indian Claims Commission 1995, p.56)
>
> *The Clear Lake Band later came to be known as the Peter Pond Band. This Band was separated in 1972 into the Buffalo River Band and Turnor Lake Band; today, they are known as the Buffalo River Dene Nation and the Birch Narrows Dene Nation* (Indian Claims Commission 1995).

BNDN members continue to exercise our Treaty and Aboriginal rights including hunting, trapping, fishing, plant gathering and cultural/spiritual practices in the immediate area of the and throughout our Ancestral Lands.

BNDN has constitutionally protected Treaty rights, inherent Aboriginal rights, Aboriginal title and interests in and to Dene Nene. BNDN must be consulted and accommodated by the Crown with respect to potential impacts on our rights.

2.0 Cameco Corporation's Key Lake and McArthur River Operations

The Key Lake Operation (KLO) and McArthur River Operation (MRO) are two separate uranium mining operations majority owned by Cameco Corporation (Cameco) within Treaty 10 territory in the eastern Athabasca Basin of Saskatchewan. Uranium ore is mined at the MRO and is then trucked to the KLO for processing into U_3O_8. While the KLO and the MRO are separate operations and are licensed separately, they are subject to the same relicensing process because the two operations are so tightly interconnected. Both operations are regulated under the *Nuclear Safety Control Act*, which is administered by the Canadian Nuclear Safety Commission. The existing license for both the KLO and MRO will expire on October 31st, 2023. Cameco initially applied for the license renewal to be a lifetime renewal for the licenses but switched the application to be for 20 years after receiving feedback from impacted Indigenous Nations.

Due to the low price of uranium, operations at both the KLO and the MRO were suspended in 2017 and were placed in a state of care and maintenance for an indefinite period of time in 2018. In early 2022 Cameco announced that they would restart operations at the KLO and the MRO due to the improved market conditions and on November 9th 2022 Cameco announced that the KLO had milled the first ore from the MRO since resuming operations.

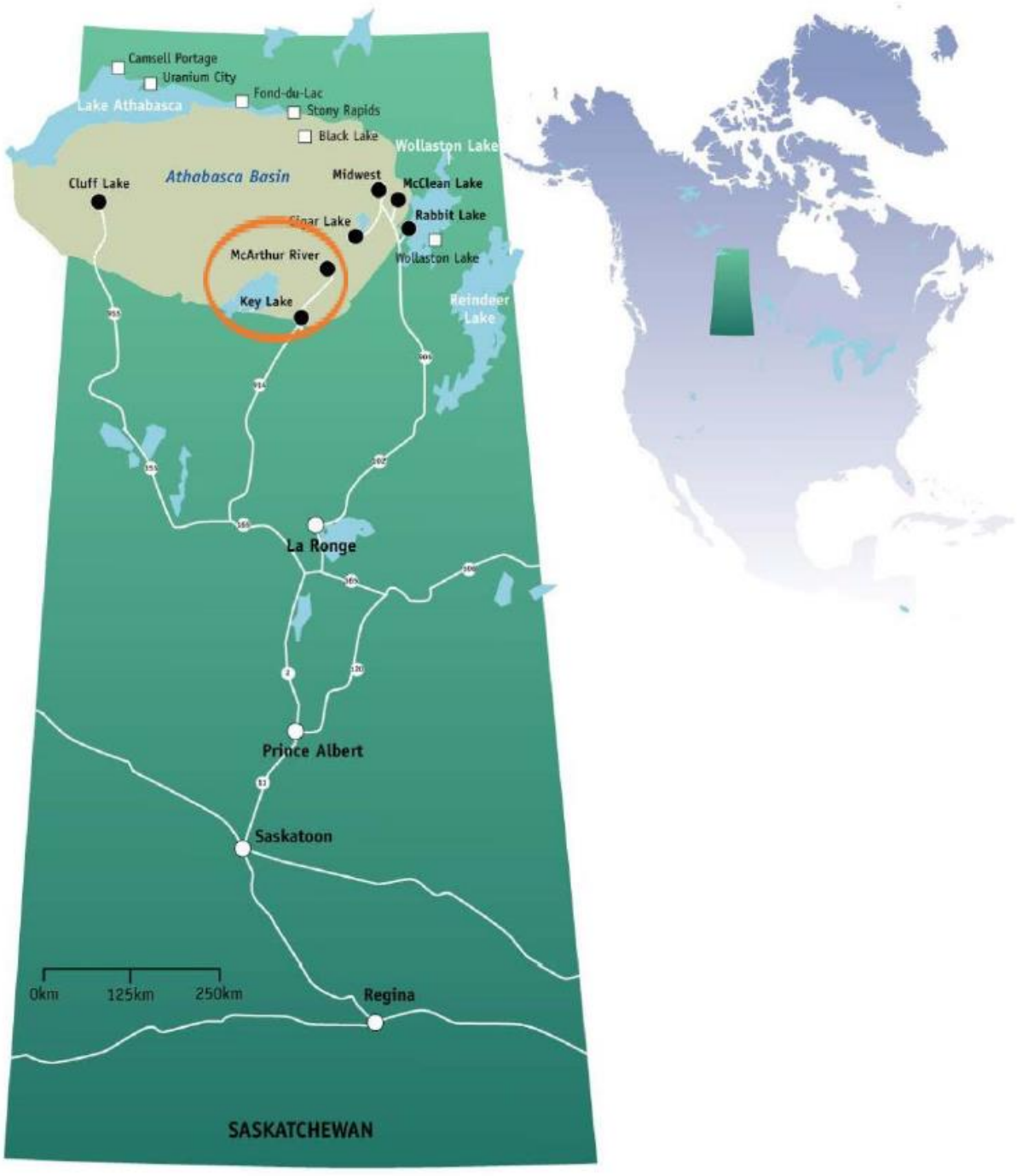


Figure 1: Location of the Key Lake and McArthur River Operations (CNSC CMD-H6, 2023)

2.1 Key Lake Operation

The KLO is located on Saskatchewan Highway 914 Approximately 40 km southeast of Cree Lake and 200 km east-northeast of Turnor Lake as the crow flies. Cameco owns 83.3% of the KLO and is the operator of the facility. Orano owns the remaining 16.7% of the KLO. The KLO originally opened in 1983 to mine the Gaertner and Deilmann uranium deposits after federal and provincial environmental assessments. The Gartner and Deilmann deposits were mined as open pits and were mined out by the late 1990s. Towards the end of the original mine life, Cameco applied to convert the mined out Deilmann open pit into a tailings management facility (the Deilmann Tailings Management Facility, or DTMF). This was approved through a screening level environmental assessment.

When all the Gaertner and Deilmann ore was mined out and processed in the late 1990s the KLO began to process ore from the MRO. The KLO has been processing ore from the MRO since that time except for periods of when the operations were suspended. There are no active mining operations at the KLO, it is used solely for its processing facilities. The DTMF has enough capacity to process all of the ore reserves from MRO and will have additional capacity to store tailings from other regional operations.

2.1.1 Infrastructure

The main infrastructure at the KLO is the Key Lake Mill Complex (KLMC) where the ore from the MRO is processed into U_3O_8 (also known as yellowcake). To process the ore from the MRO, Cameco blends high grade ore with low grade ore in the KLMC and uses a six-step process to convert the ore into yellowcake. The process involves the usage of sulphuric acid and other chemicals to crystallize the pure yellowcake. The wastewater from the processing is treated at the end of the process so that it can be discharged to the environment. One of the byproducts of the water treatment process is the precipitation of ammonium sulphate. The ammonium sulphate produced on site is sold as a fertilizer off-site.

Ore from Gaertner and Deilmann tailings are stored at an above ground tailings management facility (AGTMF) to the west of the mill. The AGTMF is now closed and Cameco is considering options for rehabilitation. There are also 3 waste rock piles around the Gaertner and Deilmann pits from when they were mined. Excess water in the DTMF and the Gaertner pit are collected through pond pumping systems and treated in a reverse osmosis (RO) plant prior to discharge to the environment.

While the KLO was closed during 2021 and 2022, Cameco undertook a series of upgrades to the KLMC. The upgrades included the automation of some processes on site through robotics, new dust filtration systems, upgrades to the mill effluent treatment circuit and upgrades to the uranium recovery well infrastructure.

2.1.2 Water Management

The MLO has two points where water is discharged to the environment. One point is to the west of the mill into Wolf Lake where treated effluent from the mill is discharged. The other discharge point is into Horsefly Lake and discharges treated water from the DTMF. Both effluent discharge points flow

Northeast into the Wheeler River. Effluent Discharge into Wolf Lake and Horsefly Lake is required to abide by the Federal *Metal and Diamond Mine Effluent Regulations* (MDMER). The MDMER includes an effluent criteria for a number of metals that Cameco is required to meet or exceed at all times. In addition to the contaminants regulated by the MDMER, Cameco also reports monitoring results for selenium and molybdenum in their effluent as they were found to be a concern for all uranium operations in the Athabasca Basin. The MDMER also includes environmental effects monitoring (EEM) to assess the downstream impacts of their effluent discharge on the receiving environment. There have been occasional exceedances of MDMER effluent criteria in effluent discharge from the KLO, though the CNSC has determined that the exceedances are unlikely to have caused any effects to the downstream aquatic environment.

2.1.3 Environmental Monitoring Results

The KLO has had a number of effluent discharges in exceedance of license limits since 2013. Cameco has also reported occasional exceedances above the action levels or license limits in lake sediments, fish and moose. Instances of exceedances are summarized below:

- Uranium concentrations from treated mill effluent exceeded the action level on October 28, 2022
- Total suspended solids from the treated mill effluent exceeded the action level on November 24, 2022
- Concentrations of nickel and uranium in treated mill effluent increased during care and maintenance (but never exceeded license limits)
- Effluent that was outside the licensed pH range was discharged from the RO plant in December 2013 and October 2018
- Sediments in Unknown Lake are significantly elevated in arsenic, cobalt, molybdenum, nickel and selenium
- Sediments in Little McDonald Lake are significantly elevated in arsenic, cobalt, nickel, uranium and zinc
- The Ecological Risk Assessment found exceedances of arsenic, cadmium, cobalt, copper, selenium, fluoride, nitrate, sulphate and total dissolved solids within the David Creek drainage

Overall the CNSC has determined that these exceedances are negligible and unlikely to have any significant effects on the local environment or on humans. These exceedances are discussed further in Section 4.0 of this report.

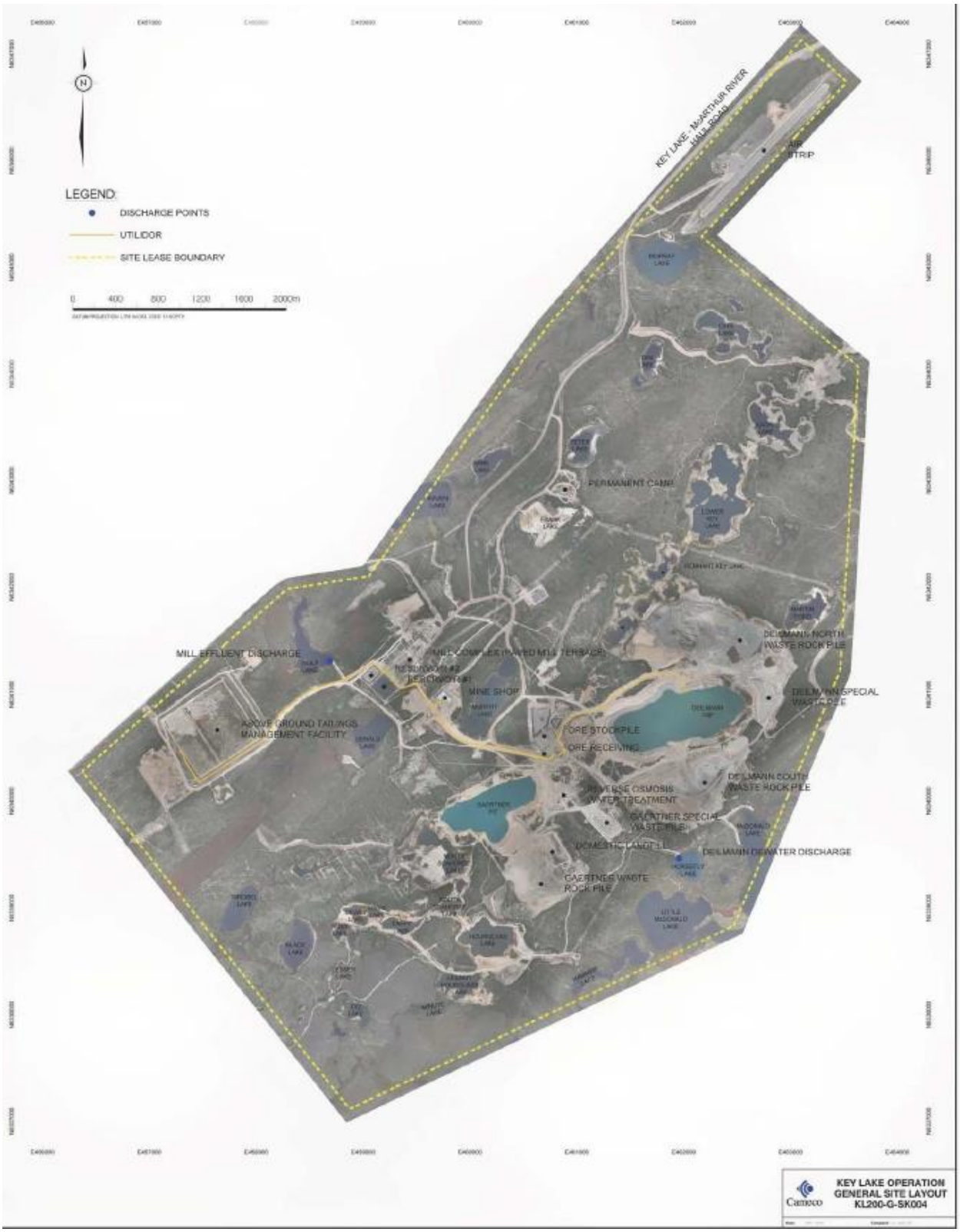


Figure 2: Satellite Image of the Key Lake Mine Site (CNSC CMD-6, 2023)

2.2 McArthur River Operation

The MRO is located 80 km northeast of the KLO along Saskatchewan Highway 914 in Treaty 10 territory. The MRO is 65 km east of Cree Lake and 260 km northeast of Turnor Lake. The MRO is 69.8% owned by Cameco and 30.2% owned by Orano. Cameco is the operator and licensee for the operation. The MRO is a large, high-grade underground uranium mining operation with a reserve of approximately 391.9 million pounds of U_3O_8 at an average ore grade of 6.91%.

2.2.1 Infrastructure

The ore at McArthur River is between 500 m and 640 m below the surface and is accessed by 3 shafts from surface down to the mine. Much of the ore processing done on site is done underground to convert the ore into a concentrated slurry. The slurry concentrate is then pumped up to surface to be transported to the MLO. Because the mine is an underground operation and ore is processed at the MLO, the surface footprint of the mine is relatively small. The infrastructure on surface includes a concrete plant, a freezing plant, a water treatment plant, an inert waste rock stockpile, a special waste rock pad (the special waste rock has low levels of radioactivity) and a series of water treatment and management ponds.

2.2.2 Water Management

Most of the minewater pumped out of the mine and contact water from the waste rock stockpiles and infrastructure on surface is captured and stored in water management ponds on site. The minewater that isn't captured and treated is the minewater from shaft #3, which is discharged directly to the environment. Prior to discharging to the environment, all minewater (except from shaft #3) is treated in a water treatment plant. The treated water is released into the read creek watershed via a constructed riprap lined channel. The Read Creek eventually flows into Yalowega Lake. Sewage water is treated in a sewage treatment plant before release to the environment.

2.2.3 Environmental Monitoring Results

Overall there have been very few exceedances in metals, radionuclides or other contaminants above the license limits at McArthur River since 2013. Radium-226 was found to be in exceedance of the site action levels (but below their licensed limits) for a period of time in 2018. This has been corrected through improved water treatment. Increased downstream water sampling found no changes in radium-226 concentrations in the receiving environment. There have been no exceedances of licensed limits for the discharge from Shaft #3.

The CNSC reported in their 2023 Environmental Protection Review Report (EPR) for the MRO that exposure to radiation from the mine poses a negligible risk to human health. Most contaminants are present in concentrations below regulatory limits or guidelines, though some contaminants show decreasing trends indicating that the mine may have cause elevated concentrations in the past.

Examples include decreasing concentrations of arsenic in blueberries and decreasing concentrations of molybdenum and uranium in the sediments of Unknown Pond.

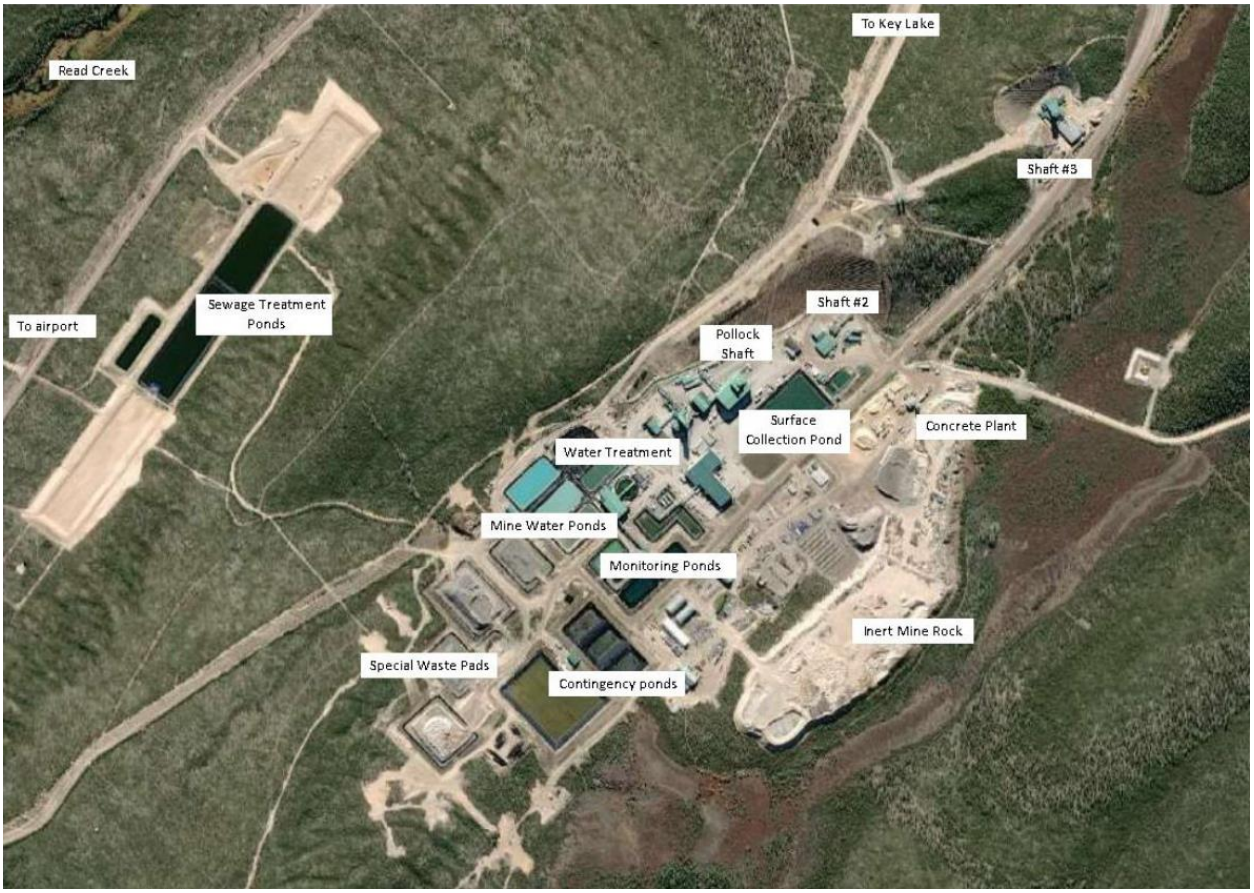


Figure 3: Satellite Imagine of the McArthur River Operations (CNSC CMD H6-1, 2023)

3.0 Community Engagement on the License Renewal Request

BNDN, with the support of Tamarack Environmental Associates, engaged our membership through interviews and focus sessions during the week of April 24th to 28th. BNDN members and leadership provided input into our members traditional knowledge, land use, occupancy and history in the area around the Rabbit Lake Mine and the Key Lake and McArthur River Operations. BNDN members also documented their concerns with the license renewal applications, including both environmental concerns and concerns based on our members' first-hand experiences working at the Rabbit Lake Mine and the Key Lake and McArthur River Operations. A total of 11 of our members were interviewed and 2 focus sessions were held during the week.

3.1 Summary of Input from BNDN Members

The following is a summary of input on the Key Lake and McArthur River Operations provided by our members and leadership during the interviews and focus sessions:

1. **Lack of recognition of BNDN's ties to the Project area**
    - BNDN members have deep historical ties to the Project area. Many members spoke of the familial connections to the Project area and having ancestors who came from the Project area. Our members also hold traditional knowledge and land use information near to the Key Lake and McArthur River Operations. The Key Lake and McArthur River Operations are also on BNDN Treaty Lands.
2. **Lack of open communication from Cameco**
    - BNDN has had extremely limited interaction with Cameco during the life of the Key Lake and McArthur River Operations, despite our historical ties to the area and the fact that many of our members have worked at the operations.
    - Cameco has been unwilling to provide BNDN with information we have requested on the Project such as their decommissioning plan. Cameco has argued that the decommissioning plan is confidential, which is highly unacceptable to BNDN. Our members expect Cameco to share project details with us much more openly.
3. **Concerns around the length of the licensing period**
    - BNDN members expressed concern with the relatively long licensing period requested by Cameco, which limits our members ability to provide input into the project, especially considering that Cameco is not openly engaging with our Nation.

4. Concerns with the long history of the operation and cumulative impacts to the environment

- BNDN members noted that the Key Lake and McArthur River Operations have been operating for a long time. Our members perceive there to be contamination from early in the mine life that has been either poorly documented or is unavailable to our members.
- Several of our members noted that they avoid exercising their rights around the Project due to the perceived contamination and risks from being near to the Key Lake and McArthur River Operations

4.0 Technical Review of the License Renewal Application

BNDN has undertaken a technical review of the license renewal application for the Project and has considered information available in the 2023 EPR for the KLO and MRO. This technical review is focused on information gaps, deficiencies in data, underrepresentation of potential effects, inadequate monitoring, and lack of involvement of BNDN. All of these priorities for BNDN comments are discussed through the lens of potential impacts of the Project on BNDN Treaty and Aboriginal rights, interests and claims.

Documents reviewed by BNDN:

1. Cameco Corporation McArthur River Operation and Key Lake Operation Commission Public Hearing (CNSC CMD 23-H6)
2. Written submission from Cameco Corporation In the Matter of the Cameco Corporation, McArthur River Operation and Key Lake Operation (CNSC CMD 23-H6.1)
3. Supplementary Information; Written submission from Cameco Corporation In the Matter of the Cameco Corporation, McArthur River Operation and Key Lake Operation (CNSC CMD 23-H6.1A)
4. Environmental Protection Review Report: McArthur River Operation (https://nuclearsafety.gc.ca/eng/resources/publications/reports/eprmcarthurriver23)
5. McArthur River Operation Northern Saskatchewan, Canada National Instrument 43-101 Technical Report. March 29, 2019. Prepared for Cameco Corporation by Linda Bray, Gregory M. Murdoch and Alain D. Renaud. Retrieved from Sedar on March 16, 2023.

Table 1. Comments and recommendations on the Key Lake and McArthur River Mines License Renewal Application

#	Document Reference	Comment	Recommendation
1.	General Comment	BNDN notes that Cameco has had limited to no interaction with our Nation regarding their activities at the KLO and MRO. While BNDN recognizes that the KLO and MRO are in the primary land use area of other Indigenous Nations and are further from our core current land use area, the KLO and MRO are on our Treaty and Ancestral Lands. A number of our members have worked at the KLO and MRO over the life of the operations and our members have deep	a. BNDN requests that Cameco work with our Nation to develop a long-term relationship agreement to facilitate our engagement and participation on all Cameco projects in the Athabasca Basin. The scope of this long-term relationship agreement would include operating mines, mines on care and maintenance, development projects, closed mines and exploration properties. b. BNDN notes that all our comments and recommendations on this license

		connections to the land in and around the KLO and MRO. BNDN asserts that all development in the Athabasca Basin has impacts on our Treaty and Aboriginal rights, and as such it is important for proponents operating in the Athabascan Basin such as Cameco to engage with our Nation to understand the impacts of their operations on our Treaty and Aboriginal rights and for our members to have a better understanding of Projects on our Ancestral Lands.	renewal application should be understood within the context of our desire for a meaningful, positive, long-term relationship between Cameco and our Nation that fosters mutual understanding and collaboration.
2.	CMD 23-H6-1; Section 1.2.1 License Term	As part of the relicensing application, Cameco is seeking a 20-year term. They have argued that this is an appropriate length for the license because they have a great deal of experience operating at both sites, with strong management systems in place that protect the environment, workers, and the public. By having a longer-term license, Cameco will have greater stability which may improve planning at the site. BNDN believes that the opposite is true; a shorter term would facilitate better planning for the site. This is because Cameco benefits from the consultation and engagement process that is required as part of the relicensing. Through this process, they can consult with communities, like ours, to hear our perspectives and respond to questions that we have. Should relicensing not be necessary until 2043, it is likely that our communities perspectives will be ignored for the full term of the license. Furthermore, the relicensing process offers an opportunity for reflection and reevaluation of the Project with the benefits of the knowledge of the day. Over 20 years, so many important	BNDN recommends that the CNSC approve a license term of 10 years for the Project. This will ensure that operations and management are responsive to the input of Indigenous nations, the public, and the state of the environment. Otherwise, there will be limited opportunity to provide input on the Project until the anticipated end of life in the 2040s.

		aspects of technology, environment, and society will change that are material to the Project. This includes many topics, such as environmental guidelines (e.g. MDMER release limits), public perspectives on nuclear power, and health of important species. For example, our knowledge and understanding of woodland caribou (*Rangifer tarandus*) is constantly growing and the status of those populations are changing. It is necessary for projects such as Key Lake and McArthur River to be responsive to those changing conditions in the management of the Project.	
3.	General Comment	In email correspondence between our Nation and Cameco we have requested a copy of the Preliminary Decommissioning Plan, Environmental Risk Assessment and program documents for the KLO and MRO. Cameco informed our Nation that these documents are considered confidential and we can ask questions on the documents or review the 2 page summary available online. BNDN questions the logic behind these documents being considered confidential. These documents are consequential for our ability to assess the current and future impacts of the KLO and MRO on our Treaty and Aboriginal rights. Without the ability to provide rigorous and detailed commentary on the Preliminary Decommissioning Plan, Environmental Risk Assessment and program documents we cannot provide meaningful input into project operations and closure in a way that mitigates impacts to our Treaty and Aboriginal rights and maximizes our ability to exercise our rights post closure.	a. BNDN requests that Cameco share the detailed versions of their Preliminary Decommissioning Plan, Environmental Risk Assessment and other program documents with our Nation so that we can provide meaningful input and commentary on the documents b. BNDN requests that engagement and consultation on the requested documents occurs through a long-term relationship agreement with our Nation.

4.	KLO Environmental Protection Review Report Table 3.4 and Section 3.1.3.1	Table 3.4 and Section 3.1.3.1 of the KLO EPR show that since the KLO was placed on care and maintenance in 2016, the concentrations of a number of contaminants have increased in the effluent discharge from the Key Lake Mill. Specifically, uranium concentrations increased by about 400% and nickel concentrations have increased by around 300%. In Section 3.1.3.1 the CNSC provides a discussion as to why these exceedances occurred. Section 3.1.3.1 does not include any information on what Cameco did to control Ni and U in the effluent once it was detected. BNDN notes that while the average effluent values have all been well below MDMER water quality objectives, the data presented are averages rather than individual sample results. The fact that the individual samples has not been included in this EPR or the EPR for MRO or Rabbit Lake is concerning for BNDN as our review of the primary data is essential for interpreting and understanding the environmental monitoring results.	a. BNDN requests that Cameo provide information on the efforts undertaken on site during care and maintenance to reduce concentrations of uranium and nickel in the Key Lake Mill final effluent. The format and specific content of the requested detailed information package should be determined through engagement with our Nation via a long-term relationship agreement. b. BNDN requests that Cameco provide all environmental monitoring data collected at the KLO, MRO and Rabbit Lake Mine for our review and records. The format and specific content of the requested detailed information package should be determined through engagement with our Nation via a long-term relationship agreement.
5.	MRO Environmental Protection Review Report Table 3.4 and Section 3.1.3	Section 3.1.3 of the MRO EPR notes that effluent from the MRO mine water treatment plant is batch discharged into a muskeg receiving area. Depending on the volume of water discharged and the concentrations of nutrients and other chemical constituents, the discharge of effluent could result in geochemical processes that induce the methylation of mercury already present in the muskeg. Given the significant risks mercury can pose to wildlife and humans as methylmercury, BNDN sees understanding the potential risks of mercury methylation at the MRO as important to properly assess.	a. BNDN requests that Cameco provide information on the mercury and methylmercury monitoring program(s) undertaken at the MRO and KLO. The format of the requested detailed information package should be determined through engagement with our Nation via a long-term relationship agreement. b. BNDN requests that Cameco provide all mercury monitoring results as far back as they are available in a digital format. The specific content of the requested detailed information package should be determined through engagement with our Nation via a long-term relationship agreement.

6.	KLO Environmental Protection Review Report Table 3.4 and Table 3.6	BNDN notes that the effluent quality from the KLO reverse osmosis (RO) plant is far better than the water quality from the bulk neutralization circuit. Given the far superior quality of the RO plant, it is unclear to BNDN why the RO treatment is not also applied as an additional treatment step for bulk neutralization circuit to significantly improve effluent quality.	a. BNDN requests that Cameco clarify why RO technology is not utilized as a final step in the bulk neutralization circuit to improve effluent quality. b. BNDN requests that Cameco investigate the feasibility of utilizing RO treatment technology to the bulk neutralization circuit.
7.	KLO Environmental Protection Review Report Table 3.7	BNDN notes that concentrations of nickel in RO effluent increased during care and maintenance in 2020 and 2021, and there was a significantly higher loading of nickel to Horsefly Lake. In KLO EPR Section 3.1.3.2 the CNSC states that the higher loadings are due to both higher nickel concentrations and higher volumes of effluent released. BNDN requires further information to understand the reason that for the increased concentrations of nickel and volume of effluent discharged during care and maintenance and the efforts made to reduce the increased loading by Cameco.	BNDN requests that Cameco clarify the reasons for the increased effluent volumes and concentrations of nickel in the effluent during care and maintenance, and the efforts made to reduce the increased loading. BNDN would prefer that Cameco provide this information within the structures developed in a long-term relationship agreement between BNDN and Cameco.
8.	KLO Environmental Protection Review Report Section 3.1.3.2; CMD23 H6-1 Section 3.10.7	Section 3.1.3 of the KLO EPR notes that there were 2 high pH discharge events to Horsefly Lake, with the first in December 2013 and the second in October 2018. No information is provided in the EPR as to whether the discharge events resulted in any fish kills or mortality of other species in Horsefly Lake or downstream. CMD23 H6-1 Section 3.10.7 notes that there have been a total of 30 reportable discharge events at the KLO and 12 events at the MRO during the current license term. All of these events are important for BNDN to understand the potential impacts to the receiving environment and how Cameco has addressed these	a. BNDN requests that Cameco report as to whether any fish kills or the mortality of any other aquatic organisms was observed as a consequence of the high pH discharge events. BNDN would prefer that Cameco provide this information within the structures developed in a long-term relationship agreement between BNDN and Cameco. b. BNDN requests that Cameco provide our Nation with information on all effluent discharge exceedances at the KLO and MRO during the current license term. BNDN would prefer that Cameco provide this information within the structures developed in a long-term relationship agreement between BNDN and Cameco.

		exceedances through assessing impacts and identifying opportunities for improved operational performance on site.	
9.	KLO Environmental Protection Review Report Tables 3.16, 3.18 and 3.19; CMD23 H6-1 Figure 3.10-2; CMD23 H6-1 Section 3.10.7.1	KLO EPR Tables 3.16, 2.18 and 3.19 show a number of sampling results where there are water quality or sediment quality exceedances in the receiving environment. Some notable examples include: • Ongoing Ni and Co exceedances at station 4.0 (Table 3.16) • Exceedances of As and Mo in Unknown Lake sediments, as well as increasing concentrations of Cu (Table 3.18) • Exceedances of As, Co, Ni and U in Little McDonald Lake sediments (Table 3.19) These measures of increased metal loading to the receiving environment are a concern to BNDN, as the KLO is reasonably expected to continue operating for the foreseeable future and metal loadings to the environment are increasingly likely to cause chronic impacts in the receiving environment that are potentially avoidable with more stringent and achievable environmental protection standards.	BNDN requests that Cameco provide a discussion on the reason for the high levels of metals at station 4.0, in Unknown Lake and in Little McDonald Lake, and the efforts they are making to minimize the continued loading of metals to the receiving environment. BNDN would prefer that Cameco provide this information within the structures developed in a long-term relationship agreement between BNDN and Cameco
10.	KLO Environmental Protection Review Report Section 3.2.4.2	Section 3.2.4.2 of the KLO EPR documents the impacts to groundwater downgradient from the AGTMF and the Deilmann North Waste Rock Pile (DNWRP). BNDN notes that the AGTMF and the DNWRP are permanent features of the landscape and will continue to contribute metal loading to the receiving environment through groundwater for centuries to come. This will likely lead to avoidance of the area by our members. The efforts that Cameco takes to minimize and	BNDN requests that Cameco provide our Nation with regular updates on the monitoring of contaminated groundwater at the KLO, including efforts made to remediate the receiving environment. BNDN would prefer that Cameco provide this information within the structures developed in a long-term relationship agreement between BNDN and Cameco

		mitigate impacts from ongoing groundwater contamination is consequential to our ability to exercise our Treaty and Aboriginal rights.	
11.	General Comment	Many of the documents BNDN has reviewed for this license renewal discuss the modernization activities that Cameco has been undertaking at the KLO and MRO while under care and maintenance. BNDN is generally supportive of the intention of modernizing the operation to ensure that the KLO and MRO operate in accordance with current best practices. BNDN also notes that some aspects of the operation are more complex and costly to modernize than others, and that Cameco may not be prioritizing modernization activities that our Nation would consider to be highly important. BNDN also notes the limited information available to our Nation in regard to the aspects of the operation Cameco is considering modernizing and how they are prioritizing these aspects. BNDN wishes to have substantially more information on this.	BNDN requests that Cameco provide BNDN with available reporting on all potential modernization activities on site and engage with our Nation to discuss what modernization activities are a priority to pursue for Cameco and for our Nation. The format and specific content of the requested information and engagement should be determined through engagement with our Nation via a long-term relationship agreement.
12.	General comment	BNDN cannot meaningfully comment on the current and future impacts of KLO and MRO on the terrestrial environment and on our Treaty and Aboriginal rights based on the available Environmental Protection Review Reports. The summary reports provided do not contain the details required to fully understand the impacts of the operations to the terrestrial environment.	BNDN requests that Cameco share the detailed version of the Environmental Risk Assessment (2020) with our Nation so that we can provide meaningful input and commentary on impacts to the terrestrial environment and our Treaty and Aboriginal rights.
13.	KLO Environmental Protection Review Report - Section 3.2.2.2 Terrestrial	Based on the KLO Environmental Protection Review Report, only 5 of the potential 16 terrestrial species at risk (SAR) were assessed in the ERA. The other 11 potential SAR were not included in the ERA because they were	BNDN requests that Cameco share information on terrestrial SAR surveys including survey effort, survey methodology, survey conditions etc. If surveys were not conducted, provide justification for

	habitat and species – Terrestrial Species at Risk	not observed on-site. The report does not include any details related to SAR surveys (e.g. search effort, survey methods etc.). For this reason, LKFN cannot comment on whether any additional SAR should have been assessed in the ERA. Most of the SAR are cryptic and require substantial survey effort and/or specific survey protocols to deem absent from the site. Without conducting species-specific surveys, species absence cannot be concluded.	excluding the 11 potentially present SAR from the ERA.
14.	MRO Environmental Protection Review Report: 3.2.2.1 – Soil Quality	BNDN notes that blueberry sampling frequency will be decreasing from a 3-year sampling cycle (during the current licensing period) to a 6-year sampling cycle during the upcoming licensing period, despite the mines being in operation. This decrease in sampling frequency concerns our community since blueberries, and other plants found in the vicinity of the site are an important traditional food in our diet.	BNDN requests an explanation for decreasing the frequency of blueberry sampling from once every 3 years, to once every 6 years. How can we be sure the blueberries we eat are safe for consumption when testing is occurring this infrequently?
15.	KLO Environmental Protection Review Report - 3.2.2 Terrestrial environment – ERA Predictions	The ERA (2020) predictions provided in the KLO Environmental Protection Review Report are concerning, and do not provide adequate detail for BNDN to comment on the impacts of the KLO on lichen and the upper levels of the food chain (e.g., caribou, community members etc.). The ERA predicts "there is a possibility of measurable changes in lichen COPC concentration due to air deposition". The potential food chain impacts for animals that consume lichen were also addressed and showed that negative influences from the consumption of lichen surrounding Key Lake Operation are not expected. However, the full report needs to be reviewed to fully understand these statements, and potential implications to BNDN's Treaty and Aboriginal Rights.	BNDN requests that Cameco share the ERA (2020) so our community can more fully understand the results, and how the operation of the KLO may impact the safety of our traditional diet.

16.	KLO Environmental Protection Review Report - 3.2.2 Terrestrial environment – Exposure to hazardous substances	The ERA (2020) predictions provided in the KLO Environmental Protection Review Report are concerning, yet do not provide adequate detail for BNDN to comment on the impacts of hazardous substances exceedances in aquatic-based birds and mammals. The ERA indicates arsenic and selenium exceedances to terrestrial receptors that are most connected to the aquatic environment. The potential for negative influences is indicated for some receptors, mostly aquatic-based birds and mammals and limited to the David Creek drainage, Delta Lake, and Farfield Pond. This concerns BNDN as birds and mammals are part of our traditional diet. The detailed ERA must be reviewed to fully understand the full implications of these exceedances on our Treaty and Aboriginal rights.	BNDN requests that Cameco share the ERA (2020) so our community can more fully understand the results, and how the KLO may impact the safety of our traditional diet. In addition, BNDN requests to know what action will be taken to mitigate the exposure of terrestrial wildlife to hazardous substances, and what environmental protection measures will be implemented to prevent further exposures.
17.	General Comment	The protection of aquatic ecosystems is a high priority for BNDN. Our community believes that we must take care of the lands and waters so that they take care of us. This includes ensuring that appropriate monitoring and standards for operating mining projects are in place, such as effluent discharge below relevant criteria/guidelines and that evidence demonstrates no effects on aquatic ecosystems. As part of the requirements under the Metal and Diamond Mine Effluent Regulations the Proponent has undertaken multiple rounds of Environmental Effects Monitoring. These studies investigate the potential effects of effluent on water, sediment, fish, and benthic invertebrates. Summary information presented in the EPRs for Key Lake and McArthur River. This data shows some evidence of increased concentrations in	BNDN requests the following documents be shared with our community for review by our Nuh Nene (Our Lands) Department: • Final report for 2021 environmental effects monitoring at Key Lake (reference information not known) • CanNorth, "McArthur River Investigation of Cause Final Report" 2019. • CanNorth, "McArthur River Operation 2015 comprehensive aquatic monitoring report" 2016. Cameco Corporation, "Comprehensive Aquatic Environmental Monitoring Report" June 2022.

		sediment of Unknown Lake for arsenic, copper, molybdenum, nickel, and selenium. Within Little McDonald Lake, arsenic, copper, lead, nickel, selenium, uranium, and zinc also showed exceedances. Unfortunately, only summary information is available in the EPRs. As a result it is difficult to adequately assess any potential impacts on the aquatic ecosystem.	
18.	Key Lake EPR; Section 3.2.3 Aquatic Environment	BNDN has concerns about accumulation of contaminants in the water and sediments of Wolf Lake (and downstream areas of the David Creek drainage). Due to the long-term discharge of effluent, dating back as early as 1983 and ongoing batch releases from the monitoring ponds, there is a risk that accumulated contamination will pose a risk to the biota in this system, including benthic invertebrates and fish. Indeed, monitoring results of contaminants in discharge to Wolf Lake show an increasing trend for loadings of many contaminants including arsenic, nickel and uranium (Key Lake EPR, Table 3.5). If these contaminated waters/sediments are not managed and remediated, they are likely to result in long-term impairment of the David Creek ecosystem and accumulation of contaminants in fish.	BNDN requests clear information from Cameco and the CNSC on how contaminants (including annual waterborne loadings) discharged to Wolf Lake will be managed through the remaining years of operations and remediated as part of closure. The risks associated with these contaminants has been confirmed through existing Risk Assessments and will only increase as time goes on.

5.0 Conclusion

Birch Narrows Dene Nation looks forward to intervening at the Commission hearing for the license Renewal application. We expect that our comments and recommendations will be meaningfully considered by the Crown prior to a decision being made on Cameco's application. We are confident that identified issues can be resolved through ongoing engagement with the CNSC, Saskatchewan Ministry of Environment and Cameco Corporation. Birch Narrows Dene Nation also looks forward to the continued engagement with Cameco Corporation for their ongoing and future activities on our Ancestral Lands.