

February 6, 2020

VIA EMAIL - iaac.springbank.aeic@canada.ca

Impact Assessment Agency of Canada
Prairie and Northern Region
#1145, 9700 Jasper Avenue, Canada Place
Edmonton, AB T5J 4C3

Attention: Jennifer Howe, Project Manager

Dear Sirs/Mesdames:

**Re: Springbank Off-Stream Reservoir Project (the "Project")
Technical Review of Responses to Information Requests in relation to the Environmental
Impact Statement (the "EIS")**

On behalf of the Tsuut'ina Nation ("Tsuut'ina"), we write to provide technical comments on the responses of Alberta Transportation (the "Proponent") to: (1) the information requests of the Impact Assessment Agency of Canada (the "Agency"); and (2) the gaps identified by the Agency in the Proponent's responses to the Agency's information requests (the "IRs" and the "Gap IRs," respectively). These comments are intended to inform the second round of the technical review of the revised EIS currently being conducted by the Agency.

Tsuut'ina Nation

Tsuut'ina is an Indigenous group whose reserve lands (Tsuut'ina Indian Reserve No. 145, the "reserve") are located southwest of what is now Calgary, near the eastern foothills of the Rocky Mountains and the Elbow River. Tsuut'ina citizens hold constitutionally-protected Aboriginal rights as well as Treaty 7 rights and inherent rights, which depend upon the lands, waters and resources in Tsuut'ina traditional territory. The Project is located squarely within Tsuut'ina's traditional territory, within approximately four hundred metres of Tsuut'ina's reserve, where many Tsuut'ina citizens reside and where all of Tsuut'ina's community infrastructure is located. As a result of its location in the heart of Tsuut'ina traditional territory in such close proximity to the reserve and the Tsuut'ina community, the nature and extent of the Project's impacts on Tsuut'ina's lands and rights are matters of very serious concern to Tsuut'ina.

Tsuut'ina's most serious concerns in relation to the Project include its potential to cause adverse impacts on groundwater on the reserve, exacerbate flood risk to the reserve, particularly in combination with other projects such as the Bragg Creek Flood Mitigation Project, and cause adverse impacts to wildlife and Tsuut'ina Aboriginal and treaty rights.

Technical Review of the Revised EIS

In our letter to the Agency of June 20, 2018, we explained that there were significant technical deficiencies with the EIS, which would need to be addressed through information requests to the Proponent. While we understood that the Agency intended to work closely with Tsuut'ina to prepare information requests to the Proponent, the Agency did not incorporate many of the information requests proposed by Tsuut'ina into the requests issued to the Proponent. Tsuut'ina was not provided with a meaningful role in the Agency's determination of the sufficiency of the responses provided by the Proponent. This is troubling because the missing information is central to the Proponent's (and the Agency's) ability to assess potential impacts to Tsuut'ina's rights and interests from the Project.

With the assistance of PGL Environmental Consultants ("PGL"), Tsuut'ina has reviewed the Proponent's responses to the IRs and the Gap IRs. Due to time and capacity constraints, Tsuut'ina has focused its attention on the following areas:

1. Hydrogeology
2. Wildlife and biodiversity
3. Cumulative effects
4. Aboriginal and treaty rights

Tsuut'ina's key comments in these areas are summarized briefly below. Enclosed are tables prepared by PGL listing specific comments on technical issues in relation to hydrogeology, wildlife and cumulative effects, including proposed follow-up information requests to the Proponent.

1. Hydrogeology

PGL's 2018 review of the Proponent's data determined that its groundwater model had been poorly calibrated such that it overestimated the existing hydraulic head (a measurement of groundwater pressure) in the area aquifers by 12m to 48m. Numerous private water wells and surface water features on the reserve rely on these aquifers, which were poorly represented by the model. As a result, PGL had very low confidence in the model's conclusions predicting no significant Project effects. It was possible that adverse effects to the region's hydrogeology had been underestimated, with significant implications for Tsuut'ina's access and use of water and dependent rights.

In response to PGL's 2018 work, the Proponent revised the boundaries for the numerical model. The Proponent, however, did not respond to Tsuut'ina's request that the model be properly calibrated with real-world data collected from purpose-drilled monitoring wells on Tsuut'ina land. As PGL explained to the Proponent in a meeting held on September 17, 2019, the historical well data that the Proponent has used to calibrate its groundwater model is inherently unreliable and does not allow for monitoring of Project effects during construction and operation. Tsuut'ina has requested that the Proponent work with Tsuut'ina to identify locations on Tsuut'ina lands where monitoring wells should be drilled, that a drilling program be undertaken, and that the data from the monitoring wells be used to confirm that the model's description of existing conditions is accurate. This is a reasonable request that could be fulfilled at a modest cost in a matter of weeks. Without this effort, there can be no confidence that the Proponent's groundwater model reflects

the real world and therefore no confidence that the model's predictions accurately reflect how the Project will affect groundwater on the reserve, an important source of water for many Tsuut'ina citizens.

While the Agency issued IRs related to several of Tsuut'ina's ongoing concerns, the Proponent has not provided or been required by the Agency to provide meaningful answers to many questions arising from Tsuut'ina's concerns in relation to hydrogeology. The Proponent has made no commitment to develop purpose-specific wells on the reserve, which could be used to assess baseline conditions, verify the model's description of the Elbow River and groundwater flows, and monitor for impacts during construction and operation of the Project. Without this information, the model cannot be relied on to make accurate predictions of effects on groundwater.

2. Wildlife and biodiversity

PGL's 2018 review found that the Proponent had not provided sufficient information to understand elk survey results in the context of regional data and traditional data. The Proponent also had not described elk movement patterns and population trends and threats in enough detail to understand how the loss of ungulate range and increased fragmentation associated with the Project would impact elk in the area. In addition, some of the proposed mitigation measures, such as buffer distances and monitoring, were poorly justified or lacked detail.

PGL's review of the Proponent's responses to the IRs and Gap IRs indicate that Tsuut'ina's concerns remain unaddressed. The Proponent has not provided or been required by the Agency to provide meaningful answers to Tsuut'ina's questions in relation to Project impacts on wildlife. Rationales and literature references to support scoping decisions remain insufficient or absent, integration with traditional knowledge regarding habitat suitability has not been completed and, most importantly, questions related to elk, a species of profound importance to Tsuut'ina, have not been meaningfully addressed. In particular, due to the Proponent's unwillingness to collect data regarding elk movement, there is significant uncertainty regarding current elk behaviour and, as a result, an inability to predict Project effects on elk with any confidence. It remains unclear what effects the Project will have on Tsuut'ina's rights with respect to the cultural and stewardship values associated with elk.

The purpose of an impact assessment is to fill information gaps such that meaningful predictions about impacts can be made. Without further work on elk movement, the EIS cannot be relied on to make meaningful predictions regarding elk movement or to predict that proposed mitigation measures are adequate to protect elk or Tsuut'ina's rights and interests. This work must be done and must incorporate traditional use information in order to ensure that Tsuut'ina's knowledge and interests are accounted for.

3. Cumulative effects

PGL's 2018 review found that cumulative effects to hydrology from the interaction between the Project and proposed upstream works have not been adequately studied, such that the EIS's conclusions of "no significant adverse effect" to the Elbow River between the Project and upstream projects is not defensible. As written, the EIS left open the possibility that water quantity and fluvial morphology (river shape) could be affected, with consequent adverse effects on all valued components reliant on the Elbow River, including those associated with the exercise of Tsuut'ina

rights. PGL also found that the Proponent had not provided an integrated assessment of cumulative effects on the reserve as a complete parcel of federal lands.

PGL's review of the Proponent's response to the IRs and the Gap IRs indicates that these deficiencies remain. While the Agency requested that the Proponent assess environmental effects to the reserve as a functional unit in order to permit the Agency to assess effects to those lands, the Proponent has failed to do so. The Proponent disputed the need to respond to the Agency's request regarding hydrology and, as a result, a cumulative effects assessment of Project effects on hydrology remains outstanding. Similarly, the Proponent has declined to integrate findings of various effects as they relate specifically to the reserve. The Agency has not asked the Proponent to consider upstream accidents and malfunctions which may affect the reserve, meaning that the assessment is unlikely to be able to identify sufficient mitigation measures to protect the reserve in the event of a cascading accident or series of flood control structure failures along the Elbow River. As a result of these issues, the Agency does not have the information required to reliably predict how the Project would interact with upstream works to increase flood risk to the reserve.

4. Aboriginal and treaty rights

Tsuut'ina has consistently raised concerns regarding deficiencies in the Proponent's assessment of impacts on Tsuut'ina Aboriginal and treaty rights. The Proponent's assessment of impacts on Aboriginal and treaty rights in the original EIS relied on inferences drawn based on its assessment of Project effects on biophysical valued components. The Proponent assessed impacts on the Aboriginal and treaty rights of all Indigenous groups in the same way, ignoring differences in the cultures, practices, circumstances and sensitivities of different groups. At the time the EIS was prepared, the Proponent did not have the benefit of the *Tsuut'ina Traditional Land use Report for the Proposed Springbank Off-Stream Reservoir Project* (the "TUS") and the Proponent did not involve Tsuut'ina in the assessment of Project impacts on Tsuut'ina rights.

In its IRs, the Agency identified these shortcomings and issued a series of detailed requests (IR 2-01 to 2-10), which collectively had the effect of requiring the Proponent to reassess Project impact on Indigenous groups in accordance with the *Methodology for Assessing Potential Impacts on the exercise of Aboriginal and Treaty Rights of the Proposed Frontier Oil Sands Mine* (the "Frontier Methodology").

The Proponent did not provide a meaningful response to IRs 2-01 to 2-10. Instead, the Proponent defended the approach it took to assessment of impacts on Aboriginal and treaty rights in the EIS. The Proponent's responses to these IRs included little or no new information other than excerpts of statements from Indigenous groups in letters and meetings, which were often devoid of context. There is no indication in the responses that the Proponent truly engaged with comments from Tsuut'ina and incorporated its views into the assessment of Project impacts on Aboriginal and treaty rights. Despite clear requests to do so, in no case did the Proponent actually reassess Project effects on Tsuut'ina. To the extent that the Proponent proposed any new mitigation measures, they were unilaterally designed by the Proponent, very modest in scope and were described in scant detail.

At pp. 3-4 of its responses to the package 2 IRs, the Proponent included a section titled, "Background Information about Aboriginal and Treaty Rights in Relation to the Project." The

purpose of this section appears to be to provide context to the discussion of impacts on Aboriginal and treaty rights. Unfortunately, the information provided is inaccurate and misleading.

The Proponent's statement that "Treaties 6, 7, and 8, signed in the late 19th century, extinguished any Aboriginal rights (including Aboriginal title) and replaced those with treaty rights" is not accurate. The Proponent cites two authorities for this proposition: *R v Lefthand* and *Mikisew Cree First Nation v Canada*. Both *Lefthand* and *Mikisew Cree* concerned impacts on treaty rights. There was no issue in either case as to whether Treaty 7 or Treaty 8 (the two treaties at issue in those cases) operated to extinguish Aboriginal rights that existed by virtue of pre-contact practices, customs or traditions and, as a result, to the extent that the courts in those cases made comments to that effect, those comments are not binding on the parties and were made without a firm basis in the evidence. Moreover, even if those comments were binding on the parties, as purported findings of fact, such comments would not be binding on anyone beyond the parties to those cases. Tsuut'ina strongly disagrees with the suggestion that Treaty 7 had the effect of extinguishing Tsuut'ina Aboriginal rights.

The Proponent also wrongly articulated the role of the Natural Resources Transfer Agreement of 1930 (the "NRTA") in defining treaty rights in Alberta. While it is true, as the Proponent asserts, that the NRTA is "binding law," it is inaccurate and misleading to refer to the NRTA as "the legal instrument that currently sets out and governs the First Nation right to hunt, fish and trap in Alberta." The NRTA is but one legal instrument that informs the interpretation of treaty rights in Alberta. The NRTA did not extinguish and replace treaty rights. The ultimate source of treaty rights in Alberta remains the treaties themselves, which must be given a "broad, purposive interpretation"¹ that reconciles the interests of both parties at the time the treaty was signed.²

The Proponent's apparent misunderstanding of the legal nature and effect of Treaty 7 and the rights it recognizes is extremely troubling. The Proponent's responses to the IRs suggest that its misunderstanding of the nature of Tsuut'ina Aboriginal and treaty rights has led it to underestimate the significance of Project impacts on those rights and what may be required to avoid or address those impacts.

In a letter of August 6, 2019, the Agency advised the Proponent that the Agency had determined that, with the exception of IR 2-03, the Proponent's responses to IRs 2-01 to 2-10 were all deficient. Accordingly, the Agency issued Gap IRs for each of IRs 2-01 to 2-10 other than 2-03 (the "Indigenous Rights Gap IRs"). The Indigenous Rights Gap IRs largely reiterated the requests in the original IRs with additional guidance to the Proponent.

On September 17, 2019, Tsuut'ina met with the Proponent. Among the topics discussed at that meeting was the Proponent's assessment of Project impacts on Tsuut'ina rights. In the course of the meeting, Tsuut'ina indicated to the Proponent that the Proponent had failed to adequately assess Project impacts on Tsuut'ina rights, highlighting some of deficiencies referred to above, including failure to adhere to the Frontier Methodology. Tsuut'ina requested that the Proponent engage with Tsuut'ina to understand its perspectives regarding Tsuut'ina rights and Project impacts on Tsuut'ina rights before responding to the Indigenous Rights Gap IRs. Tsuut'ina reiterated these positions in a letter dated October 17, 2019 (delivered on November 8, 2019), a copy of which is enclosed. To-

¹ *Manitoba Métis Federation Inc v Canada (Attorney General)*, 2013 SCC 14, [2013] 1 SCR 623 ("*Manitoba Métis*").

² *R v Sioui*, [1990] 1 SCR 1025, at pp. 1068-69 ("*Sioui*").

date, Tsuut'ina has not received a response to that letter and Tsuut'ina and the Proponent have not met to discuss Tsuut'ina perspectives regarding Tsuut'ina rights and Project impacts on Tsuut'ina rights as requested.

The Proponent's responses to the Indigenous Rights Gap IRs are inadequate. In general, in its responses to the Indigenous Rights Gap IRs, the Proponent reproduced views expressed by Tsuut'ina in correspondence and information provided in the TUS and stated the Proponent's position in relation to each issue. While at first glance the responses seem voluminous, there is a great deal of repetition, with some phrases and whole paragraphs reappearing verbatim dozens of times. Tsuut'ina was not provided with a draft version of the Proponent's responses prior to submission.

In general, the Indigenous Rights Gap IRs required the Proponent to incorporate information and perspectives from Indigenous groups regarding Project impacts on their rights, and use that information to reassess Project effects on Indigenous groups. While the Proponent's responses repeat or restate statements expressed by Tsuut'ina in the TUS and in correspondence, the Proponent has not used that information to reassess Project effects on Tsuut'ina rights. In response to instances in which the Agency specifically directed the Proponent to explain discrepancies between the views of Indigenous groups and those of the Proponent, the Proponent often simply indicated that it had done so and that any concerns have been addressed (e.g., p. 172 of package 2 in the responses to the Gap IRs). To the extent that the Proponent provided any new information in these responses, it is scant (e.g., Draft Guiding Principles and Direction for Future Land Use, Appendix 9-1). The Proponent's responses to the Indigenous Rights Gap IRs include virtually no new mitigation measures and, to the extent that new mitigation is proposed, it was not developed with meaningful involvement from Tsuut'ina or presented to Tsuut'ina for review and comment before being included in the responses.

The most fundamental problem with the Proponent's responses to the Agency's information requests in relation to Project impacts on Tsuut'ina rights, and with the Proponent's assessment of Project impacts on Tsuut'ina rights generally, is that the Proponent has not done the essential work of engaging with Tsuut'ina to understand Tsuut'ina's perspective regarding its rights, the role they play in Tsuut'ina culture, the conditions that support their exercise, the current challenges faced due to cumulative impacts and how the Project will affect Tsuut'ina Aboriginal and treaty rights and the culture and way of life those rights support. Without undertaking this exercise and collecting this information, it is not possible to assess Project impacts on Tsuut'ina rights in a meaningful way.

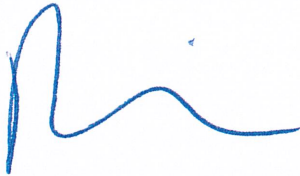
Conclusion

Tsuut'ina disagrees with the Agency's determination that the Proponent's responses to the Agency's IRs and Gap IRs are sufficient. In Tsuut'ina's view, there remain significant deficiencies in the information provided by the Proponent to date. Many of the concerns raised by Tsuut'ina throughout the review process remain unaddressed. In particular, there are significant deficiencies in relation to the ability of the groundwater model developed by the Proponent to predict impacts on the reserve, Project impacts on elk and how the Project would interact with upstream works to potentially increase flood risk to the reserve. In addition, serious deficiencies remain in relation to the assessment of Project impacts on Tsuut'ina Aboriginal and treaty rights. As a result of these and other shortcomings in the information provided by the Proponent, the Agency does not have the information necessary to assess Project impacts on Tsuut'ina.

It would be inappropriate for the Agency to proceed to preparation of the environmental assessment report until the deficiencies in the EIS discussed above and in the enclosed documents have been addressed. We request that the Agency work in meaningful consultation with Tsuut'ina to develop further information requests in order to ensure that the Agency and Tsuut'ina have the information required to fully understand Project impacts on Tsuut'ina.

Yours truly,

MANDELL PINDER LLP



Peter Millerd

Enclosures

cc. Violet Meguinis, Tsuut'ina (vmeguinis@tsuutina.com)
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October 17th, 2019

VIA EMAIL: andre.tremblay@gov.ab.ca

Alberta Transportation
3rd Floor, 4999 - 98 Avenue
Edmonton, Alberta T6B 2X3

Attention: Andre Tremblay, Deputy Minister of Transportation

Danitada Mr. Tremblay:

Re: Springbank Off-Stream Reservoir Project (the Project)

I write on behalf of the Tsuut'ina Nation to follow-up on the meeting regarding the Project held between our governments on September 17, 2019.

We wish to thank you for meeting with us to discuss the Project. As you know, we have serious concerns with the Project and how it will impact our lands, waters and way of life. In particular, as you heard in the course of our meeting, we are concerned about how the Project would impact Tsuut'ina rights and groundwater on Tsuut'ina lands, and about flood risk vulnerability in the Redwood Meadows area.

Tsuut'ina Rights

Tsuut'ina citizens hold constitutionally-protected Aboriginal rights as well as Treaty 7 rights and inherent rights. Tsuut'ina rights depend upon the lands, waters and resources in our traditional territory, which we rely on to maintain our livelihoods, language, culture and community. The Project is located within four hundred metres of our reserve, in an area well within our traditional territory. As a result, the Project's impacts on our rights is a matter of serious concern to our citizens.

The environmental assessment materials filed by Alberta Transportation in the provincial and federal review processes fail to provide an accurate picture of Project impacts on Tsuut'ina rights. Alberta Transportation's assessment of Project impacts on Tsuut'ina rights is not consistent with the methodology articulated in the letter from the Canadian Environmental Assessment Agency to the Frontier Oil Sands Mine Joint Review Panel of May 25, 2019 (the "Frontier Methodology"), which the Agency referred to in its information requests to Alberta Transportation and which clearly informs those information requests. Alberta Transportation's assessment inappropriately seeks to ascertain Project impacts on rights by reference to biophysical indicators and fails to incorporate information from Tsuut'ina citizens, including the "Tsuut'ina Traditional Land Use Report for the Proposed Springbank Off-Stream Reservoir Project," which Tsuut'ina provided to

Alberta Transportation on April 12, 2018. In addition, Alberta Transportation's assessment of Project effects on Tsuut'ina rights fails to meaningfully incorporate Tsuut'ina perspectives regarding our rights, the role they play in Tsuut'ina culture, the conditions that support their exercise, the current challenges faced due to cumulative impacts, or how the Project will affect Tsuut'ina rights and the culture and way of life that those rights support.

We wish to reiterate our request that Alberta Transportation assess impacts on Tsuut'ina rights in a manner consistent with the Frontier Methodology. In particular, we ask that Alberta Transportation engage with Tsuut'ina to ascertain our perspectives regarding our rights and Project impacts on our rights before responding to the follow-up information requests issued by the Canadian Environmental Assessment Agency on August 6, 2019, many of which specifically call for engagement with Indigenous groups in a manner consistent with the Frontier Methodology.

Groundwater Data Collection

Tsuut'ina Nation is very concerned about Project impacts on groundwater on Tsuut'ina lands. We understand that Alberta Transportation is relying upon a model developed by Stantec to predict how the Project will affect groundwater on Tsuut'ina lands. In order to determine the extent to which that model accurately reflects groundwater behaviour on Tsuut'ina lands, it must be calibrated based on groundwater data from those lands. As we heard on September 17, while Alberta Transportation has installed a number of monitoring wells within the Project footprint, no such wells have been installed on Tsuut'ina lands. Instead, the model relies upon historical domestic well data obtained from the Prairie Farm Rehabilitation Administration and the Alberta Water Well Information Database to calibrate model predictions in relation to Tsuut'ina lands.

We strongly disagree that historical well data can be relied upon to calibrate the groundwater model. Water level data from historical domestic well records is unverifiable and often inaccurate. Moreover, historical well data is static and does not allow for monitoring, including during Project construction and operation, which requires dedicated monitoring wells. If the Project is to go ahead, this kind of monitoring will be essential to understand and respond to Project effects on groundwater, particularly given the difficulty of modeling groundwater behaviour in bedrock.

Without monitoring wells on Tsuut'ina lands, Alberta Transportation is effectively taking a "trust us" approach, asking Tsuut'ina to take, on faith, that the Project will not have significant adverse effects on Tsuut'ina's groundwater. This is not a reasonable request to an independent level of government. It is particularly inappropriate given the history of Crown-Indigenous relations in Canada, which has been plagued by paternalistic approaches to Indigenous governance and breaches of trust by the Crown to the detriment of Indigenous peoples.

Tsuut'ina has repeatedly requested that Alberta Transportation fund the installation of dedicated monitoring wells on Tsuut'ina lands, a request that we reiterated at our September 17 meeting. This reasonable request represents a minimum requirement for the accurate assessment of Project effects on Tsuut'ina's groundwater. We understand that a monitoring well drilling program could be designed and implemented relatively quickly at modest expense, particular in the context of the cost of the Project. To-date Alberta Transportation has not explained its refusal to fund a groundwater monitoring well program on Tsuut'ina lands or to enter into discussions with Tsuut'ina regarding the scope, cost and timeline for such a program.

Flood Mitigation

The purpose of the Project is to protect downstream infrastructure, water courses and communities, namely Calgary and Rocky View County, from damage caused by flood events. The Project would not prevent flooding on Tsuut'ina lands and, in fact, when combined with the Bragg Creek Flood Mitigation Project, will increase the risk of flooding on Tsuut'ina lands. The area of the Tsuut'ina reserve known as Redwood Meadows, which is located adjacent to the section of the Elbow River between the Project and the Bragg Creek Flood Mitigation Project, is subject to a particularly high risk of flooding and was badly damaged by flooding in 2013. If those two projects are built, Redwood Meadows will be the only lands in the Calgary area without protection from high water in the Elbow River.

In July of 2018, Tsuut'ina retained Aquatic Resources Management Ltd. ("Aquatic") to prepare an assessment of flood risk to Redwood Meadows and examine potential mitigation measures. The first phase of that work, a desktop and modeling exercise completed in September of 2018, predicts devastating damage to Redwoods Meadows in the event of a flood on the Elbow River. A second phase of this work is required in order to collect data to verify the modeling and refine mitigation measure design and costing. In our meeting of September 17, 2019, representatives from Aquatic explained why this work is needed and Tsuut'ina reiterated its request that Alberta Transportation fully fund the second phase of Aquatic's work. Completing this study is an important pre-requisite to understanding and addressing flood protection for Redwood Meadows. Once this work is complete, Alberta Transportation must engage with Tsuut'ina on the issue of appropriate flood mitigation measures to protect Redwood Meadows.

In summary, we wish to remind you of the following requests made to Alberta Transportation, all of which remain outstanding. Tsuut'ina requests that:

Alberta Transportation commit to assess impacts on Tsuut'ina rights in a manner consistent with the Frontier Methodology and, in particular, engage with Tsuut'ina to ascertain Tsuut'ina's perspectives regarding our rights and Project impacts on our rights before responding to the follow-up information requests issued by the Agency on August 6, 2019;

Alberta Transportation commit to enter into discussions with Tsuut'ina regarding the design of a program to establish groundwater monitoring wells on Tsuut'ina lands funded by Alberta Transportation, with a view to reaching agreement regarding the implementation of such a program; and

Alberta Transportation commit to fund the second phase of work described by Aquatic in its letter to Tsuut'ina of March 19, 2019, and, once that work is complete, to engage with Tsuut'ina on the issue of appropriate flood mitigation measures to protect Redwood Meadows.

As explained above, these requests are intended to enable Tsuut'ina to understand and address the effects of the Project on our land, people and culture. We hope you understand that the Tsuut'ina

Nation cannot consent to the Project without an adequate understanding of the risks it presents to our citizens and that doing so would not be responsible governance.

While we are grateful for the opportunity to meet with you and your staff on September 17 to explain our concerns and articulate our needs, it is not enough for Alberta Transportation to listen to our concerns. Meaningful consultation requires a dialogue, which, in these circumstances includes a timely response to our requests, most of which have been outstanding for many months. Accordingly, we ask that you provide us with a response to these requests by no later than **October 25, 2019**.

While we appreciate the importance of providing additional flood protection for the City of Calgary, that protection cannot come at the expense of Tsuut'ina land, people and culture. Tsuut'ina is committed to continuing to work constructively with Alberta Transportation to gain an accurate understanding of Project impacts on the Tsuut'ina Nation and, where possible, to design and implement measures to avoid and mitigate those impacts so that, if it proceeds, the Project does so in a way that preserves Tsuut'ina lands and culture for future generations.

We look forward to hearing from you.

Siiyisgaas,



Vincent Crowchild, Tsuut'ina Nation Councilor



Lyle Dodginghorse, Tsuut'ina Nation Councilor

- cc. Matthew Hebert, Alberta Transportation (matthew.hebert@gov.ab.ca)
Crystal Damer, Alberta Transportation (Crystal.Damer@gov.ab.ca)
Violet Meguinis, Tsuut'ina (vmeguinis@tsuutina.com)
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Table 1 - HYDROGEOLOGY – JANUARY 2020

Tsuut'ina's 2018 Comment #	Comment Summary	Comment sufficiently forwarded as IR by IAAC to Proponent in May 2018 IR Packages #1, #2, or #3 (y/n)?	If IAAC adequately forwarded the concern, did the Proponent provide an adequate response in its June 2019 Responses (y/n)?	If the Proponent did not provide an adequate response or if IAAC did not ask the question in the first set of IRs, did IAAC forward Tsuut'ina's concerns in its IR Gaps Information Request to the Proponent in August 2019 (y/n)?	If IAAC did forward the outstanding concern again in the IR Gaps packages, did the Proponent provide an adequate response in its Gaps responses provided in November/December 2019 (y/n)?	Opinion: has the Proponent provided enough information and/or mitigation to allay Tsuut'ina's concerns.	If NO, what WAS outstanding? (REPLACE THIS WITH CURRENT FINDINGS)
Hydrogeology #01	Groundwater model fails to predict potential effects on Tsuut'ina IR 145. IR request to move southern boundary to include Tsuut'ina lands.	Yes	Yes				
Hydrogeology #02	Groundwater conditions on Tsuut'ina land have not been characterized. Please require the Proponent to install monitoring wells on Tsuut'ina IR 145 that are representative of Tsuut'ina members' private water wells and use the hydraulic head data from these monitoring wells to calibrate the Numerical Groundwater model.	Yes	No	Yes	The Proponent partially addressed this concern in their response to IAAC IR3-15 in that they acknowledge monitoring wells called "Tier 3" may be installed outside the LSA (pending approval by property owner). Some of these Tier 3 wells are located between the Project and Tsuut'ina Lands. The Proponent also discusses a Draft Monitoring Plan that proposes additional "monitoring locations" that "could be located either between the PDA and Tsuut'ina Nation Reserve, or on the reserve" and the Proponent also states they are "currently consulting with Tsuut'ina Nation regarding groundwater monitoring specific to their reserve lands". In general, the Proponent seems to be saying they are considering installing monitoring wells on Tsuut'ina lands, but they do not make any commitments to do so.	No. Specific locations on Tsuut'ina lands must be identified in order for the Nation to review and comment. Further a commitment to install dedicated monitoring wells must be made by the Proponent. Currently the wording in this response indicates they may still opt to use existing private water wells on Tsuut'ina lands, which is not appropriate for this application. A separate monitoring program of Tsuut'ina private water wells to assess baseline conditions and monitor for impacts during construction and operations must also be developed as a separate mitigation.	
Hydrogeology #03	Acknowledging that it is impossible to model the potential effects on Tsuut'ina water wells of fractured flow into the dry diversion channel, please require the Proponent to conduct a water well survey of Tsuut'ina private water wells and monitor water levels, prior to and during construction and during dry operations until groundwater under project conditions reaches static conditions and well interference can be assessed.	Yes	No	Yes	No	The Proponent did not address IAAC IR3-15 where IAAC asked the groundwater monitoring program be updated to include "a specific section regarding follow-up and monitoring for groundwater on Tsuut'ina IR 145. Include surveys and monitoring of Tsuut'ina's private water wells for water levels, prior to and during construction and during dry operations until groundwater under Project conditions reaches static conditions and well interference can be assessed" The monitoring plan has not been updated. In addition, the Proponents response seems to confuse this request with the request to install dedicated monitoring wells on Tsuut'ina lands. To be clear, BOTH are required and serve different purposes. The monitoring wells are required because they are the only accurate method of measuring potential effects of the Project on the aquifers relied upon by Tsuut'ina. They are also required to calibrate the groundwater model being used to predict effects of the project. Monitoring of Tsuut'ina's private water wells is required to monitor effects at the specific points of use of groundwater on Reserve. This is needed because groundwater flow, particularly in fractured bedrock, is difficult to accurately quantify and there is uncertainty in the measurements made at the monitoring wells. This warrants the	

Table 1 - HYDROGEOLOGY – JANUARY 2020

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						added precaution of monitoring and protecting the actual wells used by Tsuut'ina members.	
Hydrogeology #04	Southern boundary and boundary conditions of the numerical model isn't appropriate to predict effects on Tsuut'ina lands. Please require the Proponent to move the southern boundary of the Numerical Groundwater model to a location where the groundwater boundary conditions can be more reliably estimated.	Yes	Yes				
Hydrogeology #05	The southern boundary of the Numerical Groundwater model doesn't predict groundwater hydraulic heads under existing conditions, it can't predict potential effects due to the project. Please require the Proponent to first reconstruct and adequately calibrate the model and then re-simulate project effects on groundwater.	No	No	No	No.	The Proponent continues to omit any discussion of calibrating the groundwater model using monitoring wells near the model boundaries on Tsuut'ina lands. The outstanding request articulated in the next column remains.	We requested the Proponent adequately calibrate the new groundwater model using water levels from monitoring wells on Tsuut'ina land. This was not adequately communicated by IAAC and not addressed by the Proponent.
Hydrogeology #06	There appears to be a misunderstanding of the nature of the Elbow River alluvial aquifer, however it is coincident with the southern boundary of the numerical model. Please move the southern boundary.	Yes	Yes				
Hydrogeology #07	Effects from construction dewatering not quantitatively assessed. Please require the Proponent to run a Numerical Groundwater model simulation (after revisions recommended above) that predicts potential effects on groundwater from construction dewatering.	Yes	No	No	No	The Proponent has not provided any additional commentary on this concern. The outstanding request articulated in the next column remains.	Dedicated monitoring wells must be drilled on Tsuut'ina land to properly verify and calibrate the Groundwater model
Hydrogeology #08	Tsuut'ina First Nation have stated they are concerned about the project's effect on	Yes	No	Yes	No	The Proponent refers to the May 2019 Draft Groundwater Monitoring Plan which does not include assessing potential effect on Tsuut'ina Nations groundwater. The Proponent also states they are	

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	their groundwater. Please require the Proponent to adequately assess potential effects on Tsuut'ina Nation's groundwater.					working with Tsuut'ina to develop a groundwater monitoring program, but the program has not yet been created.	
Hydrogeology #09	Please require the Proponent to re-simulate the various flood scenarios once the Numerical Groundwater model has been reconstructed to adequately predict effects on Tsuut'ina IR 145.	Yes	Partial	No	No	No	The groundwater model has not yet been calibrated with appropriate water level data from Tsuut'ina lands. This must be done first before additional simulations can be conducted.
Hydrogeology #10	Numerical Groundwater model results contradict current understanding of Elbow River watershed.	Yes	No	No	No	No changes were made to the modelled groundwater scenarios in this most recent iteration of the Proponent's responses. The outstanding request articulated in the next column remains.	Observed flow in Elbow River aquifer does not appear to be simulated in updated groundwater model (new groundwater scenarios PPX1 and EEX1)
Hydrogeology #11	The Numerical Groundwater Model may not be accurately predicting flow near the reservoir under flood conditions, please require the Proponent to re-model the flood simulations and also conduct sensitivity analysis on the model results by introducing high permeability windows into the reservoir base.	Yes	Not clear	No	No	No changes were made to the modelled groundwater scenarios in this most recent iteration of the Proponent's responses. The outstanding request articulated in the next column remains.	The spatial distribution of the sensitivity analysis Scenario 1 (elevated K) is not well presented. It is difficult for the reviewer to understand how this sensitivity run is evaluating the model results.
Hydrogeology #12	High permeability windows in the reservoir base, along with large increase in hydraulic head when the reservoir is full, could result in contaminant transport much farther than predicted. Conduct and report the particle tracking simulation and conduct sensitivity analyses on the particle tracking using high permeable windows.	Yes	No	No	No	No	This request is outstanding,
Hydrogeology #13	The uncertainty of groundwater flow direction and velocity common in bedrock environments needs to be addressed as there are	Yes	Partial	No	No	No changes were made to the conceptual hydrostratigraphic model in this most recent iteration of the Proponent's responses. The outstanding request articulated in the next column remains.	Addressed to the extent that the Proponent states modelling fractured environments is difficult, however the Proponent did not extend this acknowledged

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	huge potential implications on private water wells completed in the fractured bedrock. Please add the bedrock heterogeneities and fractured bedrock to the Conceptual Hydrostratigraphic Framework.						limitation of the model to the monitoring program. Where uncertainty in the model exists, the monitoring program must monitor for these uncertainties. In this situation, it is reasonable to require monitoring of water levels and quality in Tsuut'ina private water wells (especially those installed in the bedrock) and in dedicated monitoring wells on Tsuut'ina lands.
Hydrogeology #14	The modelling report doesn't provide the calibrated hydraulic conductivities for each layer on the model domain.	Yes	No	Yes	Yes	Yes	This information has now been provided by AT.
Hydrogeology #15	The dates on which the water levels were collected were not provided in the initial condition description and how the 6 months of data logger water levels collected in 10 of the monitoring wells, were incorporated into the understanding of the initial conditions. Further, water level data for the driest period, May to October were not collected.	Yes	Yes				
Hydrogeology #16	Poor description of Boundary Conditions for each model layer.	Yes	Yes				
Hydrogeology #17	Poor description of Boundary Conditions.	Yes	No	Yes	Partial	The Proponent's response provides some additional information on the boundary conditions, however their rationale is insufficient. For example, the Proponent states "The rationale why prescribed boundary conditions are used along both the perimeter of the model domain and along intermittent streams is it is not expected that there would be significant changes to groundwater levels during the simulation period along these two boundaries. If there was an expected significant change (e.g., more than 1.5 m during the simulation period), prescribed boundary conditions would no longer be valid". the Proponent provides no concrete reasoning for why they believe there will be no changes in groundwater levels at these boundaries. Prescribed head boundaries come with the risk of failing to model effects near the model boundaries. As Tsuut'ina lands are near the southern boundary, we require the sensitivity of these prescribed head boundaries to be tested.	The IR required the following information for the Neumann boundaries which were not provided: 1. Clearly describe how these boundary conditions were verified with field data. 2. Conduct sensitivity analyses on the prescribed head boundaries.

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Hydrogeology #18	The calibration monitoring wells are clustered together in the LAA and not representative of the RAA. In the revised Numerical Groundwater model, please use monitoring wells located on Tsuut'ina IR 145, in both surficial and upper bedrock aquifers, to calibrate the model.	Yes	No	No	No	Calibrating the model using appropriate water levels from dedicated monitoring wells on Tsuut'ina land is a critical request to ensure the model is adequately predicting effects to Tsuut'ina's groundwater supply. No changes were made to the updated groundwater model in this most recent iteration of the Proponent's responses. The outstanding request articulated in the next column remains.	The Proponent used some additional, publicly available, private water well data to calibrate the model, but no monitoring well data.
Hydrogeology #19	It is impossible to evaluate the Numerical Groundwater model results without uncertainty analysis	Yes	No	No	No	No changes were made to the updated groundwater model in this most recent iteration of the Proponent's responses. The outstanding request articulated in the next column remains.	Some sensitivity analyses were provided, however, the specifics of the model, such as how the model K values align with observed geology and measured K values is still not clear, so it is difficult to evaluate both the model and the sensitivity runs. Further, sensitivity of the model to K values during dry conditions, particularly around the diversion channel is imperative for Tsuut'ina to understand the risk of impact and this wasn't completed.

Table 2 - WILDLIFE - JANUARY 2020

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Wildlife #01	Sufficient context needed to understand survey results against regional and traditional data for elk	IR2-17 a, yes	No	No	No	No	<p>Survey results against regional and traditional data have not been compiled. The Proponent reiterated that the majority of the LAA consists of low suitability habitat based on modelling but how this compares with Indigenous knowledge is not provided. Are there discrepancies or similarities and what are the implications? The relative importance of the PDA and LAA in the regional context for elk has not been described using western and traditional knowledge sources.</p> <p>Similarities or differences between wildlife habitat suitability modelling results and traditional knowledge need to be provided.</p>
Wildlife #02	Remote camera locations not provided in figure	IR2-17 c, yes	Yes and No	No	No	No	<p>The Proponent stated: "Cameras 7, 8, 9 and 10 were placed in a mixed forest habitat, Cameras 2 and 5 were placed in a broadleaf forest, Cameras 1, 3, and 4 placed in shrubland, and Camera 6 was placed near a graminoid marsh."</p> <p>Why were cameras not placed in grassland habitat given this is preferred by elk (as stated in the ratings assumptions for the elk model)?</p> <p>Clarification is needed on the exclusion of wildlife cameras in suitable elk habitat.</p>
Wildlife #03	Dominant movement patterns for elk in the area and/or seasonal movement patterns not described	IR2-17 a, yes	No	No	No	No	<p>The Proponent stated: "There are limited data available to describe dominant elk movement patterns in the RAA."</p> <p>This is the very reason the Proponent is being asked to assess the current movement patterns of elk. Otherwise how can project effects be understood, monitored or mitigated? By the same rationale, how can a magnitude rating (of moderate) be assigned to residual Project effects on elk movement if dominant movement patterns by elk are not currently understood? Further research is needed to answer this question.</p> <p>The efficacy of elk crossing the diversion channel are unknown, adding more uncertainty to the moderate magnitude rating for Project effects on elk movement. More work is needed to understand elk movements in the Project area.</p>
Wildlife #04	The suitability of a 250m buffer distance for moderate volume roads is not provided for elk.	IR2-13 a, yes	No	IR2-13b	No	No	<p>References provided indicate elk avoid areas within 200m or within 100-600m of a road, with elk stopover areas being on average 526-678m from a road and elk selecting habitat 1,500-2,000m from a road. This information does not provide clear rationale for a 250m buffer of roads for elk. If there is insufficient information available in the literature, and assumptions are being used, these should be stated.</p>
Wildlife #05	The rationale for buffering industrial developments by 500m was not described for elk	IR2-13 a, yes	No	IR2-13b	No	No	<p>Literature references are not included to justify the 500m buffer used for industrial development (especially given the lack of clarity for a 500m buffer around roads as described in previous comment). This is critical to understand the validity of the assumptions provided.</p>

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Wildlife #06	It is advisable that the RAA boundary is determined using ecological boundaries such as habitat types, watershed, topography, etc. as related to wildlife	IR2-12 a, yes	No	IR2-07	No	No	The RAA is a 15km buffer of the project area, to incorporate the average home range of the largest ranging species in the region (grizzly bear). Species specific variances in ecological conditions and boundaries have not been taken into account by using a standard 15km buffer. Boundaries appropriate for assessing impacts to Aboriginal groups were also not considered.
Wildlife #07	Why was elevation and aspect not included in the grizzly bear habitat suitability model?	IR2-13 a, yes	No	Yes, IR2-13	Yes	Yes	N/A
Wildlife #08	The rationale for buffering industrial developments by 500m was not described for grizzly bear	IR2-13 e, yes	No	Yes, IR2-13	Yes	Yes	N/A
Wildlife #09	How is the potential loss of winter ungulate range and increased fragmentation considered with reference to available scientific and traditional data?	IR2-17, no	No	No	No	No	Literature references and Aboriginal knowledge were not included to understand how the loss of winter ungulate range and increased fragmentation are expected to affect elk.
Wildlife #10	How will the loss of wildlife habitat be compensated for?	IR2-17d, yes	No	No	No	No	<p>As stated in Wildlife #10, the project is in an environmentally sensitive area, key wildlife and biodiversity zone, and environmentally significant area. A loss of winter ungulate habitat and an increase in habitat fragmentation is predicted. Habitat damage, including the sensitive fescue grassland, could occur from contaminated sediment from flood waters or debris. Migration of elk could also be adversely affected and is not well understood (see Wildlife #3).</p> <p>The Proponent states that habitat offsets were not considered because there is no provincial policy for this and elk are not a species at risk. The concern here is that the cumulative impact of numerous projects within Tsuut'ina territory that add incremental negative effects on species of cultural significance, such as elk, without compensation means that cumulative impacts are occurring without any compensation. Tsuut'ina ask that the Proponent reconsider the importance of elk in this area and consider how habitat loss could be restored and/or compensated.</p> <p>We request that the Proponent consider elk habitat restoration and offsetting of cumulative project impacts.</p>
Wildlife #11	Why does the definition of significance not include wildlife habitat and changes in biodiversity?	IR2-17, yes	No	IR2-11	No	Yes	N/A
Wildlife #12	It is difficult to understand changes in biodiversity when split across two sections of the EA (Landscape, Community and Species Diversity in Veg and Wetland vs habitat fragmentation and abundance in Wildlife and Biodiversity Sections)	N/A	No	No	No	No	The division of disciplines is a convoluted approach to EA and makes it difficult to understand holistic effects. It would be useful if an overview could be provided to understand overall effects to biodiversity.

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Wildlife #13	Seven days is a long time to wait between conducting a nest survey and clearing vegetation	Draft Wildlife Mitigation and Monitoring Plan	No	No	No	No	The Draft Wildlife Mitigation and Monitoring Plan refers to up to a 7 day delay between conducting a nest survey and clearing vegetation. A reference or rationale is needed as there is a risk of birds building a nest during that week. Rationale is requested as to why a 7 day window is given as typically a shorter time period is required.
Wildlife #14	A robust monitoring program is needed to compare data collected against predicted effects in EIA	IR2-1 c, yes	No	Yes, IR1-09	Yes	No	<p>Details on how wildlife monitoring will be undertaken with site- and species-specific mitigation measures was requested. Mitigation measures were provided in Tables 9-1 to 9-28 but the Proponent states throughout that site-specific mitigation will be undertaken "where possible". Clarification is needed as to what this means. This response is not sufficient if it implies the decision will be made at the Proponent's discretion.</p> <p>The tables also indicate that monitoring locations will be determined in consultation with regulators and First Nations for remote cameras. At a minimum, we ask that Tsuut'ina also be included in grizzly bear monitoring.</p>
Wildlife #15	An invasive plant management plan is not referenced in the EIA	IR2-21 c, yes	No	No	No	No	A reference to the <i>Alberta Weed Control Act</i> was given but specific mitigation measures were requested to prevent and control invasive species for all phases of the Project. This was not provided.
Wildlife #16	Rationale is needed for splitting the effects assessment into two parts (risk of minimizing significance of effects by splitting into two stages)	N/A	No	No	No	No	Scoping that obscures connections between elements of a project is contrary to best practices. While it may be too late to require a wholesale restructuring of the EIS, Tsuut'ina's comment stands that initial scoping decisions made without Tsuut'ina's participation have resulted in an EIS that does not make it possible to understand effects to Tsuut'ina's interests.
Wildlife #17	Significance is provided at a high level for wildlife - the concern is that an effect may be significant for an individual species but not reflected in the combined assessment	IR2-11 b, yes	Yes				
Wildlife #18	There is no discussion of cumulative effects on wildlife and biodiversity	N/A	No				
Wildlife #19	The TUS reports were not all included in the EIA and those that were incorporated were not fully integrated	IR2-11 b, yes IR2-13 c, yes IR2-17, yes	No	IR2-06 IR2-11	No	No	<p>IR2-06: ABT provides tables of responses to Aboriginal group questions but the intent here is to see the effects assessment conducted in a way where Indigenous knowledge is considered throughout the preparation of the EIA. This is still outstanding.</p> <p>IR2-11: Indigenous knowledge was not meaningfully included in wildlife habitat suitability models or assessment of residual effects. This is critical to meeting the EIS Guideline which requires the Proponent to assess the effects to the environment on Indigenous people. ABT conducted an effects assessment for species of cultural importance and states that the conclusions remain unchanged and with no species identified as having a significance determination. However, rationale for this conclusion is still missing.</p>

Table 3 - CUMULATIVE EFFECTS – JANUARY 2020

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Cumulative Effects IR#1 (also Hydrology IR#2)	Insufficient consideration of upstream project effects as inputs to the project model, leading to the potential that assumptions regarding the river entering the project area may be inaccurate. These potential inaccuracies render predictions made by the project model unreliable for decision-making.	Yes (IR3-41)	No	Partial (Gaps from IR3-41): IAAC has requested that the Proponent assess how cumulative effects to hydrology, surface water quality, and aquatic ecology interact with other VCs. The supplemental information request has not requested that the Proponent consider how effects of proposed upstream infrastructure will affect hydrology, surface water quality, and aquatic ecology, meaning that there remain gaps in the inputs to assessing effects of changes to the aquatic parameters on other VCs.	No. The Proponent appears not to have provided a response to Conformity Gap IR3-41.	See comment associated with Tsuut'ina Question Cumulative Effects IR#2	
Cumulative Effects IR#2 (Also Hydrology IR#4)	Failure of upstream projects under flood conditions has not been assessed in the Springbank EIS Assessment of Cumulative Effects.	No	No	No	No	No	<p>IAAC has not asked the Proponent to consider the potential failure of upstream flood control structures under flood conditions on the Project. As other so-called "Black Swan events" like the Fukushima disaster – which are obvious in hindsight – suggest, cascading effects need to be considered. Given the expectation that climate change will result in larger storm and flood events, it is short-sighted not to consider the possibility that upstream flood management works will not work as designed and, in turn, compromise SR-1's integrity or efficacy.</p> <p>Tsuut'ina remains extremely concerned about this issue given that is directly within the path of a potential infrastructure failure and therefore reiterates its request that failure of upstream infrastructure be assessed as a potential accident or malfunction.</p>
Cumulative Effects IR#3 (also Federal Lands IR#1)	The Study Boundaries do not fully encompass federal lands affected by the project. IR145 must be considered in its entirety.	Yes (IR2-05)	No	<p>Yes:</p> <p>Gaps from IR2-01 – Impacts to Rights</p> <p>Gaps from IR2-05 – Federal Lands</p> <p>Gaps from IR2-07 – Effects on TLRU</p> <p>Gaps from IR3-01 – Climate change</p>	No	No. It is still unclear what effects the project will have on the functioning unit and community that is IR145.	<p>The Proponent has suggested the failure to provide a meaningful answer to IAAC's question stems from Tsuut'ina's failure to provide "land management plans and priorities from the Tsuut'ina Nation (for Reserve No. 145)...".</p> <p>Notwithstanding the attempt to blame Tsuut'ina, which in itself is inappropriate, the response indicates that the Proponent has missed the point of the initial question. Specifically, Tsuut'ina and the Crown need a fulsome assessment of project effects on the full geographic extent of the federal lands affected by the project. As IR145 represents a single contiguous unit, effects on the entire reserve must be assessed.</p> <p>Further, rather than complete a fulsome assessment as requested, the Proponent has used a peculiarly circular logic to suggest that because no effects to VCs are predicted outside of federal lands (assumed to be the area surrounding IR145), then no effects will be experienced inside federal lands (i.e., on IR145). No evidence has been provided to support this assertion.</p> <p>As noted before, by failing to make an integrative statement about the full suite of effects on Tsuut'ina's lands and values – that is, to extend the boundaries of study areas for all VCs to include IR145 – a full picture of the interactions among effects and a picture of related, reinforcing, or synergistic effects is obscured. This makes it difficult, if not impossible, for the Crown to understand and assess potential effects on federal lands that in turn may affect rights and title. More importantly, it makes it extremely difficult, if not impossible, for Tsuut'ina to understand and assess effects to their lands.</p> <p>Tsuut'ina reiterates its need for a proper effects assessment to be completed that encompasses the entirety of IR145.</p>