# Taykwa Tagamou Nation

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## MEMO

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**From:** Dwight Sutherland, Director of Lands and Resources, Taykwa Tagamou Nation

**Date:** September 7, 2022

**Subject:** Technical review and comments on the Canada Nickel Company, Crawford Nickel Project Initial Project Description

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Taykwa Tagamou Nation (TTN) has reviewed the Initial Project Description (IPD; the Description), for Canada Nickel Company's (the Proponent) Crawford Nickel Mine Project (Crawford Mine; the Project) Federal Impact Assessment (IA).

The Impact Assessment Agency of Canada (IAAC; the Agency) has correctly identified TTN as an Indigenous Nation requiring consultation on the Project. The Project lies deep within the heart of Taykwa Tagamou Nation's Traditional Territory and is is located approximately 45km from our reserve lands. The Project is likely to have a high level of impact on our Aboriginal and Treaty rights and interests, as well as our health, socio-economic wellbeing, culture, and our way of life. These potential impacts must be mitigated or accommodated by the Proponent. We expect both the Proponent and IAAC to consult with Taykwa Tagamou Nation as a highly impacted Nation on the Project and to engage with our Nation collaboratively in conducting the impact assessment on the Project.

Our Traditional Territory has already been significantly and negatively impacted by development, including mining, hydro-electric projects, forestry, agriculture, pipelines and transmission lines. Cumulative impacts therefore also remain a significant concern for our Nation. The prevention,

mitigation and remediation of developments that impact our rights, culture and way of life is of key importance to us.

We have previously shared our Engagement Protocol with the Agency to help inform ongoing consultation. In compliance with this protocol, the Proponent and the Agency must consider the preliminary potential impacts on our rights, claims, interests, health, cultural heritage, and livelihoods that we have identified through our review of the IPD in **Appendix A** of this memo.

**Appendix A** of this memo includes information requests and recommendations based on our review for the Proponent and the Crown. It will be necessary for the Proponent to provide the requested information for TTN to fully understand the potential impacts to our Treaty and Aboriginal rights, interests and claims from the proposed Project.

TTN looks forward to developing a positive, collaborative relationship with the Crown and the Proponent throughout the Federal Impact Assessment.

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# APPENDIX B: COMMENTS AND RECOMMENDATIONS ON THE IPD

| COMMENT # | DOCUMENT REFERENCE | COMMENT | RECOMMENDATION |
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| 1. | Section A.4.4 Plans for Future Engagement | The Proponent notes that future engagement activities will discuss the involvement of Indigenous Peoples in the environmental baseline studies process according to each community or group's interests, expectations, and capacity for participation. | TTN expects that the Proponent will work collaboratively with TTN to appropriately scope baseline studies, as well as ongoing monitoring efforts, providing sufficient financial or technical resources, where necessary, such that TTN can be fully engaged throughout the Project. |
| 2. | Section B.3.2 Stockpiles | The waste rock and overburden stockpiles represent a potentially significant source of contaminants to the aquatic and terrestrial environment. Stockpiles must be designed in a manner that will minimize the risk of failure as well as ensure runoff and airborne emissions are not able to enter the environment, as the Mattagami and Abitibi Rivers are in the heart of TTN Traditional Territory and are the potential receivers for contamination from the Project | Additional information will be required to assess the design and effectiveness of the stockpiles and associated water management infrastructure to ensure contaminants or material from the stockpiles is unable to escape into the uncontrolled environment. |
| 3. | Section B.3.2 Tailings Storage | Tailings will be stored at the Tailings Management Facility (TMF), as well as the Main Zone pit and East Zone pit. At present insufficient information is provided by the Proponent to identify whether the facilities will be constructed in a manner that will prevent interaction of the tailings with uncontrolled surface or groundwater flow. | TTN will require the Proponent to provide additional preliminary design information regarding how tailings storage facilities will be isolated from surface and groundwater sources, to ensure tailings do not come into contact with the uncontrolled environment. |
| 4. | Section B.3.2 Domestic and | The Proponent notes that special management / hazardous materials may be produced from the | TTN will require the Proponent to provide outlining the potential hazardous wastes that |

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| | Industrial Wastes | Project site during construction and operation. These materials are to be shipped off-site to appropriate facilities. It is however unclear the range of hazardous materials that will be generated from the project, as well as whether or not these materials may be stockpiled on site, and for how long before being exported off-site. | may be produced during construction, operation, and closure, as well as how these wastes will be stored on site until they are transported to an appropriate waste management facility. |
| 5. | Section B.3.2 Buildings and Yard Areas | The Proponent does not describe measures to reduce the impacts of nitrogen-related constituents associated with explosives use from entering the environment. Explosives, when used in high quantities can serve as a meaningful source of nitrogen especially to the aquatic environment, contributing to adverse water quality changes. | TTN will require the Proponent to provide further information on how they will minimize the release of nitrogen into the environment from the use of explosives.. |
| 6. | Section B.3.2 Water Management Facilities | The Proponent proposes to collect mine water from pit dewatering for re-use in the process plant. It is unclear whether an appropriate water balance has been conducted to identify what proportion of water from mine dewatering can be used for processing.<br><br>Finally, it is unclear from the IPD the water storage capacity for the Project will be sufficient to hold all contact water at all points through the Project's lifecycle. Therefore at this point, it is not possible to discern whether it will be necessary to discharge untreated contact water to the environment at any | a. TTN will require the Proponent to conduct a water balance analysis of all water (both contact and non-contact), to demonstrate an ability to effectively manage the volume which is expected to be collected, used, and/or discharged from the Project site.<br><br>b. Water from all sources will need to be stored on site before treatment, reuse, and/or discharge to the environment. TTN will require the Proponent to provide additional information in the preliminary design of the water storage pond system |

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| | | point during the life of the Project. | (e.g. primary and secondary collection ponds), including the volume and location. |
| 7. | Section B.3.2 Water Management Facilities | The Proponent notes that "If required, an effluent treatment plant may be installed for additional treatment on some of the water sources to ensure effluent quality can be consistently achieved" At this time it is unclear what sources may or may not meet sufficient regulatory requirements for wastewater effluent.<br><br>Given the importance of protecting the waterways which will be the receivers of effluent from the project, TTN will expect the proponent to achieve the most conservative water quality criterion for the protection of aquatic life at the point of discharge, with no mixing zone. | TTN will require the Proponent to meet the Provincial Water Quality Objectives or Canadian Water Quality Objections (whichever is more stringent) at the point of discharge for all parameters in effluent and request that the Proponent begin discussions with our Nation regarding discharge water quality.. |
| 8. | Section B.3.2 Water Management Facilities | The Proponent notes that they are currently investigating potential effluent discharge locations that include the Mattagami River, North Driftwood River, and/or the West Buskegau River. These rivers are all of significant cultural and ecological importance to TTN. It is essential that the water quality and water quantity of these rivers not be adversely impacted by the Project, as they serve as important habitats and sources of fish and wildlife harvest, as well as transportation corridors for TTN members. | The Proponent must fully engage with TTN in identifying effluent discharge locations, involving TTN's Traditional Knowledge and expertise, in all studies associated with siting of the effluent discharge locations. TTN expects that the Proponent will obtain our explicit consent for the final effluent discharge location and the associated water quantity and quality criteria. |

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| 9. | Section B.3.2 Water Management Facilities | Additional process and site supply water may be sourced from a local yet undefined watercourse. Given the amount of ore which will be processed by the Project when fully operational, the amount of water usage may be quite substantial, and therefore may be detrimental to water quantity in source waters. This may have direct impacts on how and where TTN conduct traditional practices, including but not limited to hunting and fishing.<br><br>Fluctuations in water levels in source water courses may contribute to an increased risk of mercury mobilization, which may have impacts on fish, wildlife, and those who harvest them.<br><br>Drought and extreme precipitation events are expected to increase in the face of climate change throughout the Project life. These climate-related impacts may have a direct impact on the viability of source water courses. | a. The Proponent must fully engage with TTN in identifying potential water sources, involving TTN's Traditional Knowledge and expertise, in all studies associated with siting of the source locations. TTN expects that the Proponent will obtain our explicit consent for the final effluent discharge location and the associated water quantity and quality criteria.<br><br>b. The Proponent must conduct a thorough investigation into the risk of mercury mobilization in any source water courses that may be selected. Additionally, if water is sourced externally to the Project site, ongoing monitoring of mercury and methyl mercury must be conducted in the downstream environment of any or all water sources, for the duration of the Project life.<br><br>c. The Proponent must consider the potential impacts of extreme climate events in selecting any source water courses. Additionally, the Proponent must present an adaptive management plan for responding to impacts on water levels in source water courses, as a result of Project-related withdrawal. |

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| 10. | Section B.3.2 Proposed Mine Facilities and Infrastructure (Designated Project) | The proposed Project site is bisected by the existing Highway 655 corridor as well as two Hydro One Networks Inc. electricity transmission lines. It is anticipated that Highway 655 and at least one of the two transmission lines will need to be relocated for the Project to proceed. As these are major undertakings which will require separate regulatory processes (assumed to be at least an Ontario Class Environmental Assessment), the cumulative effects of these undertakings need to be fully considered as part of the impacts of this project. | The Proponent must consider the direct and cumulative impacts of the highway and transmission line relocation within the scope of impact assessment for the Crawford Project. |
| 11. | Section B.3.2 Power Supply | Diesel-fired generation may be used in the construction phases and closure phase, as well as during emergencies. Diesel combustion engines are an important source of nitrogen dioxide and other greenhouse gases. | The Proponent must demonstrate that atmospheric impacts will not exceed regulatory guidelines for nitrogen dioxide, and further, must not contribute meaningfully to greenhouse gas emissions. |
| 12. | Section B.3.2 Accommodation | TTN notes that the Proponent expects that mine workers will commute from nearby communities to the Project site, rather than establish an on-site or nearby accommodation complex. TTN expects that TTN members, as well as residents from other neighbouring communities, will comprise the vast majority of workers at the Project site. However, we are concerned about:<br><br>I. The potential for increased road accidents, including those associated with wildlife collisions. | a. The Proponent must outline how it will ensure collisions associated with increased traffic will be mitigated to not only minimize risk to human health, but to minimize impacts on local and regional services/resources, and minimize impacts on wildlife mortality.<br><br>b. TTN expects that the Proponent will work with our Nation to identify the full range of concerns related to the socio-economic effects associated with the Project, as well |

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| | | II. The potential socio-economic impacts of transient workers from outside the community, on several aspects of our community, including but not limited to:<br>i. impacts on the community and social services, impacts on infrastructure quality,<br>ii. impacts on housing cost and/or availability,<br>iii. impacts on health and psycho-social well-being of our members,<br>iv. increase in crime, sexually transmitted disease, and violence against women and/or members of the LGBTQ2+ community,<br>v. increased natural resource pressures as a result of transient or temporary workers harvesting fish/wildlife in the area. | as solutions for avoiding, mitigating, or accommodating impacts. |
| 13. | Section B.3.2 Compensatory Aquatic Habitat | As currently identified, the Project will overprint tributaries of the North Driftwood River and West Buskegau River. Although the Proponent state that where practical these tributaries will be diverted around the project facilities, it is unclear whether this is a practical measure at this time and further whether or not diversion will impact the water quality or quantity. TTN uses the downstream environment for a wide range of activities, including the harvest of fish and wildlife. Changes to the surficial hydrology must not negatively impact the | a. TTN must be fully engaged in studies related to the identification of compensation habitat, including the need for compensation measures, equivalency, mitigation and other considerations. Furthermore, the Proponent must incorporate the use of TTN Traditional Knowledge in developing plans which will impact aquatic habitat and surface hydrology. |

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| | | ability of TTN members to their Traditional Territory. | b. TTN will also be interested in pursuing community-focussed offsetting measures for any aquatic habitat overprinted by the Project, and will expect the Proponent to work with our Nation to develop community-focussed offsetting measures. |
| 14. | Section B.3.2 Compensatory Aquatic Habitat | In addition to the potential overprinting of tributaries of the North Driftwood River and West Buskegau River, Project facilities including the process plant and tailings management facility are found in close proximity to Martin Lake, Gerry Lake, Jack Lake, Sutherland Lake, and Davis Lake. These lakes serve as headwaters to the North Driftwood River and West Buskegau River, which ultimately feed the Abitibi River. Additionally, water storage ponds and the proposed rerouted Highway 665 and transmission line are located either overprinting or directly adjacent to unnamed lakes/ponds flowing into Jocko Creek, which ultimately drains into the Mattagami River. Both of these rivers are essential to the regional ecosystem, and further, play an integral role in the cultural fabric of TTN, as members have and continue to rely on the Abitibi River, and Mattagami River, as well as their headwaters for fishing, hunting, and transportation. Any activity that is detrimental to the quality, or quantity of water, or the habitat and activities these water courses support would adversely impact TTN Aboriginal and treaty rights. | a. The Proponent must consider the full impacts of the Project activities on the surrounding waters, including impacts on water quality, water quantity, access, habitat, and productivity. Any circumstance in which Project activities may impact the aquatic environment must be examined and TTN must be fully engaged in the development and implementation of plans for avoidance, mitigation, accommodation and/or compensation.<br><br>b. Further, the Proponent must conduct studies on impacts on water quantity and quality as a result of Project activities, establishing a baseline and predictions for biophysical parameters, as well as utilization by fish, wildlife, and TTN harvesters. |

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| 15. | Section B.3.3 Open Pit | A portion of the mine tailings will be stored in the Main and East Zone of the pit. There is concern that as the pit is naturally refilled that these tailings may interact and contaminate surface or laterally moving groundwater. If contaminated water can mobilize, the tailings may serve as a contaminant source for the downstream environment. | TTN will require the Proponent to conduct ground and surface water modelling to demonstrate risks associated with post-closure tailing interaction with ground and surface water will not have the ability to migrate beyond the Open Pit. Additionally, closure plans and Project designs must ensure tailings piles do not come into contact with the uncontrolled environment. |
| 16. | Section B.3.3 Stockpiles and TMF | Preliminary geochemical investigations indicate that mine rock and tailings stockpiles are not potentially acid generating. While these results are encouraging, they are only preliminary and may not be representative of the entire ore body to be mined. Further, the Proponent does not provide information on other forms of contaminant runoff which may be associated with waste rock piles, including but not limited to mercury and other toxic metals. | TTN will require the Proponent to conduct further geochemical analysis to assess the potential for metal leaching under acidic and non-acidic conditions, for tailing, waste rock and other rock materials that will be stockpiled and left on site. Additionally, the Proponent must demonstrate contingency plans to ensure stockpile or tailings runoff can be managed in a manner that allows for runoff waste to be safely discharged to the environment following Project closure. |
| 17. | Section B.3.3 Water Management Facilities | It is unclear the duration that is expected for post-closure activities such that the Proponent will be in a position to remove water management facilities. The duration of closure activities is an important factor in ensuring adequate security is held for the Project. | TTN will require the Proponent to provide a preliminary estimate of resources and timelines necessary to allow for water from the Project site to be discharged directly to the environment following operations. |

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| 18. | Section B.4 Capacity Estimates | The Project will produce a significant amount of ore concentrate throughout the life of the Project. The Proponent is currently planning to ship is the concentrate to market by rail. The increase in rail traffic may have several adverse impacts on TTN members and the exercise of their rights near the new spur line and existing rail line. This is a result of increased wildlife collisions, noise and disturbance in the railway corridor. | TTN will require the Proponent to provide a breakdown of expected impacts on rail traffic (frequency) as a result of ore concentrate transportation. Additionally, the Proponent must characterize the impacts on noise, vibration, wildlife disturbance, and wildfire risks, associated with an increase in rail traffic. |
| 19. | Section C.6.1 Climate, Air Quality, Noise, and Light | With the exception of the estimate for the maximum probable precipitation value, much of the climatological data presented is more than 40 years old. While this may be the most up-to-date information publicly available, it may not adequately represent contemporary conditions, and further, is unlikely to be reliable for projecting climatological conditions in the future given the uncertainty and volatility of climate change. | TTN will require the Proponent to provide up-to-date climatological information and demonstrate how extreme conditions due to climate change will be incorporated into both baseline conditions and future predictions. |
| 20. | Section C.6.5.1 Flora and Vegetation Communities | TTN members harvest a range of plant-based foods and medicines, for both traditional and commercial purposes. It is unclear from the information that has been provided whether plants of cultural significance are found at the Project site. | TTN will require the Proponent to provide a complete list of plants inventoried at the Project site, to assess the impacts on TTN harvesters. |
| 21. | Section C.6.5.2 Mammals | In addition to an illustration of the presence and absence of mammal species found overlapping the Project site, it is important to understand the full utilization of habitat by mammals that may be impacted or influenced by the Project site. | a. In developing the Impact Assessment, TTN will require the Proponent to conduct additional studies examining the full range of use at the site, including as a |

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| | | | result of seasonal or transient individuals. |
| | | Additionally, no information is presented on the potential for habitat loss of species of importance (e.g. moose, geese, deer, hare), beyond the direct project footprint. | b. TTN will require the Proponent to quantify the amount of total habitat lost as a result of the Project footprint, surrounding disturbance area, and area of perceived impacts. Additionally, the Proponent must work with TTN to understand how the regional area is used by TTN members presently, and how wildlife harvest and land utilization will be altered as a result of this Project. |
| 22. | Section C.6.6 Aquatic Environment | The Proponent note that fish tissue analysis was conducted, however, is not presented in the Initial Project Description. TTN is concerned about the potential of potentially bioaccumulating substances mobilized by the Project entering the aquatic food web. This is a concern as TTN members harvest large-bodied fish from the downstream environment, as well as rely on a healthy ecosystem that directly interacts with the downstream aquatic environment. | TTN will require the Proponent to present early baseline information on fish contaminant body burden, as well as present a robust plan for establishing baseline conditions, predicting future scenarios, and monitoring fish and wildlife tissue through the duration of the project life-cycle, ensuring that contaminants do not pose a risk to the environment or TTN members who consume fish and wildlife that interact with the downstream environment. |
| 23. | Section C.6.7 Species of Conservation Concern | Although field studies did not observe the presence of Woodland Caribou in the area surrounding the Project site, this region has been noted as previously impacted by human activity. Regardless of whether Caribou are presently found in the Project site or surrounding area, the Proponent, cannot act to further degrade the habitat of these species at risk. | TTN will require the Proponent to demonstrate how project activities can be conducted in a manner which is consistent with Woodland Caribou recovery plans and contribute to a net benefit to Woodland Caribou habitat both during the construction and operations phase as well as post-closure. |

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| 24. | Section C.7.2 Social Context | Due to public data limitations, the Proponent is unable to provide specific analysis for non-binary individuals. Non-binary individuals, as well as other members of the LGBTQ2+ community, are often disproportionately impacted by projects such as this, including being under-represented in economic opportunities, as well as facing increased pressures on social well-being and health. | As required by the Impact Assessment Act, TTN will require the Proponent to present a robust GBA+ analysis, which should include analysis of how this project will impact all members of the gender spectrum as well as members of the LGBTQ2+ community, and other potentially vulnerable communities. |
| 25. | Section C.7.4 Indigenous Nations | The Proponent note that an assessment of baseline health for TTN has not been conducted, however, plans to conduct engagement activities and primary research. At this time there is insufficient information to assess the suitability of the existing health condition for TTN (or other Indigenous Nations). | TTN will require the Proponent to engage our Nation directly in the establishment of baseline conditions and predictions as part of this study. Given the connectedness of TTN members to the lands and waters surrounding the Project site, including active subsistence activities (e.g., the harvest of plants, fish, and wildlife for food), ensuring there are no human health impacts as a result of Project activities is paramount to TTN. |
| 26. | Section E.2 Changes to Fish and Fish Habitat, Aquatic Plants and Migratory Birds | The Proponent identifies potential impacts to fish and fish habitat as defined by subsection 2(1) of the Fisheries Act, as a result of overprinting of local water courses and potential downstream flow reductions. TTN agrees that these changes may be experienced, however, the Proponent fails to acknowledge the potential change to local and far-field water quality, habitat quality, and ecosystem dynamics as a result of project activities such as the | TTN will require the Proponent to conduct a robust analysis to examine all pathways in which project activities may influence the downstream aquatic environment, including direct impacts (e.g. destruction of habitat or fish mortality) and indirect impacts (e.g., changes in water quality, changes in habitat composition, changes in flow regimes and |

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| | | discharge of effluent to a yet unknown receiving water course, groundwater removal/mine dewatering, atmospheric or overland (runoff) deposition of contaminants, and failures. These activities may directly or indirectly alter the chemical, and/or biophysical composition of the local and far-field receiving waters. | timing, changes in prey abundance, changes in aquatic productivity). |
| 27. | Section E.4 Potential Effects to Indigenous Peoples – Heritage, Traditional Lands and Other | The Proponent presents a narrow representation of concerns identified through engagement to date. The Proponent must commit to continuing to engage meaningfully with TTN to ensure that all concerns related to TTN's Aboriginal and treaty rights as they are identified by TTN are addressed fully. This includes examining not only the realized biophysical impacts of the Project but also the psycho-social impacts as a result of perceived impacts (realized or not). Perceived impacts that restrict the practice of Aboriginal and/or treaty rights, or that otherwise degrade the overall wellbeing of TTN members are tantamount to realized biophysical impacts. | TTN will require the Proponent to commit to ongoing engagement with TTN, and meaningfully addressing all concerns as they are presented through the life of the Project. |