

Technical Scoping Session Summary Notes Pine Point Mine Project

EA2021-01

May 4 and 5, 2021

This report summarizes the Q&A and facilitated discussions that took place during the Technical Scoping Sessions for the Pine Point Mining Limited (PPML) environmental assessment on May 4th and 5th, 2021. These sessions were held virtually.

Appendix A contains a full list of participants.

Appendix B reflects the cards written during the meeting using the Stormz software platform.

This report also contains links to both the Review Board and developer's presentations.

[Presentation links](#)

The Review Board presentation to start Technical Scoping Meeting is here: [Review Board presentation.](#)

The Pine Point Mining presentation is here: [Pine Point Mining Limited presentation.](#)

List of Acronyms

CANNOR	Canadian Northern Economic Development Agency
CARD	Contaminants and Remediation Department
CIRNAC	Crown-Indigenous Relations and Northern Affairs
DFO	Fisheries and Oceans Canada
DKFN	Deninu K'ue First Nation
DAR	Developer's Assessment Report
EA	Environmental Assessment
ECE	Education, Culture and Employment
ECCC	Environment and Climate Change Canada
ENR	Environment and Natural Resources
FRMG	Fort Resolution Métis Government
GNWT	Government of the Northwest Territories
HC	Health Canada
HSS	Health and Social Services
ITI	Industry, Tourism, and Investment
KFN	K'atl'odeeche First Nation
KLOI	Key Line of Inquiry
MACA	Municipal and Community Affairs
MVLWB	Mackenzie Valley Land and Water Board
NRCan	Natural Resources Canada
NPMO	Northern Project Management Office
PC	Parks Canada
PPML	Pine Point Mining Limited
ToR	Terms of Reference
TC	Transport Canada

Day 1 Morning: Focus on scope of assessment, scope of development, surface water and groundwater quantity and quality, and fish and fish habitat

Q&A

The following is a summary of questions asked by meeting participants with responses by Pine Point Mining Limited and their consulting team except where questions are answered by Review Board staff as noted.

Q (PPML) Can the Review Board please describe the context in which we should understand the EA Initiation package that PPML submitted¹, and how that information fits into today's process?

A (Review Board)- The EA initiation package will hopefully form a basis for the conversation that we need to have to structure the Terms of Reference through scoping activities. It should help to focus the

¹ PPML's EA Initiation Package can be found on the Review Board's public registry [here](#), PR #s 2-16.

discussion on what issues we need to target, since people will have more information to base their assessments about what really matters for this assessment. All this information will help the Review Board to make its decisions about what goes in the draft Terms of Reference and ultimately, the Terms of Reference which lays out the required contents of the Developer's Assessment Report.

Q (ECCC)- My question is about deposition of tailings into mined-out pits. How will groundwater exposure to tailings be managed, and how will the mobilization of contaminants into groundwater, and subsequently into surface waters, be managed?

A (PPML)- The water in the tailings will be the same water that the groundwater has been exposed to. We will work out the details in the future, but we would consider geochemistry results of the deposited material and the groundwater modelling results to determine the extent and significance of that pathway in the assessment.

Q (ECCC)- -Has there been work done to understand the linkages between the surface and groundwater environments?

A (PPML)- This is part of the assessment. There is a long-standing amount of work to understand the groundwater environment in the project area and this assessment will build upon and better inform our understanding of the interactions between surface and groundwater environments.

Q (ECCC)- Will there be specific studies with tracers or other means prior to putting tailings in the pit.

A (PPML)- Good suggestion; we'll consider that as we move forward with our assessment plan.

Q (ECCC)- Re: quality of water going out of mine and into mined- out pits; will there be any treatment of it? Or an evaluation of the movement of groundwater into the pits, then out of the pits carrying more contaminants with it?

A (PPML)- We've been working on this issue with GNWT, particularly focused on what sort of compatibility thresholds would be required for pit transfers or injection well transfers and we'll use this information as we move forward with assessment. We want to better understand how water quality changes over the study area and this will help us make decisions about those transfers

Q (ECCC)- Do you have information about how water quality changes with depth in the pits or below, and do you know what type of salinity concentrations you'll need to manage?

A (PPML)- We've done surveys to develop a baseline of this information but will look to build upon this over the study area. We're also still working through water management processes and this information will be used to refine these processes.

Q (CIRNAC CARD)- It looks like there will be overlap between federal land and some of the underground mines. What will this mean for the surface of those areas in terms of PPML access, drilling, etc.?

A (PPML)- Yes, there is some potential for overlap with the rail bed, particularly in the west. We have options here, including not accessing these resources from directly overhead. This level of planning has not yet occurred, but we'll refine the plans as we move forwards. We do also acknowledge that some

exploration and old roads would cross the rail bed and we're working with reps from ECCC to manage impacts on caribou and to start the process of obtaining a permit to do work in that area.

Q (DKFN)- PPML mentioned trucking concentrate from the mine site to Hay River and we'd like to get a better understanding about traffic requirements (volume, types, materials, construction vs operation phases, etc).

A (PPML)- This information will all be fully developed in the DAR. We'd have standard fleet and vehicles for a mine site (cranes, cement mixers, etc). We'd work with GNWT Highways to make sure that roads are maintained properly and can accommodate the requirements of our fleet.

Q (DKFN)- This might be captured under social and economic conditions, but I look forward to more information on this topic in the DAR

A (Review Board)- We've set aside some time to talk about socio-economics tomorrow but are interested in hearing about connections between various parts of the environment, and connections between some of the issues you've raised and other parts of the environment specifically.

Q (GNWT-ENR)- Can you please confirm that the pits used for tailings disposal would be dewatered?

A (PPML)- Yes, likely the pits would be dewatered since we'd use this water in the process plant. We likely wouldn't drill wells around the pits, we'd simply pump out as much water as we could prior to tailings disposal. We'd also have a dewatering station in the pit to remove water throughout the process.

Q (GNWT-ENR)- Will information that is being obtained from the Type A process built into the schedule?

A (PPML)- Yes, ideally the Confirmation Exploration Program will inform what goes in the DAR.

Q (GNWT-ENR)- Project description mentions lagoons and some ponds that would need to be rehabilitated. Can you speak to where these are and what rehabilitation would require?

A (PPML)- You might be referencing two man-made lagoons north of the town site of pine point. We could use these lagoons as part of the concentrate circulation network.

Q (ECCC)- Will you provide more information on the grout process for underground, and possible contaminants to the groundwater from this grout?

A (PPML)- This will be further developed through feasibility. The grout will be cement, but we'll provide more information in the DAR.

Q (ECCC)- Would rejects be void of mineralized rock? If not, would this rock be managed differently than waste rock due to potential leaching of zinc or lead?

A (PPML)- There will almost certainly be some mineralization in the waste rock, but it will be very low (otherwise it would be streamed into the process plant). However, the rocks are largely dolomite or

limestone, and any mineralization would be very small, and this would be mostly mitigated by the presence of the limestone.

Q (ECCC)- We'd previously asked about the potential for fish in the ponds, and connection to channels in open pits as well as other Schedule 2 issues.

A (PPML)- Yes, we have discussed this before and have started early discussions with DFO and ECCC about the Schedule 2 requirement. We don't have any concrete results from the meeting but will place a summary of the meetings on the Review Board website.

Q (MVLWB)-Will PPML consider the remediation of Teck site (old tailings facility)?

A (PPML)- Teck is a key stakeholder for our project and the way we monitor and manage water will affect how Teck proceeds. They've got a fairly robust system for managing water already, since they've been doing it for 30 years, and this long-term requirement is one of the reasons why we're proposing a different tailings management system.

Q (DKFN)- Has PPML determined what constitutes as greenfield already?

A (PPML)- At this stage we've identified the mineral zones that would form the mining operation. In some cases these are in brownfield, but most of the new deposits are in greenfield. There may be old access trails from the Cominco operation that we would try and re-use but specific mine plans for each deposit will feed into the information that goes into the DAR.

Q (GNWT)- How does PPML define brownfield?

A (PPML)- Basically, any area that's been previously disturbed. A lot of these areas show very little revegetation, but some have and all those areas would be assessed in terms of their overall value and contribution to the habitat.

Q (Review Board)- Where will you use grout curtains?

A (PPML)- Mostly underground, which is mostly in the west; the western location is generally wetter, so would require more intensive groundwater management. This was also a recommendation from the Tamerlane EA.²

² [Tamerlane Pine Point Pilot Project EA0607-002](#)

Q (DKFN) – We discussed power use, the Taltson Dam and some generators. We assume mine will operate on total Taltson Power with a generator as backup. Can you please confirm? Especially given ongoing climate change concerns we'd like to encourage NOT using generators as much as possible.

A (PPML)- Taltson can't supply all of our power as is. They're working on plans for updating though, and we're working with NTPC on these plans and are hoping that they can provide us with what we need after their expansion. As alternatives, we're looking at compressed gas and lower carbon methods of generating power on site (like wind power) and high-capacity batteries for power storage. We agree with the need to reduce power consumption wherever we can.

Q (DKFN) – My question is about the Key Lines of Inquiry and Subject of Note. DKFN is just down the road from Pine Point and the area is very much of interest. We're trying to get a better understanding about what the difference is between KLOI and SOI; does it relate to significant public concern? If so, then DKFN cares about everything.

A (Review Board)- From the Review Board's perspective, some issues are important because they matter to people, and some issues are relevant to particular groups mandates. Often EAs will focus on a few (3-5) areas that really matter the most and are of the greatest concern to parties; these are the KLOIs. Other things that still matter and are important to assess, but not to the same degree, can be defined as subject of notes. A big part of scoping is to figure out which issues are KLOIs and which can be treated as SONs. The developer has proposed their view of how to treat the topics, but we want to hear from parties if they agree or not.

Q (DKFN)- The DKFN might have key areas of concern that might end up being treated as SONs and we want to make sure that these issues are still treated with care and we want to understand the process about why some issues are KLOIs and some are SONs.

A (Review Board)- One of the reasons why we do scoping is so that we can make sure that our treatment of the issues is informed by the views of communities; you can help give us this information here, or using our other platforms like the ORS and review of the draft terms of reference. We can also adapt our process throughout the EA if some issues end up becoming more important later on.

A (PPML) - SONs will still be assessed thoroughly and comprehensively, but just not to the same level as KLOIs.

Q (FRMG) – Does social and economic conditions include aspects of community health and well-being?

Q (PPML) Yes and we'll discuss this more tomorrow afternoon.

Q (FRMG) – Cumulative effects are a real and important concern. We want to ensure that cumulative effects assessment will include climate change and reasonably foreseeable developments.

A (PPML)- Cumulative effects will be included within the consideration for each valued component as appropriate. This will include climate change, fire, etc. and not just other projects.

Q (FRMG) - For cumulative effects of KLOIs, temporal scope of assessment seems very limited. If there's enough community concern, would you consider including a pre-development case in addition to the base case?

A (PPML)- This is something we'd consider.

Q (GNWT)- Can you describe the relationship between KLOI water quality, SON for Groundwater quantity and quality and surface water quantity, fish and fish habitat.

A (PPML)- This will be discussed further; we've heard that water quality is a really important issue to communities. The SONs would look in detail at the components of water quality and would feed into the assessment of water quality. Everything in the DAR takes into consideration other aspects of the DAR, as appropriate. We can describe these relationships in more detail in further discussions.

Q (DKFN) – I raised this comment earlier but want to mention again that you can think of things differently (for example, traditional land and resource use takes into account almost all of the other KLOIs and SONS). Traditional Land and Resource Use also has to consider historic and present uses.

A (Review Board) – We definitely have an eye towards more integrated environmental assessment that would look at “umbrella” lenses in addition to the pathways/KLOI approach, including looking at community well-being, and the importance of conservation to the way of life and well-being of Indigenous People. The Review Board will be looking to this and other important ways of understanding impacts as we develop the TOR.

Q (FRMG) – Why aren't Little Buffalo River, Sandy Creek Birch Creek or Paulette Bay considered as valued components? Little Buffalo River is within the watershed, so I think it should be included.

A (PPML)- Valued components for fish assessment included streams and Great Slake Lake within the local study area. Little buffalo river is outside the local study area so its not included as this point in time. Paulette Bay is included though. We'll consider expanding to Little Buffalo River.

Q (DFO) – Lots of the modeling and assessment work done is based on what's there currently, including the Brook Stickleback, which is notorious for getting into places you wouldn't expect them to be. DFO suggests that we need to also look at ways to AVOID having fish (specifically the stickleback) getting into mine workings or mine areas through proper design of water management plans.

A (PPML) – Thanks for the feedback, we'll look into this and appreciate communication with DFO on this matter.

Q (FRMG) - How will Indigenous Knowledge be incorporated into aquatic effects assessment or other studies?

A (PPML) – If possible, we'd defer the response to tomorrow when Jesse O'Brien is here.

Q FRMG – Does current and traditional land use include fish and fish habitat as an assessment endpoint?

A (PPML) – Interconnectedness is certainly a big priority for us, but again this discussion should wait until Jesse is here.

Q (FRMG)- Will you be looking at the different habitat uses for different species' life cycle phases to understand habitat loss and offset requirements?

A (PPML) - Yes. Should be noted though that we're not the same as a big diamond mine or something that has large loss of habitat associated with it we're more looking at road crossings and other small habitat losses.

Q (FRMG) - Thanks for the clarity. Want to point out that small losses can accumulate, and this might be important.

Q (GNWT) – What characteristics of a pit make it a good candidate for tailings deposition?

A (PPML)- Most of the pits are relatively shallow and depth would factor into this consideration. We'd also take into account groundwater quality, material to be deposited, potential for solute transport and interaction with local groundwater and surface water environment. The idea of putting tailings in the pits is still conceptual at this early stage, so we'll work out what pits will be good candidates or not (for either waste rock or tailings or some combination of the two).

Q (GNWT)- Can you describe further how you'll evaluate the situation at this large site with UG mining operations, surface structures, different sources of chemical loading to surface and groundwater, etc? How will you break this complicated site down into a manageable method for evaluating effects?

A (PPML)- We're providing the initial concept, which includes the development of a well integrated modelling framework that considers all of these many input pathways. A site water balance, site water quality model, groundwater movement, will all be included. To move forward from this initial concept, we need more detail from the water management plan, and then a series of iterations to go from a conceptual to a working model. This will all feed into the water management plan for the project that will make sure the water around the project area is protected. You're right that this is a big footprint, but the processes and modelling we're working with are consistent with other areas and operations.

Q (GNWT)- You mentioned use of modelling tools like ModFlow. Will detailed chemical transport modelling be completed to understand groundwater/surface water interactions? Or will that assessment be done with more predictive models?

A (PPML)- Both methods have merit and we're still in the early stages of determining which will be most appropriate for the EA. As we become more informed about the water management plan and other things, we'll be able to make a better decision about methods.

Facilitated Discussion

This part of the discussion was guided by the following questions:

- Do you agree with PPML’s proposed most important issues to focus on in the scope of assessment? If not, what would you propose?
 - Do you agree with PPML’s proposed geographic and temporal scope of assessment for each valued component? If not, what would you propose?
 - Do you agree with PPML’s proposed methodology for assessing impacts on valued components? If not, what do you propose?
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DKFN- Cumulative effects are a big issue that need to be addressed, about water quality or fish and many other valued components. Its unclear how cumulative effects will be addressed, but its important that they’re looked at carefully.

Review Board response – PPML has said earlier that they plan on looking at cumulative effects within the assessment of valued components. If you have issues, including temporal scope, that you want to have particular focus please let us know.

DKFN- This is a good point; at times cumulative effects won’t be experienced for many years and so we need to have a long-range view of synergistic impacts.

Review Board- Can you please say what you mean by synergistic impacts?

DKFN- That’s the challenge; Let me get back to you.

Transport Canada – If the Hay River or Buffalo Bridges need work, will this be scoped as part of the project or as separate projects?

Review Board- The Board has not thought about this in detail, but we will consider the question as part of scope of development.

Transport Canada – Table 1.8 has comments from different Indigenous groups about water being used from Great Slave Lake for processing and other things. Were concerns about Great Slave Source water captured in this morning’s conversation? How will they be dealt with in the assessment?

Review Board- We’ll make sure that concerns are captured related to water use are captured and looked at in the draft Terms of Reference.

GNWT- How will the federal rail bed be used? How will it be considered in the scope of development?

PPML- PPML is not planning on doing any work on the railbed. The only foreseeable interaction is where we have to cross it to do work somewhere else. The might be some interaction in the far west, based on the need to build underground access but this is to be determined.

FRMG- It’s super important to understand the context of impacts (how resilient or vulnerable a receptor is) when thinking about significance. This links with my earlier comment about cumulative effects.

FRMG- We wanted to raise early that culture itself should be considered a KLOI.

DKFN- I have a question about water use in Great Slake Lake and water use, specifically in Resolution Bay and in relation to cumulative effects of all other water users and in relation to the water source in the Peace and Athabasca rivers. We've experienced abnormally high water this year; but want to make sure that water levels, drinking water and water for cultural pursuits in the Slave and Delta in the future are protected.

Second concern is the use of the old pits. People of Deninu Kue have always had a problem with the way these pits were left in the past, and we want to make sure that our concerns are addressed as we plan for the future, including reclaiming the pits to a point the community is comfortable with.

Third concern is about greenfield vs brownfield classification. With respect to greenfield locations, we want to make sure that as much of the site is restored to its natural state as much as possible. We want to have more discussion about the brownfield sites to see if they can be reclaimed to a higher level than just "return it to the way we found it".

Fourth concern is Little Buffalo River; it should be included in the assessment (as we discussed earlier).

KFN- We have lots of concerns including hauling materials, water quality and quantity, Big Buffalo River, socioeconomic concerns, cultural impacts, off-highway routes and many others. We look forward to focused, and preferably, in person meetings to try and have this conversation.

Health Canada- We're interested to see if there's any changes to drinking water or water that is used for recreation or cultural purposes and how those potential current or future changes measure up against the strictest guidelines for human use. We also have a lot of environmental assessment guidance, about drinking water and recreational water quality and are happy to provide this information.

FRMG- Curious to know if transport vehicles will be operating at full capacity and how PPML will adapt to changing road weight limits during the course of the year (i.e. lower weight capacity during the spring). This information should be included and considered in the environmental assessment.

We need more clarification about waste disposal and how the pits will be used (for waste rock, tailings, water containment), etc. Please include a map that illustrates all this information and also show us how you decided what pits will be used for what (groundwater, geochemistry, etc).

MVLWB- Where will impacts to ground and surface water be assessed? Where is downstream? Are we monitoring in the pits? Or where the water comes out?

PPML- One of the key concepts here is that we don't propose discharge of any water outside of the disturbed areas (i.e. the pits or re-injected underground). We propose a SON dealing with groundwater quantity and quality and a SON for surface water quality and quantity; these topics would more specifically address those parts of the assessment, but they both would feed in to the KLOI of water

quality and quantity where we'd look at linkages between those two environments. Other SONs (like fish and fish habitat, for example) would also take this information and use it for effects assessment.

DKFN- We're concerned about the potential impacts of groundwater (and surface water) reaching Great Slave Lake.

How will workers be transported to the site (bussed in or using private vehicles?)

How will the mine traffic affect the residents of Hay River, or other areas?

We want to make sure that people going to work in the mine only work; no fishing, no hunting, no recreational use or anything without discussing first with the community.

GNWT ITI- Very early on, PPML understood that they'd have to address and minimize impacts on the rail bed. PPML also raised the idea of working together to help remediate the rail bed and we encourage this idea and encourage other participants to think about this idea more.

ENR- With water quality being a KLOI, do I understand correctly that this would feed into other valued components? And that significance determinations would be linked only to Great Slave Lake, Paulette Creek and other valued components?

Review Board- The Review Board makes its own significance determinations and is open to a variety of perspectives on this issue.

PPML- From our perspective yes. We'd be looking at the significance of changes in water quality as it relates to fish species in those areas, and traditional land use and well-being valued components. One of the reasons why we don't want to assess significance for water quality itself is because changes to water quality only matter in terms of how it relates to a receptor (like aquatic life, or how people use the water).

DFO- Lots of people have raised concerns about water connectivity. We note that this is important, and there's lots of ways to assess this and should include an assessment of changes to drainage pattern given operations.

Hamlet of Fort Resolution- East of the Project site is very swampy. The headwaters of Hanbury Creek is in this location, and it drains into Little buffalo river. This area was used traditionally, including for trapping. Back in the 60s, mining operations led to flooding which affected the traplines and caused people to stop using the area. Little Buffalo is a source of many fish species, including many that people eat and the water quality deteriorated with past mining operations. We think Little Buffalo River needs to be included in the assessment.

Question about some pits close to the mine (N204), which is in the green zone. Its also very close to water; only a few miles from Paulette Bay, which is important fish habitat and important for traditional use.

We're concerned about the cumulative effects, which are ongoing from previous developments. We're still living with the effects in all parts of life, and this project would be more impacts for us to live through.

Need to have more baseline information about water quality in Great Slave Lake to better measure changes from the mine over time. We will submit documentation about water quality parameters to the record.

We have additional concerns about the highway, specifically N204 from the old Cominco property. This pit sits right on the corner by Dawson Landing and Hwy 6 will need to be re-routed to accommodate open pit mining at this location. This needs to be looked at carefully by the developer and with the Power Corp and Department of Transportation.

FRMG- Need to think about if PPML will consider published thresholds, or if they'll actively engage people and Indigenous Communities on their thresholds.

Need more clarification and certainty about potential for prolonging the life of mine; I understand they're looking at a 10-yr production window, but given the current and planned exploration activities, this might be longer.

I'm concerned about the remediation of the railbed. We're not in favour of the idea of spreading contaminants around and don't want to combine projects unnecessarily. We need more information about these plans and all aspects of the project.

Question for the Review Board: What type of a dispute resolution process is in place in case we disagree with the Review Board's decision?

Review Board - Minister goes through consultation process after we issue decisions, so usually these issues are resolved before, or by then. Review Board will follow up offline.

GNWT- Will social and cultural effects will be part of the cumulative effects assessment?

PPML- We can answer this question better tomorrow, but we can say that cumulative effects will be considered in the social and human environment aspects of the assessment.

Day 1 Afternoon: Focus on wildlife and habitat, air quality, noise and climate, terrain and soils, vegetation

Q&A and facilitated discussion summary.

The following is a summary of questions asked by meeting participants with responses by Pine Point Mining Limited and their consulting team except where questions are answered by Review Board staff as noted.

Q (GNWT)- Please clarify plans for waste rock storage.

A (PPML)- There will be some waste rock piles on surface. We'll try and use pit and underground storage as much as possible, but there will be some waste rock piles left on surface at the end of mining.

ECCC- Suggest that PPML should consider the CAAQS (Canadian Ambient Air Quality Standards), which might be stricter than NWT standards.

PPML- Noted.

NRCAN- Will you do a permafrost or ground temperature assessment for baseline, at least around the pits?

PPML- There has been some data about this published already, a very little bit of permafrost was found. PPML has been drilling holes there for at least three years and we haven't found much and this has been documented in the existing sections as highly dispersed, sporadic and infrequent.

DKFN- suggest that we need to think about use of the entire NT1 range about looking at local effects of caribou and ability to harvest. GNWT is also doing their range plan, and in this plan they're looking at discrete subregions and this scale might be a bit more appropriate for determining significance.

GNWT- GNWT has similar questions, and believes that multiple scales [local, LSA, NT1 range, Southern NWT Planning region, RSA (that we think is relevant but could be expanded to include a range around the Pine Point animals)] of assessment are appropriate.

PPML- We look forward to talking more with ENR about this topic. We understand that we need to think carefully about the RSA to make sure its ecologically relevant.

Review Board- Look at the Tlicho All Season Road report³ for an example of how the Review Board has in the past considered potential impacts on caribou across different spatial scales.

ECCC- Digaa Enterprises area was not included in the foreseeable future development map, so want to flag that in the RFDs.

³ Available on the Review Board's public registry [here](#).

ECCC includes whooping crane as a priority wildlife VEC and note that Initiation Package classifies whooping crane as threatened but it is actually classified as endangered.

Some species besides caribou, like whooping crane require more detailed and specific regional Study Area and Local Study Area. We propose looking at habitat suitability models in Olsen and Olsen 2003 and look forward to more discussion with the developer, and possible Parks Canada, about this.

Different songbirds have different habitat uses and behaviours and should be considered distinctly. Some birds (bank swallows) also inhabit structures and mitigations need to be designed specifically for this.

PPML- We look forward to talking about this stuff more with you.

ECCC- Question about ecological risk assessment for birds using the pits and coming into contact with pit water. Will this issue be included in the EA? We can submit written comments on this issue.

Review Board- We would appreciate feedback about how this type of assessment should be included.

GNWT- How will you consider air quality standards in the CALPUFF model?

PPML- We typically use standards from other jurisdictions.

GNWT- How will air quality be monitored? Also haven't heard about an air quality management plan to track spatial and temporal trends in air quality over time.

PPML- We recognize that an air quality management plan will likely be required, but haven't identified when such a plan would be required throughout the EA and regulatory processes. Happy to have feedback from interested parties about when this information should be required and will consider this moving forward.

Parks Canada - We have questions about whooping cranes; what's the difference between a comprehensive assessment under KLOIs vs SON? Whooping cranes and impacts on this species should be identified as a high priority, especially because of their importance to Wood Buffalo Park and given the potential for impacts to this species from the development.

We'd also like to see Wood Buffalo Park included in the regional study area or some boundary for whooping cranes to make sure that project activities aren't going to jeopardize the ability of the whooping crane to recover and expand its habitat in the region.

PPML- We included whooping crane as a valued component based on feedback from Parks Canada.

Review Board- The Review Board has obligations under s79 of the *Species at Risk Act*; based on these obligations we typically treat impacts on species at risk differently and more carefully.

GNWT- We don't think its necessary to assess wood bison in this area since they don't typically use the area. We do think that it's a good idea to consider moose, though, since they use the area and it is

culturally appropriate. Also can omit northern leopard frog since there's no overlap with their habitat and the project area.

Its unclear how PPML would assess human access as a pathway and ENR would like to see changes in human access and harvest assessed as a primary pathway for boreal caribou and potentially moose as well.

There was a comment about doing a habitat suitability model for caribou. ENR has a Resource Selection Framework model and collar data that we can share to assist with this.

Want to work with PPML to make sure that we're using same spatial scale for disturbance estimates.

Foreseeable future developments: will you do an assessment for boreal caribou at the NT1 range? Should also consider Digaa and Mackenzie Valley Hwy, Canzinc, smaller scale operation at Jean-Marie River and possibly others, which we'd be happy to discuss with you.

PPML- we will do a reasonably foreseeable future development assessment for caribou. We want to have the conversation with ENR about having different scales of assessment for caribou (spatial and temporal).

FRMG- We are looking for clarification on if ecosystems and ecosites that are supportive of traditional plants will be assessed.

PPML- Yes, this is exactly what we plan and would consider both traditionally used plants and sensitive plants at those sites.

FRMG- When thinking about assessment endpoints for harvesting both plants and animals, you need to look at both populations and sub-populations (including preferred species and preferred locations).

DFKN- Looking for clarification on if and where furbearing animals will be included in the assessment, particularly how this relates to trapping by local users.

PPML- We've included wolverine and wolf; what other species are you thinking of? Will consider adding when we get more information from the communities.

DFKN- common trapping species; lynx, marten, hare, whatever else the community requires.

GNWT Climate Change- The Developer's Assessment Proposal says it will use strategic assessment on climate change to determine how project will contribute to greenhouse gases. How will emissions reporting be broken down? (year to year, phase to phase, something else?)

PPML- We can't answer that today but will provide the answer tomorrow.

Day 2 Afternoon: Focus on heritage resources, traditional land and resource use, social and economic conditions, non-traditional land and resource use, well-being

Q&A and facilitated discussion summary.

The following is a summary of questions asked by meeting participants with responses by Pine Point Mining Limited and their consulting team except where questions are answered by Review Board staff as noted.

DKFN- Traditional land and resource use assessment will consider the results from the wildlife assessment; how will furbearers be assessed in the wildlife assessment and how will these two issues be connected? We also haven't yet seen a consideration of treaty rights.

PPML- Thanks for the comment about furbearers; we'll look into this as we move forward.

Review Board- a lot of the remediation comments we heard yesterday focused on construction and operation and the rail bed, but we don't want to miss the idea that actual remediation of the project is important.

GNWT- wellbeing is really important to the communities and the GNWT. KLOIs get the most attention so HSS suggest health and community well-being as a KLOI rather than an SON. This reflects the importance and complicated and interconnected nature of the issue.

PPML- we agree with the importance of well-being. Where that discussion actually takes place is up for discussion but we do understand the holistic nature of well-being and the need to draw on many different aspects of the assessment.

GNWT- Has the developer considered calls to action 151 and 154 from the Truth and Reconciliation Commission, which calls upon developers (and regulators) to recognize the increased demands on social and health infrastructure and differential effects of development for women, girls, LGBTQ2S+.

PPML- increased pressure on infrastructure and services is definitely part of the scope of the assessment. Re: 154, we are planning on applying GBA+ analysis that considers women, girls, LGBTQ2S+ subgroups to impact assessment and planning. We will talk about potential safety implications for these subgroups.

HC- Will there be a quantitative human health risk assessment done for this project? For example, looking at contamination of country foods, etc.

PPML- At this stage, we've got a section for looking at community health and well-being; this is focused on qualitative issues and don't yet have a proposal to do a quantitative assessment but we could if required and based on feedback from communities and government agencies.

Review Board- We have not had a quantitative human health risk assessment as a standard aspect of project assessment; Giant required one as an output of the EA but each case is unique.

DKFN- We echo the importance of making sure that women and all people are protected and agree with the previous recommendations about women.

All Canadians, not just the government and Indigenous people, are part of treaty and have a role to play in this special relationship. Our treaty is not only about rights, its about duties and obligations and this is important. DKFN has a treaty with the Government of Canada and we also have an intimate relationship with all our relations, and this is a key part of our unique worldview. This unique worldview needs to be understood and respected by our treaty partners even as we ourselves work towards being good treaty partners. For example, we have our own system to understand if our environment is good and healthy that has been developed over thousands of years and passed on through generations. This system gives us our own criteria and expertise that should be understood by governments and developers.

In this project location we have two treaty signatories. This is important and is part of our history.

Whenever you combine the concepts of social and economic, we find that often economics gets the priority and social considerations get less attention. In our experience, this should be reversed. We also have a cultural conflict, where we are different from Canadians in general, but we are also different from “mining culture”. This is hard for our people to adjust to; many struggle and don’t stay on in their jobs and we need to support people so that they can stay employed and benefit. We also have to help people who get jobs avoid some of the problems associated with the job (getting lots of money for a short period of time, maintaining mortgages and debts after employment ends, adjusting to home and family life after their shifts end, etc).

With respect to heritage resources, we have to be considerate of the involvement of the people of Fort Resolution who have and use the cultural resources in the area. We have to make sure that work stops, local experts are brought in to address the issue, etc. Our treaty requires this.

We’ve been involved with the Northern Contaminants Program for a long time. Currently, traditional foods are healthy and healthier than any other food around. We want to make sure that this stays true and that we promote the consumption of traditional foods as much as possible.

PPML- Some of the issues here are beyond the scope of EA, but we understand and recognize the importance of everything you just brought up and will make sure to address them as best we can in our assessment.

FRMG- We expect to meet with PPML to explore some of these issues together in depth. We agree that Health and Well-being should be a KLOI on its own.

We have concerns about the aggregation of health info for assessment of different Indigenous groups; these groups have important differences and these differences should be considered. Also need to make sure that non-Indigenous groups and communities are not aggregated in with Indigenous groups.

Want to avoid problems where biophysical assessments stand in as a proxy for social impacts (for example, impacts on fish are not the same as impacts on fishing).

Need to identify mitigations that work specific for valued components and community contexts for social impacts.

How will biophysical studies feed into Traditional Land and Resource Use assessment? How will Indigenous Traditional Knowledge feed into biophysical assessments? There are challenges here, but also opportunities to do so (for example, having western science and Indigenous Traditional Knowledge holders do baseline studies together).

Reaffirm importance of looking at cumulative effects for the human environment, including the quantification of land loss; sometimes we focus too much on absolute impacts and need to also consider relative or perceived impacts as well (for example, 1% loss of land, but this 1% might represent a key migration corridor or hunting area and so effect is disproportionate).

Include culture (cultural landscapes and cultural continuity, beyond bones and stones) as a KLOI, or at least as a discrete valued ecosystem component.

PPML needs to collaborate with communities to collect quantitative socio-economic data that may not be on the public record.

PPML- Looking at information on the public record is only one source of our information for our assessment and we plan on working with communities to get other sources of information that we need.

Re: incorporating Indigenous Traditional Knowledge into the assessment, we recognize the importance of doing this and want to speak with communities about the best way to do this, and the type of information communities want to see presented in the EA. We also hope to collaboratively develop a framework for integrating Indigenous Traditional Knowledge into the process and in consideration of community-specific protocols.

Re: cumulative effects, we need to consider the current state and will take that baseline and will include it as the baseline for the cumulative effects study. We need to look at the RFD case and build this onto the baseline.

We recognize the need to focus on health and well-being, and also culture specifically. What we put forward in the EA Initiation package is up for discussion and look forward to see how things look in the final ToR that the Review Board produces.

GNWT- ECE- We've received the Archaeological Impact Assessment report but want to note that the archaeologist determined that there are areas of archeological potential within areas currently designated as brownfield.

Want to make sure that the scope of the archaeological work is in line with the scope of development, including as the footprint of the project expands or changes over time.

PPML- We understand that as project expands, so too must the archaeological assessment.

GNWT HSS- In baseline health information provided, methodology didn't distinguish between small local communities and NWT overall, as well as Indigenous vs non-Indigenous and this needs to be rectified in order to address equity issues.

PPML- Can you clarify if you're referring to baseline info presented in EA Initiation package?

GNWT HSS – Yes, as you proceed into the DAR you should consider other more useful approaches.

PPML- Yes, this information is intended to be a high-level overview and we intend to refine the analysis and disaggregate the information more in the DAR.

GNWT HSS- Will PPML describe local contexts and qualitative ITK related to health and well-being be included in the DAR? Will you also look at local strengths and resilience?

PPML- Yes. Any information we receive to well-being will be considered in historic context and holistically. We will also look to local strengths and opportunities (e.g. local initiatives to address problems around substance abuse) to minimize and mitigate impacts.

GNWT MACA- MACA wants to understand how developments close to communities will impact those communities and has a mandate to support communities and community governments. We hope that in-person community scoping sessions can be rescheduled so that community views are incorporated into the EA. MACA has funding available to communities and has both contractual and legislated relationships to support communities.

Question re: accessing community infrastructure and services (roads, water, sewage, etc). PPML site will have some of its own facilities (for potable water, septic systems, solid waste disposal, etc). but if the facilities of nearby communities will be used, will PPML develop MOU or fee for service arrangement?

PPML- Any time we use community services, we'll approach the appropriate community department about this, and this might include fee for service or other agreement.

GNWT MACA- Will PPML be ensuring that territorial requirements for submitting a SOW associated with the project are provided to the fire marshal?

PPML- Yes. We will ensure that we meet all required guidelines, standards, etc.

GNWT MACA – MACA supports communities to develop fire and paramedic services (MACA does not provide these services itself) including to expand services beyond community boundaries. Will PPML establish on site emergency response teams, similar to other developments in the territory? Has PPML engaged community governments to establish MOUs or other to provide these services?

PPML- We will prepare an emergency response plan and team to handle emergencies and accidents.

GNWT MACA – Will response services focus on site? Or expand beyond?

PPML- Largely focused on site, but may expand as required, given (for example) the fact that we'll be transporting people and materials along the public highway.

GNWT MACA- EMO is the lead authority for emergency preparedness and management programs, including supporting communities. Has PPML developed an emergency response plan for large scale emergencies, and has PPML established agreements with communities to assist (for example, in providing services, or hosting evacuees)?

PPML- Since we still have a small camp, we haven't yet done this but prior to construction we'd develop these response plans and work with communities in doing so.

GNWT MACA – We encourage regular engagement with local community governments. Want to flag issues related to community governments being unable to retain staff who leave community government for higher paying mine jobs.

PPML- We'll consider this in the employment analysis in the DAR (competition for labour) and assess it at a higher level than at the community level. Community-specific effects can be addressed through direct engagement as the project moves forward beyond the EA.

Review Board- we do plan on going directly to the communities to have scoping and other meetings and will work with them to determine if these meetings will be virtual or in person.

ECCC- it seems that SONs are not as important as KLOIs; who decides the level of assessment? Maybe instead of SONs you could call things "related issues".

Review Board- we're always looking to improve our language and make things clearer. The Review Board determines the depth of assessment for every valued component. We describe this in our Terms of Reference which use the views of parties to make determine levels of assessment.

PPML- we develop our proposed KLOIs and SONs based on engagement with communities and what we think regulators will care about. We recognize that SONs require a thorough assessment and use a lot of this information in our assessment of KLOIs. See table 4-19 (Developer's Assessment Proposal) for our thought process and methodology about this. We also have a proposed document structure that may help people understand how we proposed to package all of this information.

GNWT ITI – Trans-shipment facility where ore concentrate will move to rail. This will happen in Hay River, and regulations for this facility will be multi-jurisdictional. We recommend that this facility and associated activities should be identified and discussed.

PPML- EA Initiation package documents discusses the environmental aspects of traffic. We'd have an offline discussion with Infrastructure about other activities after the EA.

GNWT ITI- It has to be discussed at some point. We know that the road has some limitations at certain times of the year, but the rail system also has some similar limitations.

PPML- Yes, we understand the importance of the issue. From an EA perspective, we consider traffic in some ways, but we consider permitting differently and we'll have those conversations at the appropriate time.

Review Board- PPML can refer to NorZinc Prairie Creek All-season Road EA⁴ on transfer facility considerations, accidents and malfunctions and other related issues.

FRMG- Why hasn't the Archaeological Impact Assessment been included in the EA Initiation package? This is relevant to the primary pathway of impact for heritage resources. This is important for burial sites, old cabins, etc. which are located within the footprint of the mine.

PPML- EA Initiation package doesn't present all of the information that was submitted to the Prince of Wales, but it does partially address your comment. See section 2.2.1.2 and Table 12 (Identification of Potential Project Interactions and Proposed Mitigation Measures) for our information and considerations that went into the determination of these impact pathways being secondary rather than primary.

FRMG- Thresholds are especially important in qualitative data; determinations of significance really need to include thresholds from Indigenous groups. Will PPML only use publish thresholds, or will you engage with communities to develop community-defined thresholds? Want to make sure that ITK is not relegated solely to baseline datasets and is also included in the end stage of assessments.

PPML- When we conduct the SEA and TLU assessment for primary pathways, we do consider input that we've received through engagement and ITK studies. Level of concern from communities or local stakeholders will go into this thought process. See section 4.2.2 (Developer's Assessment Proposal) for our methods for the human environment assessment including how we use ITK and our process of determining significance.

Review Board- One of the outcomes of recent EAs from the diamond mines is that we've required the development of community-based indicators for well-being and other social and economic considerations. This approach might inform PPML as it proceeds. The Review Board does not always accept what it hears from developers and requires evidence from all parties to make significance determinations.

DKFN- Akaitcho territory is Treaty 8 territory and we want to make sure that people understand the history of the land where this project is taking place. Project area is not just for hunting or trapping or a place where we get traditional resources. Its one of the places in our vast territory that gives us purpose and place and these things matter. For us, the land and this place gives us a sense of home and belonging, and ultimately this gives us value. A lot of the things we talk about, especially as it relates to well-being, really hinge on this important idea. The relations between living and non-living things matter and these relations give us purpose. When development is done, the land should be restored as much as possible to its prior state so that we can try and retain those relationships and that value.

PPML- Thank you for those comments; its important insight for us to understand how DKFN belongs in and to the land and we will do our best to honour those concerns.

⁴ The Report of Environmental Assessment for the Prairie Creek All-season Road EA can be found [here](#).

Review Board- Follow up on question from yesterday about how ITK will be incorporated into aquatic effects studies and if the Traditional Land Use assessment includes fish and fish habitat as an assessment endpoint.

PPML- Fish and fish habitat is not an assessment endpoint within the Traditional Land Use section. However, the ability to participate in traditional fishing, and the availability and access for the resource, and what these changes mean for people are considered in the Traditional Land Use section

FRMG- clarify that what wanted to know if Traditional Land Use would be included as an assessment endpoint in fish and fish habitat assessment.

PPML- in fish and fish habitat section, endpoints are ongoing fisheries productivity and self-sufficient populations. Those results, and results from other sections like water quality, then feed into the TLRU assessment, which includes more of a holistic approach of thinking about how fish are affected by the project and then what this means for the ability of people to harvest fish.

Review Board- check about yesterday's question re: greenhouse gas reporting and management plan.

PPML- Greenhouse gas emissions would be estimated per year of the project. PPML plans on developing an Air Quality Monitoring and Management Plan (AQMMP) during permitting and would be revised during construction and operations as a living document. We can provide a conceptual version of the AQMMP with the DAR if reviewers would find this helpful.

FRMG- Think that the AQMMP should also include emissions; need to think about all of the equipment (haul trucks, water pumps) etc that you'll use for the life of the project.

PPML- Agree.

FRMG- PPML has decided to meet with community leaders, but they should also meet with the community. Lots of community members are interested in being a part of engagement for this project so PPML should be open to this engagement and reach out to people more so that people understand the project, and how it will affect them.

FRMG- Little Buffalo River was excluded from the zone of influence of the project. We strongly recommend that little Buffalo River is included in the assessment.

PPML- All project emissions (trucks, buildings, etc.) will be considered in emissions assessments. PPML will discuss offline with FMRG to try and set up a community meeting.

Review Board- Review Board is also committed to holding community scoping meetings as soon as possible.

FRMG- PPML must work with knowledge holders to identify land-based receptor locations for air, viewpoints, noise and other aesthetic considerations for changes to the landscape.

PPML- Yes.

Appendix A- Participants List

Day 1

Pine Point Mining and Golder Associates- Andrew Williams, Kristine Mason, Damian Panayi, Leah James, Jesse O'Brien, John Virgl, Jeff Hussey, John Faithful

Mackenzie Valley Environmental Impact Review Board - Chuck Hubert, Catherine Fairbairn, Jeremy Freeman, Catherine Janz, Kate Mansfield, Mark Cliffe-Phillips, Alan Ehrlich, Stacey Menzies, Chris Rose

GNWT- Jeremy Armitage (HSS), Morgan Moffitt (HSS), Bryana Matthews (ENR), Jane Fitzgerald (ENR), Dinah Elliot (ITI), Horatio Sam-Aggrey (Lands), Laurie McGregor (ENR), Dave Abernathy (ENR), Jamie Van Gulck (ARKTIS for GNWT), Tracey Covey (Lands), Marie-Christine Belair (Lands), Lorraine Seale (Lands), Lee Ann Malley (ENR), Wendy Bidwell (ENR), Drew Stavinga (ARKTIS for GNWT), Mike Byrne (ITI), Mark Paddey (ITI), Ashley Janes (ITI), Bill Pain (ENR), Melissa Pink (Lands), Chris Hewitt (MACA), Dianna Beck (ITI), Laurie Fife (MACA), Brenda McDonald (ITI), Alicia Kelly (ENR), Andrea Patenaude (ENR), Imran Maqsood (ENR), Krista Chin (Climate Change and Air Quality) Charlene Squibb (ITI), Joe Acorn (ENR), Gerald Enns (MACA)

Government of Canada- Krupesh Patel (ECCC), Dan Coombs (DFO), Alasdair Beatty (DFO), Trish Auser (ECCC), Jenn Walsh (CIRNAC), Katie Bakker (CanNor), Melissa Gorman (HC), Victoria Shore (ECCC), Reg Ejeckam (ECCC), Fadi Araji (ECCC), Scott Kidd (TC), Kim Pawley (CIRNAC), Russel Wykes (CIRNAC - CARD), Peter Unger (NRCan), Boyan Tracz (NPMO), Eri Hiraga (PC), Michael Rybansky (HC), Michael Staniewski (CIRNAC), Anne Wilson (ECCC), Gabe Mahamad (CIRNAC), Snehal Lakhani (ECCC), Adrian Paradis (CANNOR)

Fort Resolution Métis Government- Katy Dimmer (Firelight for FRMG), Shawn Mckay

Deninu Kųé First Nation- Patrick Simon, Mark d'Entremont (LGL Limited for DKFN), Richard Simon,

Mackenzie Valley Land and Water Board- Jacqueline Ho, Heather Scott

K'atl'odeeche First Nation- Peter Redvers, Patrick Riley, Andy Cardinal

Hamlet of Fort Resolution- Tom Unka

Day 2

Pine Point Mining and Golder Associates- Andrew Williams, Kristine Mason, Damian Panayi, Jesse O'Brien

Mackenzie Valley Environmental Impact Review Board - Chuck Hubert, Catherine Fairbairn, Jeremy Freeman, Kate Mansfield, Mark Cliffe-Phillips, Alan Ehrlich, Stacey Menzies, Catherine Janz

GNWT- Morgan Moffitt (HSS), Dinah Elliot (ITI), Laurie McGregor (ENR), Marie-Christine Belair (Lands), Mike Byrne (ITI), Melissa Pink (Lands), Chris Hewitt (MACA), Dianna Beck (ITI), Sheyenne Jumbo (INF), Benji Straker (ITI), Naomi Smethurst (ECE), Benjamin Bey (INF), Joyce Gourlay (INF), Charlene Squibb (ITI), Tracey Covey (Lands), Lorie Fyfe (MACA), Benjamin Bey (INF)

Government of Canada- Krupesh Patel (ECCC), Dan Coombs (DFO), Jenn Walsh (CIRNAC), Katie Bakker (CANNOR), Melissa Gorman (HC), Victoria Shore (ECCC), Reg Ejeckam (ECCC), Scott Kidd (TC), Kim Pawley (CIRNAC), Russel Wykes (CIRNAC CARD), Peter Unger (NRCan), Boyan Tracz (NPMO), Eri Hiraga (PC), Michael Rybanksy (HC), Michael Staniewski (CIRNAC), Jennifer Sabourin (ECCC),

Fort Resolution Métis Government- Katy Dimmer (Firelight for FRMG), Shawn Mckay

Deninu Kųé First Nation- Patrick Simon, Mark d'Entremont (LGL Ltd. For DKFN), Richard Simon, Amanda Degray (Trailmark)

Mackenzie Valley Land and Water Board- Jacqueline Ho

Hamlet of Fort Resolution- Tom Unka, Carol Collins, Lloyd Norn

Appendix B – Stormz cards from EA Technical scoping meeting May 4 and 5, 2021

MVEIRB - Pine Point Mine Project - EA Technical Scoping – STORMZ Cards	
Cluster	Title & description
Scope of Development	<p>Teck Site How will PPML consider remediation of the Teck site? Teck is a stakeholder in this project and how PPML manages water will affect how Teck proceeds. Teck has a robust system.</p>
	<p>Greenfield vs. Brownfield What is considered greenfield vs. brownfield? Brownfield is anything has been previously disturbed. Most of the new deposits are greenfield.</p>
	<p>Power Use Power use from Taltson vs. generator - need to consider climate change and should use generators as little as possible. PPML says Taltson can't supply all the power, but they are working with NTPC and hope they can provide the power with the expansion. Also looking at alternatives like compressed gas and wind-power and batteries.</p>
	<p>Federal Land (railbed) Discussion around overlap between federal land and underground mines. PPML is looking into options for mining those resources not from directly above, and where roads will cross the old rail bed.</p>
	<p>Grout Curtains Grout curtains will mostly be used in the western sites where it is wetter.</p>
	<p>Bridges If Hay River and Buffalo Bridge need work, will that be scoped into this project, or will that be separate?</p>
	<p>Federal Rail Bed PPML does not plan to do any work on the railbed. Only interactions will be where they have to cross it (e.g., roads). There could be some impact in one place on the west side of the project, but PPML may still be able to avoid that.</p>
	<p>Pit Reclamation Existing pits have not been reclaimed properly. That is separate from this EA. But if some of these pits are used for this project, need to make sure that those pits are reclaimed to a condition that is acceptable to the community.</p>
	<p>Brownfield and Greenfield Need to restore as much as possible of greenfield areas back to its natural state. PPML plans to return brownfield to its current state, but people want those spaces returned to a better state.</p>
	<p>Use of Existing Pits Some pits may be used for waste rock, some for water containment, some for tailings. Need to develop and provide a map for which pits will be used for what purpose, and whether that is acceptable.</p>
<p>Railbed and Collaboration Impacts of mine or operations on the railbed will have to be addressed by the proponent. There is also potential for PPML to help remediate the railbed using its fleet of vehicles. Opportunity for collaboration.</p>	

Appendix B – Stormz cards from EA Technical scoping meeting May 4 and 5, 2021

MVEIRB - Pine Point Mine Project - EA Technical Scoping – STORMZ Cards	
Cluster	Title & description
	<p>Life of Mine Need more information and clarification on the life of the mine. There is a lot of current and planned exploration, which could expand production beyond the 10 year planned production window.</p>
	<p>Contamination from Shared Equipment Concern about sharing equipment between the contaminated site clean up and the mine, because of risk of spread.</p>
Scope of Assessment	<p>Cumulative Effects of Climate Change and Fires Cumulative impacts are a very important consideration, and should consider not just reasonably foreseeable developments, but also climate change and fires.</p>
	<p>Temporal Scope Temporal scope seems very limited. Would PPML consider a pre-development case in addition to base case?</p>
	<p>Key line of Inquiry vs. Subject of Note Review Board described purpose of key lines of inquiries and subjects of note. Developer commented that subjects of note will still be looked at and studied carefully, just not in as much detail as key lines of inquiry.</p>
	<p>Cumulative Effects Cumulative effects is a big issue that needs to be addressed related to water, land, fish, wildlife, etc. Cumulative effects are synergistic and some may not be realized for years down the road.</p>
	<p>Understanding Cumulative Effects The context for effects characterization and significance is important for understanding. Understanding impacts has to go hand in hand with resilience and vulnerability.</p>
	<p>Key Lines of Inquiry - Culture Culture should be a key line of inquiry, or at a minimum as a discrete valued component.</p>
	<p>Cumulative Effects Cumulative effects are important. Cumulative effects of past activity at the site are still being felt. There are concerns about the berries and drinking water in that area. There aren't enough signs out there for people to know what is going on.</p>
	<p>Community Significance Thresholds Will the developer work with communities to identify significance thresholds that are relevant to the community?</p>
	<p>Reasonably Foreseeable Development - Digga Digga Enterprises (forest management area) should be included as a reasonably foreseeable development.</p>
	<p>Key Line vs. Subject of Note Who decides on the level of assessment? The term 'subjects of note' seems to imply that these topics matter less. Maybe we could find a different term for these terms to show they are equally important. The Review Board notes that the key lines are considered more important. That doesn't mean subjects of note don't matter, just that they aren't as critical as the key lines. The</p>

Appendix B – Stormz cards from EA Technical scoping meeting May 4 and 5, 2021

MVEIRB - Pine Point Mine Project - EA Technical Scoping – STORMZ Cards	
Cluster	Title & description
	list we have looked at is proposed by the developer, and is not final. The Review Board determines which valued components are key lines of inquiry.
Surface Water and Groundwater Quantity and Quality	<p>Tailings and Groundwater Management PPML will use geochemistry and modelling results to determine the importance of the pathway of tailing deposition in existing pits, and groundwater exposure to the tailings, and any subsequent mobilization into surface waters, in this assessment.</p>
	<p>Water Quality and Hydrology Studies There has been long-standing work to understand the groundwater in the area, and that information will be used and build upon for this assessment. PPML has done surveys looking at water quality in the area. PPML will consider use of tracers.</p>
	<p>Pit Dewatering and Tailings PPML plans to pump out as much water from pits as possible to use in the processing plant, prior to deposition of tailings. There would be a dewatering station in the pit to remove water as well.</p>
	<p>Cement/Grout More details about the cementing or grout process in underground mining (and the potential for groundwater contamination) will be developed during feasibility, and there will be more information in the DAR.</p>
	<p>Mineralized Rock PPML anticipates only very low mineralization (which has a risk of zinc or lead leaching) in rocks.</p>
	<p>Use of Existing Pits for Tailings and Mine Rock How will it be determined which pits are appropriate for tailings or mine rock deposition?</p>
	<p>Water Modeling In order to breakdown modelling of a complicated site (underground mining, surface structures, different sources of loading in surface and groundwater) into manageable pieces for evaluating effects. PPML will provide an initial concept, including a water site balance, site water quality model, and groundwater movement. The water management plan will need more detail, and then iterations of the working model can begin.</p>
	<p>Chemical Transport Modeling Will there be detailed chemical transport modeling to understand interactions (and using what tools)?</p>
	<p>Water Movement between Pits and Underground Discussion around water going in and out of mined and empty pits. PPML working with GNWT on what compatibility thresholds would be required for pit transfers or injections wells.</p>
	<p>Man-made Lagoons Discussion around 2 man-made lagoons north of the town of Pine Point site, that will be used as part of the concentrate circulation network.</p>

Appendix B – Stormz cards from EA Technical scoping meeting May 4 and 5, 2021

MVEIRB - Pine Point Mine Project - EA Technical Scoping – STORMZ Cards	
Cluster	Title & description
	<p>Use of Water from Great Slave Lake How will Indigenous group concerns about use of Great Slave Lake water being used be addressed in the developer's assessment?</p>
	<p>Cumulative Effects on Water Quantity Concerned about water use from Great Slave Lake, and Resolution Bay. Cumulative effects of that and all the other uses in that area. DKFN looking at water use for tar sands and low water levels in the Peace Athabasca delta. This could have cumulative effects on the Slave River delta.</p>
	<p>Important issues include water management, water quality, Big Buffalo River.</p>
	<p>Water Quality and Human Use Important to consider changes to drinking, recreational, and cultural use water. How will any water changes compare to the strictest guidelines for human use?</p>
	<p>Water Assessment - Key Lines and Subjects of Note There are subjects of note on groundwater quality and quantity, as well as surface water quantity. The greatest linkages between assessments are in the key line of inquiry on water quality. Information from the subject of notes assessments would be taken into that key line assessment. And then all of that information would then feed into the fish and fish habitat subject of note.</p>
	<p>Ground Water and Great Slave Lake Concerned about impacts of groundwater or surface water reaching Great Slave Lake.</p>
	<p>Water Connectivity Water connectivity can be studied in fine detail using the right technologies/methods. This would be very valuable for understanding impacts. There should be an assessment of changes to drainage patterns from operations.</p>
	<p>Great Slave Lake Baseline Need baseline studies on the water quality of Great Slave Lake, in order to measure changes over time.</p>
	<p>Water Quality Assessment The changes to water quality will not be assessed directly for significance. The change determined by the assessment will be carried through to the fish and fish habitat significance determination and the traditional land and resource use significance determination.</p>
Fish and Fish Habitat	<p>Fish in Ponds and Pits Potential for fish in the ponds and connections to open pits? PPML have started discussions with DFO and ECCC.</p>
	<p>Fish Habitat Valued Components Why aren't Little Buffalo River, Sandy and Birch Creeks, Paulette Bay included? Little Buffalo River should be included because it is in the watershed.</p>

Appendix B – Stormz cards from EA Technical scoping meeting May 4 and 5, 2021

MVEIRB - Pine Point Mine Project - EA Technical Scoping – STORMZ Cards	
Cluster	Title & description
	<p>Stickleback Need to look at how to avoid having Sticklebacks finding their way into mine workings, they are good at spreading to unexpected places.</p>
	<p>Indigenous Knowledge How will Indigenous Knowledge be incorporated into the aquatic effects assessment (for example, site visits)?</p>
	<p>Assessment Endpoints Is traditional land use an assessment endpoint for fish and fish habitat? The endpoints are ongoing fisheries productivity and self-sufficient populations. This then feeds into the traditional land and resource use assessment which more holistically considers how fish are affected and what that means for people.</p>
	<p>Habitat Requirements by Lifecycle Will PPML look at different habitat uses by different species at various life cycle phases to understand habitat loss and offsetting requirements? Yes, PPML also notes that the habitat losses from this project will be small.</p>
	<p>Cumulative Effects on Fish Habitat Even small habitat losses and cumulative effects are concerning.</p>
	<p>Little Buffalo River Agreement that Little Buffalo river should be considered.</p>
	<p>Important issues for this EA include impacts on fish</p>
	<p>Significance of Impacts on Fish Confirmation that the significance determination for fish will relate to the specified valued components of Great Slave Lake, Big Buffalo River, and other specified water courses.</p>
	<p>Little Buffalo River East of the brownfield area is very swampy. This is where the headwaters of Hanbury Creek start, and that creek drains into Little Buffalo River. This was an important area for traditional use (trapping) prior to the original Pine Point Mine. A lot of the water from the east side of the development is ending up in Little Buffalo River, which is important for several harvested fish species and fish habitat.</p>
	<p>Pit N204 Pit N204 is close to water (Paulette Bay). This is another important location for fish habitat and traditional use.</p>
	<p>Little Buffalo River This should be included in the assessment.</p>
Wildlife and Habitat	<p>Whooping Crane + Wood Buffalo National Park Whooping Crane, as an endangered species with limited habitat, should be assessed comprehensively (perhaps as a key line</p>

Appendix B – Stormz cards from EA Technical scoping meeting May 4 and 5, 2021

MVEIRB - Pine Point Mine Project - EA Technical Scoping – STORMZ Cards	
Cluster	Title & description
	instead of subject of note). Particularly because of the importance of the species to Wood Buffalo Park. RSA for whooping crane should include the park.
	Species at Risk Review Board staff discussed responsibilities under s79 of the Species at Risk Act.
	Study Areas Concern with using one standard Local Study Area and Regional Study Area for all wildlife (except caribou). May need to customize the Local Study Areas and Regional Study Areas for different species.
	Bank Swallow Some of the birds species require more specific attention and comprehensive assessment, particularly bank swallow.
	Ecological Risk Assessment Question to MVEIRB about whether an ecological risk assessment will be part of this EA. More information or suggestions will be provided.
	Wood Bison and Northern Leopard Frogs Not necessary to assess wood bison and northern leopard frog in this EA.
	Moose Impacts on moose should be assessed in this EA.
	Changes in Access and Harvest Changes in access and human harvest should be assessed as a primary pathway for boreal caribou and moose.
	Wildlife Assessment Endpoints Wildlife assessment endpoints need to consider both populations and subpopulations (including preferred species and locations).
	Furbearing Animals Current proposed assessment considers wolverine and wolf. Communities may want other species included (e.g., lynx, marten, hare)
Caribou	Caribou are Important Important issues for this EA include caribou
	Geographic Scope for Caribou The geographic scope for the boreal caribou assessment needs more careful consideration. Assessing at the NT1 range will miss impacts on local people who hunt caribou.
	Geographic Scope for Caribou There might be a variety of scales for assessing impacts on caribou. Local scale. The Local Study Area. The NT1 range. The southern NWT planning region. Regional Study Area, which is biologically relevant. A range around the local animals collar data

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	shows that there is a group of animals that don't cross back and forth often, and so they could be more affected and should be assessed. Follow up meeting between PPML and ENR on this topic.
	Resource Selection Function Model ENR has an Resource Selection Function model and collar data to assist with a habitat suitability model for caribou.
	Cumulative Effects on Caribou There will be a reasonably foreseeable development analysis for boreal caribou. This should consider Digga, Mackenzie Highway, Prairie Creek All-season Road, smaller operations, and others.
	Changes in Access and Harvest Changes in access and human harvest should be assessed as a primary pathway for boreal caribou and moose.
Air Quality, Noise, and Climate	Canadian Air Quality Standards PPML should consider the Canadian Ambient Air Quality Standards, in addition to NWT standards.
	Calpuff Model CALPUFF model will use air quality standards from other jurisdictions.
	Air Quality and Emissions Monitoring and Management Plan PPML recognizes that an air quality management plan will likely be required, but details have not yet been established. PPML intends to draft an initial conceptual AQEMMP developed during permitting, unless reviewers request the conceptual version of this plan as part of the DAR submission. This document will be revised during construction and operations as a living document.
	Greenhouse Gas Emissions Will greenhouse gas emissions reporting be year to year, phase to phase? PPML: they will be estimated annually per year of the project, from construction onward.
	Air Quality Monitoring and Management Plan This plan should include emissions (in title too), from all equipment used in the life of project.
	Air, Noise, Vibration, and Aesthetics PPML will work with knowledge holders to identify land based receptors for changes to the landscape.
Terrain, Soils, and Vegetation	Permafrost There is only very dispersed, sporadic, and infrequent permafrost in the project area. Pine Point has not come across any in its three years of drilling.
	Ecological Areas that Support Traditional Use Plants Vegetation assessment will consider ecosystems and ecosites that are supportive of traditional use plants and sensitive plants.
	Vegetation Assessment Endpoints Vegetation assessment endpoints need to consider both populations and subpopulations (including preferred species and locations).

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Heritage Resources	<p>Involve Local People If a heritage resource is found, work should stop, local experts need to be brought in.</p>
	<p>Archaeological Impact Assessment There has been an AIA report submitted. Archaeologist determined there was some archaeological potential in brownfield areas as well as greenfield.</p>
	<p>Archaeological Work The scope of this work must be in line with the scope of development, including any changes to the footprint over time.</p>
	<p>Archaeological Impact Assessment Why isn't more of this information available as part of the EA Initiation Package? This assessment should inform which pathways of impacts on heritage resources are considered. Old cabins, burial site within the footprint of the mine. The full report has been submitted to the Prince of Whales Museum, but the EA initiation package doesn't include all the details. Section 2.2.1.2 and Table 12 use information from that report as part of determining that this is a secondary pathway. PPML noted there will be a more thorough assessment of that pathway in the DAR.</p>
Traditional Land and Resource Use	<p>Traditional Land Use as an Overarching Way to Understand Impacts Traditional land and resource use is an overarching topic that takes into account most key lines and subjects of note. Review Board staff talked about how The Review Board also wants to have an integrated approach and look at pathways and VECs, under well-being.</p>
	<p>Changes in Access and Harvest Changes in access and human harvest should be assessed as a primary pathway for boreal caribou and moose.</p>
	<p>Pit N204 Pit N204 is close to water (Paulette Bay). This is another important location for fish habitat and traditional use.</p>
	<p>Furbearers and Grouse Traditional land and resource use will consider results of wildlife assessment - it's unclear how furbearers and grouse will be assessed in the wildlife assessment and how that will feed into the traditional land and resource use assessment.</p>
	<p>Need to consider Treaty Rights</p>
	<p>Treaty Relationship All Canadians, not just government and Indigenous people, are part of the treaty and have a role to play in this relationship. Treaty rights are not just an Indigenous thing, it's a Canadian thing.</p>
	<p>Indigenous Worldview Needs to be considered, understood, and respected by Treaty partners. The land - water, animals, etc - they relate to each other more than we can really see. Affects how Indigenous people see issues within the EA. Have own system for understanding if the environment is good and healthy.</p>

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	<p>Traditional Foods People should be able to consume traditional foods, which are healthier than other foods. This should be promoted.</p>
	<p>Baseline Studies There are challenges but also opportunities related to Indigenous Traditional Knowledge feeding into biophysical assessments. For example, western science and ITK holders doing baseline studies together.</p>
	<p>Consideration of Fish and Fish Habitat Fish and fish habitat is not currently an assessment endpoint, but that doesn't mean it isn't considered. The ability to participate in traditional fishing, the availability of and access to resources, and what these changes mean for people are considered. PPML pointed out the interconnectedness is a big priority for it.</p>
Social and Economic Conditions	<p>Mine Traffic and Road Infrastructure Need to understand traffic and traffic issues for this project (volumes, types, different phases and so on). PPML plans to provide this information in the DAR and work with GNWT highways road capacity and maintenance.</p>
	<p>Community Health and Well-being PPML confirmed that social and economic conditions is where they have included aspects of community health and well-being (to be discussed more tomorrow afternoon).</p>
	<p>Consider Socio-ec and transportation Important issues include socio-economic impacts, and transportation of materials to and from sites.</p>
	<p>Haul trucks Concerns about hauling materials - which routes various trucks would use. 100 tonne trucks would only be used from mining site to the processing plant. Still have to determine how much those vehicles would use the highway vs backroads.</p>
	<p>Mine Traffic and Road Infrastructure The fluctuation in the surface of the road could mean that at some times of year (e.g. spring) when the weight limit on the road is reduced, the trucks might be able to carry less. That means there could be more than that predicted 10-15 vehicles per day that PPML predicted. PPML should work with GNWT too on capacity.</p>
	<p>Worker Transportation and Traffic Concerned about how workers will be transported to the site (bussed or private vehicles). How will mine traffic affect residents of Hay River.</p>
	<p>Worker On-Site Recreation Concerned about how workers will be transported to the site (bussed or private vehicles). How will mine traffic affect residents of Hay River.</p>

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	<p>Pit N204 Proximity to Infrastructure Pit N204 is very close to Dawson Landing and Highway 6. Concerned about how open pit mining in that area can be accommodated around the highway and the power infrastructure.</p>
	<p>Cumulative Social and Cultural Impacts There will be a cumulative effects assessment on each key line or subject of note (including social and cultural impacts, as well as an overarching cumulative effects assessment.</p>
	<p>Calls to Action - Truth and Reconciliation Commission Has the developer considered calls to action 151 (recognize increased demands on social infrastructure) and 154 (women, girls, LGBTQ2S+ groups). PPML is considering increased pressure on infrastructure and services, and will apply a GBA+ analysis in the impact assessment.</p>
	<p>Human Health Risk Assessment The proposal in the initiation package focuses on a qualitative assessment. Question about whether there will be a quantitative human health risk assessment (e.g., contamination of country foods)? This isn't planned at the moment. May hear more about this in community scoping.</p>
	<p>Social vs. Economic When you combine the concepts of social and economic, economic often gets priority and social considerations get less. This should be reversed.</p>
	<p>Cultural Conflict Indigenous culture doesn't always fit well with 'mining' culture and expectations.</p>
	<p>Negative Impacts of Mining Drugs, alcohol, domestic abuse. Jobs don't last as long as new debts do. Shift work affects family dynamics even when workers get back home.</p>
	<p>Health and Well-being Should be a key line of inquiry</p>
	<p>Assessment of Impacts on Different Indigenous Groups Impacts on different Indigenous groups should be assessed separately to acknowledge the different ways they may be affected.</p>
	<p>Assessing Social Impacts Biophysical assessments are not a proxy for social impacts. Impacts on fish are not the same as impacts on fishing.</p>
	<p>Mitigating Social Impacts Identify mitigation that works for communities to address social impacts.</p>
	<p>Cumulative Impacts Need to carefully consider cumulative effects on the human environment. E.g., quantification of land loss. Don't just focus on</p>

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	absolute impacts, but also relative or perceived impacts. A 1% loss of land sounds low, but if this is a key migration corridor or a hunting area this is important.
	Assessment Social Impact Assessment is inherently cumulative in nature. Economic assessment will consider reasonably foreseeable developments.
	Incorporating Indigenous Traditional Knowledge PPML recognizes the importance of ITK and will work with communities on this and the type of information communities want to see in the EA. Want to develop a framework for integrating ITK into the process and considering community-specific protocols.
	Baseline Health information Didn't distinguish between local communities and NWT overall, or Indigenous vs non-Indigenous. This should be fixed in the DAR in order to address equity issues. PPML plans to do this in the more detailed assessment, including looking at vulnerable groups as well.
	Community History and Context Will PPML describe local context, and include qualitative knowledge on health and well-being in the DAR? Yes, historic context influences current health and well-being and will be included for a holistic assessment. Including local strengths, opportunities, and resilience.
	Development and Communities Government wants to understand how development near communities will impact them, and will support communities and their governments.
	Community Infrastructure Will the developer enter into an MOU with communities to address access or use of community infrastructure and services (roads, potable water, septic systems, solid waste disposal, recreation)? PPML will approach community department any time the use a community service, to identify how that should be addressed (e.g., fee for service or other agreement).
	Fire Prevention PPML will contact the Fire Marshall to ensure all guidelines and standards are met.
	Emergency Response PPML will establish on-site emergency responses (fire, flood, vehicle accidents). Plans would focus primarily on site, but would consider off-site incidents (like a vehicle accident on the highway). These response plans have not been developed yet during exploration, but will be developed for the mine. PPML would engage with local municipalities on the development of these plans.
	Community Government Engagement Encourage engagement with local community governments. Human resources and community government capacity should be

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	<p>considered - may be difficult for community governments to retain staff and compete with the mine for employees. This will be assessed at a high-level in the employment analysis in the DAR, but community-specific effects are best addressed through direct engagement as the Project moves forward.</p>
	<p>Trans-shipment Facility Ore concentrate will be moved from truck to rail in Hay River. This is a facility affected by multiple jurisdictions. There are some road limitations at certain times of year. This facility and associated activities need to be discussed at some point. Some of this is relevant to EA, some is more relevant for permitting.</p>
	<p>Qualitative Data, Thresholds, and Significance Thresholds are very important when using qualitative data (particularly thresholds from Indigenous groups). Often qualitative data doesn't feed as directly into the final assessment (it shows up in baseline, but not significance determination), compared to quantitative data. Will PPML work with communities on community-defined thresholds. PPML will consider input from engagement and ITK studies, and will consider levels of concern. Section 4.2.2 shows methods for assessing impacts on human environment. Review Board staff note that the Board listens to all parties and evidence as part of identifying thresholds and determining significance.</p>
	<p>Community Engagement PPML has met with community leaders, but should also meet with community members. People are interested and need to know what the Project is about and how it will affect them. More community sessions are needed.</p>
Well-being	<p>Well-being as a Key line of Inquiry Health and well-being should be a Key Line of Inquiry, rather than just a subject of note. Well-being is very important to communities and government, and is a complicated and interconnected topic. PPML agrees with the importance of well-being and that it needs to be assessed holistically.</p>
	<p>Community-based Indicators of Well-being Review Board described recent requirement for the development of community-based indicators of well-being. May inform PPML.</p>
	<p>Importance of the Land Important that people understand that this Project is in Deninu Kue territory - Treaty 8 - Akaitcho territory. This isn't just a hunting and trapping area, a traditional area, a place for traditional resources. It's also a part and place of a vast territory that gives people purpose. The Land gives people a sense of home and belonging - and value and love. The relationship between living and non-living things matter and give people purpose. This relates to well-being. This is why reclamation matters so much, why things need to be returned to the pre-existing state.</p>