JOINT REVIEW PANEL PUBLIC HEARING

IN THE MATTER OF Application Nos. 1844520, 1902073, 001-00403427, 001-00403428, 001-00403429, 001-00403430, 001-00403431, MSL160757, MSL160758, and LOC160842 to the Alberta Energy Regulator

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GRASSY MOUNTAIN COAL PROJECT - BENGA MINING LIMITED

VOLUME 22

VIA REMOTE VIDEO

November 23, 2020

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S. Frank	For Oldman Watershed Council
A. Hurly	
C. Forster, CSR(A)	Official Court Reporter

(PROCEEDINGS COMMENCED AT 9:01 AM)

Discussion

THE CHAIR: Good morning, everyone.

Just a reminder that live audio and video streams and video recordings of this proceeding are available to the public through the AER's website and YouTube.

Anyone in the virtual hearing room with their camera or microphone turned on will be captured, and images and recordings of you and your surroundings will be broadcast to a publicly available YouTube video. If you have concerns about this, please contact counsel well in advance of the time you're scheduled to participate to explain your concerns. We will make best efforts to try and accommodate your concerns considering the need for an open and transparent public process.

I have one preliminary matter, and then I will see if there are any others. So on Saturday we talked about the possibility of combining the air and wildlife and health sections into one -- one larger session rather than two separate sessions. I invited the participants to provide any comments on whether they had any concerns about that. We have heard from a number of the participants, and so far no concerns have been raised.

The Panel would like to make a decision on this probably by midday today so we can issue a revised schedule. So if anyone hasn't spoken to this yet and you do have concerns, let us know. Otherwise, we will probably go ahead to combine the two sessions.

And just for clarity, by combining the two sessions, our approach would be just to combine the

times for direct evidence and cross-examination for each of the participants for those two sessions. And this isn't a commitment that we expect to finish the hearing by the end of this week. Our feeling is that by -- with the amount of material we still have to go through, it's quite likely we'll need at least Monday next week, and possibly into Tuesday, unless things go, you know, much quicker than anticipated.

So does anybody want to speak to that issue now before I look for other preliminary matters?

MR. DRUMMOND: Thank you, Mr. Chair. It's Robert Drummond, Justice Canada.

I did not send a response, but we concur that there's certain practicality in combining them and have no concerns with doing so. Thank you.

THE CHAIR: Thank you, Mr. Drummond.

Anyone else?

Okay. Hearing nothing further on that matter, are there any other preliminary matters we need to deal with?

Hearing none, we are going to continue with direct evidence from the other participants today on the water topic area. And first up is the Government of Canada.

So, Mr. Drummond.

MR. DRUMMOND: Thank you, Mr. Chair.

First thing, we would need to swear and affirm a

number of witnesses. There are 20 Government of Canada witnesses for this subject area. We've provided a list to the court reporter in advance, which I hope would make things go a little bit smoother. So I just ask that the witnesses be sworn or affirmed at this time.

THE CHAIR: Okay. Thank you. Madam Court Reporter, if you have a list and you are ready to proceed.

THE COURT REPORTER: Thank you.

STEPHANIE MARTENS, TOM HOGGARTH, MARTYN CURTIS, MELANIE TOYNE, EVA ENDERS, JODY SMALL, AIMEE ZWEIG, BRANDI MOGGE, LAURA PHALEN, ROBYN KUTZ, KEN GLASBERGEN, PETER JOHN THOMPSON, BEN PLUMB, MARIE-CLAUDE SAUVÉ, JESSICA COULSON, ASHLEY GILLESPIE, MIROSLAV NASTEV, MICHAEL TAKEDA, Affirmed

MARGARET FAIRBAIRN, ANNE WILSON, Sworn

MR. DRUMMOND: I believe that's everyone, Madam Court Reporter.

THE CHAIR: Go ahead, Mr. Drummond.

Direct Evidence of Government of Canada

(Water, including surface and groundwater management, quantity and quality, selenium management and aquatic resources, including fish and fish habitat and fish species at risk)

MR. DRUMMOND: Ms. Martens, I believe you are going to present some direct evidence on behalf of the

Department and Fisheries and Oceans.

A MS. MARTENS: I am. Thank you.

Can everyone hear me okay?

Q Yes.

A MS. MARTENS: Good morning. Good morning, Panel Chair, Panel Members, hearing participants, and members of the public. My name is Stephanie Martens, and I am a regional manager for DFO's fish and fish habitat protection program in the Ontario and Prairie Region. I will be responsible for coordinating DFO's team of experts and will also act as the Government of Canada's panel lead for the water session.

I will be giving an overview of the submission to the Panel provided by DFO. Following that, Environment and Climate Change Canada and Natural Resources Canada will both give presentations.

But before getting started, we would like to acknowledge that the project is located on Treaty 7 lands in the traditional territories of the Piikani, Kainai, Siksika, Tsuut'ina, and Stoney Nakoda Nations as well as the traditional territories for the Ktunaxa Nation, Secwepemc Nation, and the Métis people of Southern Alberta.

I would first like to take a few minutes to describe DFO's role in the environmental assessment process. DFO has participated as a federal authority

in the environmental assessment process for this project under the Canadian Environmental Assessment Act 2012 or SEIA 2012 since it began in 2015.

DFO's role as a federal authority under Section 20 of SEIA 2012 is to provide specialist or expert information and knowledge within our mandate to the Panel to assist in the assessment of the project. This information includes potential environmental effects of the project on fish and fish habitat and aquatic species at risk.

In addition to DFO's responsibilities under SEIA 2012, DFO's minister is the -- is responsible for the administration and enforcement of the Fisheries Act and regulations thereunder. The amended Fisheries Act received royal assent and became law on June 21st, 2019. This modernized act restores protections lost in the 2012 changes to the Act and incorporates modern safeguards. The Act improves the protection of Canadian fisheries and their ecosystems and recognizes that decisions can be guided by the principles of sustainability, precaution, and ecosystem management.

DFO's responsible for the administration of the fish and fish habitat protection provisions of the Fisheries Act, while the pollution prevention provisions are administered by -- and enforced by Environment and Climate Change Canada, including

Section 36(3) related to the deposit of a deleterious substance.

The fish and fish habitat protection provisions include a legal framework to regulate impacts to fish and fish habitat associated with projects. The provisions prohibit works, undertakings, or activities that cause the death of fish by means other than fishing and the harmful alteration, disruption, or destruction of fish habitat unless otherwise authorized by the minister. The information required to apply for a ministerial authorization is described in the authorization regulations and includes an offsetting plan, among other requirements.

Before recommending the issuance of an authorization, the minister must consider the eight factors set out in subsection 34.11 of the Act. This includes, among others, fisheries management objectives, cumulative effects, and any other factors that the minister considers relevant.

DFO's responsibilities under the fish and fish habitat protection provisions are linked closely to DFO's responsibilities under the Species at Risk Act. The Minister of Fisheries and Oceans Canada is the competent minister for aquatic species at risk and has responsibilities ranging from the development of recovery strategy and action plans to assessing

applications for permits for activities affecting listed wildlife species, any part of its critical habitat, or the residences of individuals.

The Species at Risk Act prohibits killing, harming, harassing, capturing, or taking of a species; damaging or destroying the residence of one or more individuals; and the destruction of critical habitat if a species is listed as endangered, threatened, extirpated -- or extirpated on Schedule 1 of the Species at Risk Act.

However, the Species at Risk Act does have provisions to permit these activities under Section 73 provided it is one of the following activities: Scientific research related to the conservation of the species conducted by qualified persons, the activity benefits the species or is required to enhance its chance of survival in the wild, or affecting the species is incidental to the carrying out of the activity.

Projects such as the Grassy Mountain Coal Project fall under the third category with the activity affecting the species being incidental to the carrying out of the activity.

Additionally, prior to the issuing of the permit, the minister must also be satisfied that the subsection 73(3), preconditions of the Species at Risk

Act have been met, including that the activity will not jeopardize the survival or recovery of the species. Measures to offset can be taken to assist in meeting those preconditions so long as the activity will not jeopardize the survival and recovery of a species. Measures to offset should not be relied on exclusively, and there are circumstances in which offsetting is not appropriate, such as where critical habitat is irreplaceable or there is a high probability of failure or uncertainty.

DFO's offsetting policy also applies in a species at risk context but with additional considerations required to account for the sensitivity of the species being impacted. These include but are not limited to: The contribution of the offsetting to the attainment of population and distribution objectives described in the recovery strategy or action plan and offsetting being implemented and confirmed functioning prior to impacts occurring. These key pieces of legislation guided DFO's scope of review of the project as a federal authority.

I will now move on to outline the status and protection of westslope cutthroat trout as it relates to the project.

The proposed Grassy Mountain Coal Project will result in the destruction and alteration of large

amounts of aquatic and riparian habitat in both Blairmore and Gold Creeks, which are both home to westslope cutthroat trout. Westslope cutthroat trout are listed as threatened under Schedule 1 of the Species at Risk Act.

Westslope cutthroat trout populations exhibiting greater than or equal to 99 percent genetic purity are afforded protection under the Species at Risk Act, while near pure populations exhibiting greater than 1 percent introgression are not. These near pure populations can still be of high value to support the recovery objective of identifying opportunities to help recover genetically pure and near genetically pure popu -- strains of westslope cutthroat trout.

This supports the overall population and distribution objective to protect and maintain the existing distribution of greater than or equal to 99 percent genetically pure populations of westslope cutthroat trout and re-establish genetically pure populations to self-sustaining levels within the original distribution of the species in the Saskatchewan-Nelson river watersheds in Alberta.

There are 51 known pure populations of westslope cutthroat trout in Alberta outside of national parks. The Gold Creek population is pure, and Gold Creek and its tributaries are designated critical habitat

required for the survival and recovery of the species.

The federal Recovery Strategy and Action Plan, which I will refer to as the "RSAP", was updated in December of 2019. It included an updated extent of critical habitat, including the primary riparian zone around watercourses, as well as headwater areas that contribute to westslope cutthroat trout habitat. The Gold Creek population is one of ten populations that is estimated to have enough individuals to be considered viable as per the committee on the status of endangered wildlife in Canada, or COSEWIC, 2016 assessment.

In addition, Alberta's Fish Sustainability Index tool identifies the adult population in Gold Creek to be low, with a very high need for habitat protection. Despite this low adult density rating in Gold Creek, it is higher than the majority of populations, which are rated as having very low adult densities.

The population of westslope cutthroat trout in Blairmore Creek is near pure and is therefore not afforded protection under the Species at Risk Act. The habitat in Blairmore Creek is not designated as critical.

However, as I had alluded to earlier regarding near pure populations, Blairmore Creek is a candidate location to support recovery and population and distribution objectives. For this reason, DFO

considers the RSAP a fisheries management objective for Blairmore Creek, and it is therefore a high priority for protection under the Fisheries Act.

I will now summarize DFO's technical submission, giving a brief overview of our recommendations. DFO's technical submission presents our assessment of the proponent's EIS and predictions of effects on westslope cutthroat trout, taking into consideration the various rounds of technical information requests.

The proponent identified pathways of effects that are generally aligned with DFO's guidance. The determination of significance framework the proponent applied to those pathways of effects, while appropriate in a more typical setting, does not reflect the sensitivity of isolated populations of westslope cutthroat trout with unique genetic pools that are critical to the species' survival and recovery as a whole.

The pathways of effects were well defined by the proponent, but the methods, analysis, and resulting residual effects conclusions for many of these pathways have limitations that likely underestimate the effects to westslope cutthroat trout.

I will now summarize those pathways. DFO's 1998 blasting guidelines may be an acceptable approach to mitigate effects of blasting in certain situations, and

the proponent has indicated they will meet this guideline. However, new research has been conducted since the development of those guidelines that includes considerations for factors such as local habitat conditions and life-stage affected.

DFO has recommended the development of a more robust assessment and site-specific mitigation and monitoring plan for the effects of blasting that adequately considers the species' sensitivity and the potential for non-lethal injury, which is prohibited under Section 32 of the Species at Risk Act.

Westslope cutthroat trout are a cold-water species, sensitive to changes in stream temperature. The proponent's model for predicting changes in stream temperature appears to have used primarily changes in flow as a predictor of temperature change. While this is a valid pathway, other relevant variables, such as riparian habitat loss, upland vegetation loss, and the influence of the sedimentation ponds, do not appear to be explicitly included, despite recognition by the proponent that these activities do have the potential to alter water temperature. DFO recommended the proponent undertake updated modelling at an appropriate scale relative to westslope cutthroat trout habitat and update their residual effects analysis.

Further, the proponent indicates that inclusion of

stream temperature monitoring in the Aquatics Monitoring Plan, or AMP, will support early identification of changes and enable them to respond with appropriate mitigation. However, it is unclear at what temperature the proponent would employ mitigation. DFO is uncertain what mitigation measures could feasibly adjust stream temperature, particularly when the cause of the change may be from numerous factors over a potentially large spatial scale.

There is no -- sorry, the conclusion of no residual effects to isolated populations of westslope cutthroat trout due to the loss of invertebrate food drift and fishless tributaries was not well supported by the literature or the proponent's data and is not aligned with the sensitive nature of the populations in habitat. DFO made a recommendation to perform a more robust analysis of effects from invertebrate food drift losses.

The proponent characterized changes in surface flows using a water balance and load model that allows the modeller to incorporate a suite of hydrologic processes. In this case, considerable uncertainty exists when relying on the model to adequately assess potential hydrologic impacts to westslope cutthroat trout due to the lack of incorporation of a representative range of monthly and seasonal streamflow

variability owing to the use of annual precipitation inputs and monthly distribution coefficients.

Additionally, the model did not consider natural storage within the system, and significant hydrologic components such as snowpack and evapotranspiration were not considered due to the annual scale at which the model operates. Overall, the model has a high level of uncertainty on a monthly basis, particularly during low-flow conditions when westslope cutthroat trout would be sensitive to flow and temperature changes. The model fails to adequately characterize natural hydrologic conditions in Gold and Blairmore creeks. The approach does not have the resolution to capture seasonal variation nor to understand impacts at a mesohabitat scale that matches the fish habitat assessments.

DFO made recommendations to address modelling uncertainty, define the low-flow threshold required to maintain habitat functionality, request a mitigation strategy for augmentation during low flow, and to include a validation of the habitat suitability predictions in the AMP. Subsequently, the residual effects analysis for hydrology effects should be updated.

In addition to surface water impacts, there are also predicted alterations to groundwater flow that

would affect existing base-flow regimes in Blairmore and Gold Creeks. DFO acknowledges that the proponent indicated that the reduction in base flows will be offset by discharges of water from sedimentation ponds.

In Blairmore Creek, the proponent has indicated that discharges from the west sedimentation pond and the plant site sedimentation pond will result in an overall increase in total streamflows during and after the life of mine.

In the case of Gold Creek, the proponent has indicated that water will be discharged from the east sedimentation pond and the northeast sedimentation pond, though a net loss of flow is anticipated in the reaches adjacent to the mine footprint.

Based on our understanding of the hydrogeologic assessment and supporting groundwater modelling, the limitations of the numerical groundwater model leaves a high level of uncertainty associated with base-flow predictions and the potential impact on westslope cutthroat trout.

There are outstanding concerns with long-term base flow in Blairmore Creek as the areas predicted to be most severely impacted by base-flow reductions are located upstream of the saturated backfill zone outfill point. That is intended to be the sole mitigation measure beyond the end of mine.

Additionally, we have outstanding concerns regarding end-of-pipe flow augmentation as a surrogate for groundwater discharge.

Changes to sediment supply have been identified for both Gold and Blairmore Creeks. To clarify, DFO has not implied that upstream sediment supply will disappear but that the proponent has not sufficiently assessed potential impacts associated with changes in sediment supply due to loss of tributaries.

DFO has recommended further baseline data collection in order to support an assessment of potential impacts to westslope cutthroat trout and a subsequent update of the effects assessment, mitigation, and offsetting plans as required.

DFO has also recommended the sediment transport analysis incorporate hydrologic changes over the entire flow regime to assess impacts to channel maintenance flows, transport of spawning gravel, and impacts to channel morphology and sediment transport into post-closure conditions. These results should inform an updated effects assessment, mitigation, and offsetting plans, if required.

Direct overprinting of large amounts of fish habitat and critical habitat in Blairmore and Gold Creeks respectively is anticipated. In an effort to determine residual effects from the loss of riparian

habitat, the proponent rated riparian areas based on quality and only accounted for impacts to some medium- and high-quality riparian areas. Given the importance of riparian habitat for providing food sources and mitigating stream temperature increases as well as its recent inclusion as designated critical habitat in the updated RSAP, the proponent has not adequately considered the ecological context and sensitivity of westslope cutthroat trout in its assessment of residual effects on riparian. DFO has made a recommendation to reconcile this uncertainty.

Overall, the proponent has concluded that several pathways of effects have no residual effect. DFO's opinion is that there is too much uncertainty with the analyses to date to support these conclusions. As a result of this, the quantification of impacts the proponent presents is incomplete, and, consequently, the ability of the mitigation and offsetting plan to counterbalance the impacts is uncertain.

The quantification of impacts will also need to be updated to reflect the expanded critical habitat definition in the updated RSAP. That includes the 30 -metre riparian buffer on Gold Creek and its tributaries. DFO will apply the same requirement to Blairmore Creek due to its potential to support recovery.

With respect to the offsetting options the proponent has proposed, DFO has recommended additional assessments be undertaken to ensure the benefits, feasibility, and sustainability of any offsetting measures. The offsetting should be constructed and proven functioning and effective prior to impacts to verify it has resulted in net positive benefits to westslope cutthroat trout. This would be required to ensure the activities will not jeopardise the survival and recovery of the species.

The proponent has proposed an aquatics monitoring program to verify effects and support adaptive management. The isolation and lack of resilience of these populations of westslope cutthroat trout makes typical monitoring approaches less feasible due to the risks associated with long-term handling and stress. While there are strategies to reduce potential harm from the monitoring program as a whole, DFO notes there's a significant risk in a wait-and-see approach to monitoring for effects and then attempting to mitigate and reverse them when those effects are on a species at risk. This underlines the importance of using a precautionary approach that includes robust assessments of the potential effects to westslope cutthroat trout.

The Grassy Mountain Coal Project is unique for DFO

in the Ontario and Prairie Region because it's one of the first projects under review with proposed impacts of this magnitude to an aquatic species at risk. DFO's review approach was tailored to ensure the level of review adequately considered the sensitivity of the species.

DFO understands that there are uncertainties with selenium concentration predictions as Environment and Climate Change Canada has identified. DFO relies on Environment and Climate Change Canada's expertise and shares these concerns as they relate to the potential for population model effects. DFO also spoke to uncertainties with calcite impacts on habitat and water quality impacts on invertebrate food sources in our submission and have recommended further quantitative assessments of the residual impacts.

This assessment should be supported by robust mitigation and monitoring strategies to ensure impacts related to these two pathways are mitigated. The deposit of a deletery substance is prohibited under Section 36(3) of the Fisheries Act until such a time as the regulation is in place.

DFO would like to provide a correction to Recommendations 20 -- 19 and 20 in Section 5.3 related to water quality. In short, the references to the "offsetting plan" have been removed and reference to a

"monitoring plan" included in recommendation 20. I will restate the corrected recommendations.

Recommendation 19 should read: (as read)

> A quantitative assessment of the potential for calcite precipitation and its effects on westslope cutthroat trout habitat should be completed. Based on the results of the analysis, a robust mitigation strategy should be developed, tested, and proven effective prior to implementation. Any residual effects should be accounted for in the final assessment of impacts to westslope cutthroat trout and described in combination with other residual effects in the context of overall potential effects on westslope cutthroat trout survival and recovery. A comprehensive monitoring and adaptive management program should be developed and included in the AMP and follow-up program to define thresholds and triggers for action to prevent effects beyond those predicted.

Recommendation 20 should read: (as read)

> DFO recommends that an updated analysis of residual effects to food sources that accounts for potential long-term changes due to water quality specific to feeding habitats

and diet of westslope cutthroat trout should be undertaken. A comprehensive monitoring and adaptive management program should be developed and included in the AMP and follow-up program to define thresholds and triggers for action to prevent effects beyond those predicted.

We would also like to make a correction to a statement on PDF page 270, Section 4.6, on closure and reclamation. The last sentence of the third paragraph should read: (as read)

Of note to DFO is the long-term management of the surge ponds post closure to mitigate selenium effects, potential changes to groundwater discharge to Blairmore and Gold Creeks, the end-pit lake, and any potential changes in flow to Blairmore and Gold Creeks and recreational access.

DFO would also like to address part of an exchange that occurred Friday morning between Mr. O'Gorman and Dr. Bewley regarding a Canadian Science Advisory Secretariat Report titled "Framework For Assessing the Ecological Flow Requirements to Support Fisheries in Canada" from 2013.

The framework suggests cumulative flow alterations that result in less than a 10 percent change in

instantaneous flows will have a low probability of detectable impacts. The proponent has equated 10 percent change in instantaneous flows cited in that paper with a 10 percent change in physical habitat area. These metrics are not equivalent, and DFO consider any loss in critical habitat area as a result of changes in flow a residual effect.

The paper also states: (as read)

The advice within this report is not necessarily recommended for direct application to intermittent, seasonal, or ephemeral streams or rivers.

This suggests that this may not be an appropriate threshold to apply in these systems.

At this point in our presentation, we would also like to direct the Panel and participants to the recent publication of "Science Advice on Westslope Cutthroat Trout Critical Habitat Destruction and Jeopardy - Grassy Mountain Coal Project" published by the Canadian Science Advisory Secretariat on November 16th, 2020. This document brings together existing, publicly available information on westslope cutthroat trout and recovery potential modelling but applied to the Grassy Mountain Coal Project. The species-at-risk process is cyclical as our knowledge on listed species continues to evolve as we address research needs and

gaps on each species. As a result of this, new information is continually being made available to support recovery of these species, and DFO will continue to apply this information to support science-based decision-making.

DFO provided a submission to the Panel dated September 21st, 2020, that includes 21 recommendations with respect to this project. DFO's intention in making these recommendations is to provide the Panel information on the uncertainties, limitations, and gaps in the proponent's assessment related to residual effects on westslope cutthroat trout and fish and fish habitat and to guide the proponent in addressing the uncertainties should the project be approved.

With the information available to date, DFO is of the opinion that the subsection 73(3) conditions of the Species at Risk Act will likely not be met and that the project has the potential to result in significant adverse effects to westslope cutthroat trout.

I will now introduce DFO's panel and provide background and scope to each expert's review. Tom Hoggarth is the regional director for aquatic ecosystems in the Ontario and Prairie Region. He is accountable for the management of the aquatic ecosystems directorate, which encompasses the species-at-risk program, the fish and fish habitat

program, the aquatic invasive species program, and the aquaculture program.

We have four panel members representing DFO's fish and fish habitat protection program, which includes Martyn Curtis, director of the fish and fish habitat program and aquaculture program; myself, Stephanie Martens, regional manager -- manager in the program; Brandi Mogge, team leader for the program's mining, oil, and gas south regulatory review unit, and Laura Phalen, senior biologist in the mining, oil, and gas south unit.

Martyn and I can speak broadly to the program and its policies in the region. Laura and Brandi can speak to DFO's assessment of the project from a risk assessment and regulatory perspective under the Fisheries Act and Species at Risk Act, including analysis of effects of the project on westslope cutthroat trout and the proponent's approach to residual effects identification, mitigation, offsetting, and monitoring.

We have three panel members from DFO's species-at-risk program. These include Melanie Toyne, the regional manager for the program; Ashley Gillespie, senior species-at-risk biologist who focuses on westslope cutthroat trout; and Robyn Kutz, species-at-risk biologist who also focuses on westslope

cutthroat trout.

The species-at-risk program supports the minister in development of the RSAP, progress reporting, and collaborates with our partners to support work required within the RSAP. They are available to speak to species-at-risk policy, development of the westslope cutthroat trout RSAP, and initiatives supporting westslope cutthroat trout recovery.

Dr. Eva Enders is a research scientist with DFO's science program at the Freshwater Institute in Winnipeg, Manitoba. Her research is related to the conservation of species at risk, ecohydraulics and ecophysiology, among other areas. Her scope of review for this project included supporting our review of habitat modelling and current science related to westslope cutthroat trout including riparian critical habitat.

Finally, DFO retained experts from GeoProcess Research Associates to provide technical expertise related to hydrology, hydrogeology, and fluvial geomorphology as these disciplines relate to fish and fish habitat. This is expertise our department does not currently possess.

Ken Glasbergen is the principal of GeoProcess with professional experience in fisheries biology, ecology, and fluvial geomorphology. Ken has worked on numerous

projects on behalf of the public, Indigenous, and private sectors, assessing impacts of mining on aquatic ecosystems. His scope of review focused on bridging these disciplines of hydrology, hydrogeology, and fluvial geomorphology with fisheries biology.

Dr. Ben Plumb is a professional engineer and environmental consultant whose work has focused on applied fluvial geomorphology, river engineering, and stream rehabilitation. His scope of review included fluvial geomorphology assessment as it relates to the project's impacts on westslope cutthroat trout.

Peter Thompson is a professional engineer and specialist in surface water hydrology with over a decade of experience in hydrologic and integrated surface water-groundwater modelling and evaluating the effects of development and climate change on the hydrologic regime. The scope of his review included the hydrologic impact assessment and its suitability to predict changes to hydrologic conditions in Blairmore and Gold Creeks.

Michael Takeda is a professional engineer and environmental consultant whose work has focused on the construction, application, and review of numerical groundwater models and integrated surface water-groundwater models to support impact predictions of land development, water taking, and aggregate and

mineral extraction. His review focused on the hydrogeologic impact assessment components as they relate to base-flow impacts to Blairmore and Gold Creeks.

Each expert can speak to their respective reviews as I've described.

I would like to thank the Joint Review Panel for the opportunity to present our evidence, and we will be happy to address any questions regarding the information provided in our submission.

I would now like to turn to Margaret Fairbairn with Environment and Climate Change Canada, who will introduce her team. Thank you.

A MS. FAIRBAIRN: Thank you, Ms. Martens.

Good morning, Mr. Chairman, Mr. O'Gorman, Mr. Matthews.

Again, Margaret Fairbairn, panel lead for the environment, climate change, water session being -- panel, as well as joining me today is Jody Small, who has been the lead coordinator for this project, her team. But I have three subject-matter experts I would like to introduce to the Panel.

First, we have Ms. Aimee Zweig, who is the executive director of the mining and processing division with ECCC. Ms. Zweig is here to speak to questions related to the proposed coal mining effluent

regulations. As well, Ms. Zweig -- Zweig, excuse me, has been with the department for over 18 years working on policy and regulatory initiatives.

Next of our subject matter experts is Ms. Anne Wilson, who is a senior water quality expert with ECCC, and she will speak to questions related to the water quality analysis conducted for the project and to our recommendations contained in the aquatic environment section of our submission. Ms. Wilson holds a Master's of Science in zoology and focused on aquatic ecosystems and ethology in her studies. She has been providing water quality specialist advice on major industrial projects for over 30 years within the federal government. She has extensive experience with the northern environmental assessment and water boards within the Northwest Territories and Nunavut for large diamond and metal-mining projects.

And our last expert, I would -- finally, we have Ms. Marie-Claude Sauvé, who is a departmental expert in the risk assessment of inorganic substances, including selenium, who will speak to questions related to risk assessment of selenium, more specifically, to its behaviour in the environment and toxicity to aquatic organisms, as per the aquatic section of our submission. Ms. Sauvé studied biophysics, biochemistry, and environmental toxicology, and holds a

Master of Science degree. Ms. Sauvé has been with the department for 12 years, where she has worked as a senior evaluation specialist and section head for the ecological risk assessment under the Canadian Environmental Protection Act. Mr. Chairman, Ms. Sauvé will be speaking to the presentation titled "Selenium in the Aquatic Environment". I think it's CIAR Number 857, and I'd appreciate if the Zoom host could bring up that presentation, and Ms. Sauvé will speak to it.

Thank you.

A MS. SAUVÉ: Good morning. My name is Marie-Claude Sauvé. I work for Environment and Climate Change Canada.

Can you hear me well?

THE CHAIR: We can.

A MS. SAUVÉ: Okay. Cool. Thank you.

The purpose of this presentation on selenium in the aquatic environment is not actually to present new information. Rather, it is meant to expose some common knowledge of selenium behaviour in the environment. Following Mr. O'Gorman's questioning from last week, the content of this presentation may be somewhat basic information.

Next slide, please.

So selenium is a naturally occurring chemical element that can be released into the aquatic

environment through the exposure to water and oxygen [phonetic] of rock that contain high selenium. For example, the large waste rock piles generated by mountaintop coal mining can be a source of selenium.

Many of ECCC's recommendations concerning water quality for this project is that there are the potential for selenium to contaminate the environment. Selenium toxicity is complex and is influenced by many factor -- many factors, including selenium speciation, the chemistry of the rest of the environment, selenium bioavailability, and its uptake into food web.

Next slide, please.

So, indeed, selenium toxicity is a complex matter. It depends on biotech and a biotech reaction. Selenium exist in different states depending on oxidation and reduction condition, and we refer to selenium's compound as the "selenium species".

Selenate is the oxidized form of soluble selenium, and selenite is the reduced form. Reduction is a gain of electron, and the reduction reaction is what is intended by Benga SBZ treatment why selenate may be further reduced to elemental selenium.

Oxidation reaction adds oxygen to the substance, and the oxidation reaction is what is intended by Benga's advanced oxidation process.

Next slide, please.

Selenium is persistent in the environment. It can transform into multiple forms of selenium. I spared the Panel of the complete map of selenium species that is quite complex in the previous slide, just noting here there are a number of organo selenium species and other inorganic species that can be formed. In the environment, selenium speciation is dependent on oxidation, on --

THE COURT REPORTER: I'm sorry. Could you repeat that?

A MS. SAUVÉ: Sorry. In the environment, selenium speciation is dependent on oxidation, on pH, on the presence of major ions, and many other conditions.

Oxidation saturation affects transformation between selenate and selenite, but the transformation is slow and highly dependent on other factors.

The oxygen saturation alone is not enough to drive the process of transformation of selenite into selenate.

The selenium transform in the environment but cannot be eliminated from a watershed. It can change speciation between the elemental form, various organic forms, and various inorganic forms.

Next slide, please.

So why is the speciation matter so important for

selenium? It's because the speciation impacts the pathway for the uptake of selenium. So unlike most other elements, freshwater fish are exposed to selenium through their diet and up through their gills. Selenium accumulate in gonads, unlike metal cation that typically accumulate in liver and kidneys.

Freshwater fish are the most sensitive taxa of aquatic species to selenium, and fish are not really exposed. First, they are exposed into -- after incorporation in the food web. So there are some delay there. And some adult are exposed to selenium are less impacted than their offsprings, and, thus, the impact is greater on the second generation. So selenium is like a time bomb. It will have impact much later, after contamination of the aquatic whole system.

Next slide, please.

So as knowledge of selenium increase, models of selenium behaviour in the environment have been proposed. There is the one that we are presenting here, correspond to what I believe is the most accepted model of accumulation of selenium through the food chain, with some variation proposed here and there in the literature, the same -- of the same model.

So the graph represent a simplified food chain with four compartments. Note that we can add additional step on this food chain, notably on the

right-hand piscivorous fish. The graph shows the increase in selenium concentration at each step of the aquatic food chain. The first jump in the food chain between water and algae is neurally represented as the enrichment factor. It is the limiting step and where speciation of selenium matters.

The next step, which -- you can have as many steps as needed, are represented by "TTF", standing for trophic transfer factor, and are driven essentially by the animal species' identity.

The uptake of selenium for primary producer, hereby represented by algae, varies between selenium species to which they are exposed to. Algae just takes selenium from the water they are exposed to, and algae transforms selenium into organoselenium. This organoselenium forms are just selenium species that other links of the food chain will intake.

Next slide, please.

So the uptake or bioavailability of selenate and selenite varies for primary producer, so at the bottom of the food chain. Selenite is more regularly taken by -- taken up from water than selenate, as you can see from this graph.

Following this first uptake, the first link of the food chain, the uptake for higher-level organisms follow the same slope for both species -- speciation.

In natural conditions, meaning without addition of any anthropogenic input, the selenate species is favour in lentic or fast-flowing ecosystems, such as rivers and creek, and also under natural condition also for -- sorry, for lentic environments such as lakes and ponds, typically, we will find a greater proportion of the selenite form.

Of course, those are generalities that cannot be demonstrated for any site-specific scenarios without proper selenium speciation testing.

Next slide, please.

Now, in relation to sulphate mitigation effect that was discussed previously in this hearing, sulphate does compete with selenate for uptake at the basis of the food web. On the molecular scale -- sorry, on the molecular scale, sulphate and selenate are using the same sulphate transporter to enter the (INDISCERNIBLE).

THE COURT REPORTER: I'm sorry. Could you repeat that?

A MS. SAUVÉ: Yes. So starting, your sulphate compete with selenate for uptake at the basis of the food web. On the molecular scale, sulphate and selenate are using the same sulphate transporters to enter the cell. This is somewhat oversimplified, but you can have a look at the structure of selenate and sulphate on this slide to get a picture of competition

for entry into primary producers.

Sulphate does not compete with selenite for entry into primary producer. Following the first step of uptake in the food chain, the selenium uptake pattern by upper-level organisms remain unchanged.

So with respect to the Grassy Mountain Project, -- which is unknown at the moment which of those three curves that are represented on this graph here -- better reflect the bioaccumulation pattern of selenium in the local environment. Could be anywhere between the purple trend and the red curve. However, from what we can see in the environmental impact assessment, only the purple curve was estimated.

As you can see, this characterization of speciation of selenium is essential to estimate the final concentration of selenium in fish and, thereby, impact on fish. Sorry.

Next slide, please.

That's -- conclude this presentation. I hope you find this presentation informative, and I thank you for your attention.

A MS. FAIRBAIRN: Thank you, Ms. Sauvé.

Mr. Chairman, I will now pass to Ms. Jessica Coulson, the panel lead for Natural Resources Canada.

A MS. COULSON: Good morning, Panel Chair,

Joint Review Panel Members, Elders, Chiefs, Métis leaders, and participants of the hearings.

My name is Jessica Coulson, and I work in the office of the chief scientist at Natural Resources Canada. I am the team lead for our department for these hearings.

I wanted to thank my Fisheries and Oceans colleague for acknowledging that the proposed project is located in the traditional territory of Treaty 7 nations and Métis people of Southern Alberta, and I'm joining you virtually today from the unceded territory of the Algonquin Anishinabeg Nation.

I'll be providing a brief statement to introduce Natural Resources Canada's research scientist, Dr. Miroslav Nastev, who provided hydrogeology in groundwater expertise for this environmental assessment.

Following this, Dr. Nastev will be providing a brief statement summarizing his advice provided and will be then available to answer questions related to his review.

Dr. Nastev is a senior research scientist from the Geological Survey of Canada of Natural Resources Canada, and is an adjunct professor at five universities. His experience extends over a unique spectrum of competencies related to geology,

hydrogeology, earthquake engineering, and software development. For this environmental assessment, Dr. Nastev provided advice on baseline groundwater quantity and potential impacts from project activities. This included modelling of groundwater recharge, steady-state and transient groundwater flows, impacts of mine-pit dewatering, and review of the proponent's approach to groundwater management, monitoring, and mitigation.

NRCan does not have a regulatory role with respect to the management of groundwater resources. It is our understanding that this lies within provincial jurisdiction. The expertise provided for this environmental assessment originates from the Geological Survey of Canada, which is a national organization for geoscientific information and research.

I will now turn to NRCan's witness, Dr. Nastev, to provide his brief statement. Thank you.

A DR. NASTEV: Good morning. Good morning, Mr. Chair, Panel Members, and participants. And thank you, Jessica, for this introduction.

So I -- I have evaluated the hydrogeology and groundwater aspects of the proposed project and will give a brief overview from my point of view using as few words as possible.

So, first of all, I would like to emphasize that

the study area is very, very complex from a hydrological point of view. First of all, geologically, there are different -- different rock surface -- surficial deposits, rock -- rock units, and each -- each rock formations have -- each of rock formation, they have own -- on rough units.

Then from the -- then, physically, they have very variable hydrogeological properties. The -- what is very important is the topography of the terrain, which is mountainous, and then we have the -- the seasonal climate -- the seasonal climate conditions. So all these variable conditions, they contribute to the complexity of the -- of the groundwater -- of the water processes at large. And we have two interconnected water processes, which are surface water and groundwater. And in the case of surface water, the flow occurs much, much faster, orders of magnitude faster than in groundwater flow, which is much more attenuated and delayed with respect to external stresses.

So the project activities, basically, they will affect the water quantity. They -- there will be changes in water quantity, many due to the pit dewatering, and then changes in the water -- in the groundwater quality due to the combined dumping of waste rock and deposition of waste rock and mined coal

processing waste, the pit lake itself, the other ponds that will be -- that will be in the study -- within the study area, and eventually the processing operations themselves. There -- there can be some accidents.

So the proponent used the simple and complex models to -- to approximate what is happening in the field. These models were applied and calibrated in steady state and transient conditions, and whilst calibrated they were used -- they were used to predict what changes might occur in the future we addressed to the minus -- to the mining operations.

Any -- any model has own limits. Any modelling activity has own limits, and the modelling results have to be taken only as approximate. So in NRCan's -- in our view -- point of view, the proponent has the -- the modelling process and the prediction process based on the available data are appropriate, and we have to recognize there are certainties that have been outlined by the proponent. And in NRCan's view, those uncertainties and sensibilities of the results can be effectively addressed through, first of all, groundwater -- model design and groundwater monitoring plan; and, second, through effective groundwater management and mitigation strategies. And with this, I am available to answer any questions that you have.

Thank you.

Q MR. DRUMMOND: Thank you, Dr. Nastev.

Mr. Chair, that's the direct evidence of the Government of Canada panel. We are at approximately 10:10. I think it's too -- a bit too early to take a morning break, so I'd suggest we begin with the cross-examination. And in that respect, I'm just going to ask the witnesses, because there are so many of them, to identify themselves when they're responding to a question for the benefit of the court reporter.

Just before I do that, Ms. Martens, Ms. Fairbairn, and Ms. Coulson, is there anything you need to add before we -- before you are open to cross-examine?

A MS. FAIRBAIRN: Margaret Fairbairn.

No. Thank you, Mr. Drummond.

A MS. COULSON: Jessica Coulson.

No.

A MS. MARTENS: We're good as well.

Thank you, Mr. Drummond.

DR. DRUMMOND: Thank you, Mr. Chair. The Government of Canada witness panel is open for cross-examination.

Thank you.

THE CHAIR: Okay. Thank you, Mr. Drummond.

So I will just get a sense of who among the participants has questions for Canada. I know that

Mr. Sawyer from Timberwolf does. Are there any participants other than Benga that also have questions for Canada?

MR. YEWCHUK: CPAWS anticipates a brief cross.

THE CHAIR: Okay. Thank you, Mr. Yewchuk. Anyone else?

Okay. Hearing none, Mr. Sawyer, I guess since you spoke up first the other day, I will maybe let you go first, and then CPAWS can follow, if that's agreeable.

MR. YEWCHUK: No objections.

MR. SAWYER: Mr. Chair, just give me one moment. I was anticipating going after Benga, but that's fine. I just need a moment to prepare.

THE CHAIR: Mr. Sawyer, maybe -- maybe this would help. It is a bit early for a break, but if you would like a few minutes to prepare, I think I understood you had, you know, a fair bit of cross. So if you want to take the break now, we can. Otherwise, you might have to stop partway through.

MR. SAWYER: No. Mr. Chairman, I think I'm good to go --

THE CHAIR: Okay.

MR. SAWYER: -- as long as the Chair and DFO government panel accept my apologies for not having my -- my jacket on and being properly dressed.

So if you are okay with that, I'll just proceed.

THE CHAIR: Okay. Good. Go ahead.

MR. DRUMMOND: I'm sorry to interrupt, Mr. Sawyer, Mr. Chair. I should have added, I'm sure everyone can appreciate that not only are there many witnesses, but they're also in many different locations. So I just ask for everyone's patience if there's some delay as they confer with each other, if they're caucusing on a question.

But thank you in advance.

MR. SAWYER: Thank you for that, Mr. Drummond.

Mr. Sawyer Cross-examines Government of Canada

Q MR. SAWYER: Most of my questions will be directed towards the DFO panel. In fact, I might say all of my questions might be, so just put them on notice.

Good morning, panel. I have a few questions. You've already mentioned that -- the November 2016 Government of Canada Canadian Science Advisory Secretariat Report, and you have already indicated that you are familiar with that part.

MR. SAWYER: I am wondering, Zoom Host, if you could bring up CIAR 847 and go to PDF page 7, please.

Zoom Host, I want to apologize. I may have given

you the incorrect -- so let's just take that down for a moment. I will proceed with my questions, and we'll see if the panel needs us to bring it up.

Q MR. SAWYER: Panel, that report by the Canadian Science Advisory Secretariat indicated that the Gold Creek cutthroat trout -- westslope cutthroat trout population is one of the few populations with long-term -- potential for long-term viability but that because of its current population size and current range, that it's sort of towards the low end of viability.

Do you agree that this report confirms that maintaining Gold Creek and Blairmore Creek westslope cutthroat trout populations and its habitat in its current form is essential to recovery of the westslope cutthroat trout in Alberta and achievement of the recovery objectives set out in the 2019 recovery plan?

A MS. MARTENS: Thank you, Mr. Sawyer. One moment, please.

A MS. PHALEN: Okay. Thank you for the question, Mr. Sawyer.

Panel, DFO is of the opinion that because Gold Creek is one of ten populations deemed to be viable in, my understanding, a hundred-year period, per the COSEWIC, that jeopardizing the population in that creek would not be aligned with the recovery strategy action

plan population and distribution objectives for the species.

Q So, then, I take it that you would agree that this report confirms that the populations in Gold Creek and Blairmore must be protected from any further disturbances if the recovery plan objectives are to be met?

A Thank you for the question. One moment.

Thank you, Mr. Sawyer.

Panel members, the population in Gold Creek is protected under the Species at Risk Act. Therefore, we do agree that it needs to be protected per the conditions and goals of that act and the supporting recovery strategy action plan.

Blairmore Creek has different protections, as outlined in our opening statement.

Q Okay. Thank you for that.

MR. SAWYER: Zoom Host, if you could go to page 10 of that document, please, that -- that's the CIAR 847. And hopefully I've got the right reference this time. And if you can go to the last paragraph in that report -- in that page, sorry. You know, I apologize. I'm not batting too well this morning, but I can continue anyway. So maybe just pull that down, please, Zoom Host.

Q MR. SAWYER: What I was going to do is

direct your attention to that report where -- where it -- it summarizes the amount of habitat in -- critical habitat in metres squared that would be destroyed or harmfully alterated, and the numbers that they had in there was that -- 442,433 metres in Blairmore Creek and 141,830 metres in Gold Creek.

Do you agree that -- and these numbers were based on -- on Hatfield's application. Do you agree that this report confirms that the mine project will result in destruction of critical habitat for westslope cutthroat trout in -- in both Gold Creek and -- well, sorry, not critical, for habitat for westslope critical [sic] trout in both Gold Creek and Blairmore Creek? I think you've already said that, but we'll just confirm that.

A MS. MARTENS: Sure. One moment, please.

A MS. PHALEN: Thank you for the question, Mr. Sawyer.

Panel Members, without the reference in front of me, I -- okay, I -- okay. I see some numbers there. So outlined in our submission, particularly in Section 4.3.7, we do provide a summary of what we understand to be the impacts to critical habitat in Gold Creek as well as habitat impacts in Blairmore Creek. I will comment that those numbers are not identical to what they would be if the proponent did a

reanalysis now that the critical habitat has been expanded because they used a different buffer. They used 20, 30, and 50, depending on the -- on the fish-bearing status of the tributary or the main stem. So they're not -- they're not perfectly accurate.

However, we do acknowledge that -- or our understanding of the proponent's submission is that destruction of critical habitat in Gold Creek is proposed and unavoidable based on the information in front of us. And, similarly, in Blairmore Creek, there -- there are full destruction -- there is full destruction of habitat of riparian and, in some cases, fish-bearing and non-fish-bearing tributaries.

Q Thank you for that.

I think you've partially answered my next set of questions. So you are aware that the calculated footprint of the proposed impacts prepared by Hatfield which forms the basis of this application was done predating the release of the 2019 recovery strategy?

A Yes, we are aware that the 2016 submission by the proponent was issued before the 2019 recovery strategy action plan was published.

Q Right.

MR. SAWYER: Zoom Master, if I can get you to go to page 7 in that document. And hopefully I will not be wrong this time. PDF page 7, sorry. There we

go.

Q MR. SAWYER: Panel, you're familiar with this figure?

A MS. MARTENS: Yes, we are.

Q Thank you for that.

Can you confirm that this figure depicts the current spatial extent of westslope cutthroat trout critical habitat as defined by the 2019 recovery strategy in Gold Creek?

A Thank you, Mr. Sawyer. One moment.

A MS. PHALEN: Thank you, Mr. Sawyer.

Can you clarify the question? We have multiple colours on this graph. I want to make sure that I'm agreeing to my full understanding of each colour.

Q Okay. If we look at the title to this figure, it says "The Current Geographic Extent of Critical Habitat", and it covers some other watersheds other than Gold Creek, but Gold Creek is marked in the black hash line. So I'm just -- I will just talk about the Gold Creek extent.

And what we have here is the Gold Creek tributaries marked in a single red line, and then what we have is the main stem marked in a thicker yellow line. The thicker yellow line, as I understood -- and I'll get you to confirm this -- was actually the critical habitat that was used in the Hatfield study to

support the application, and that the thin red lines were the extension of critical habitat that came about as a result of the 2019 recovery plan. And so I just want you to confirm that -- that what's marked in red line and in bold yellow line is the extent of -- the spatial extent of critical habitat in Gold Creek watershed as defined by the recovery plan.

A MS. MARTENS: One minute, Mr. Sawyer.

A MS. PHALEN: Thanks for the clarification, Mr. Sawyer.

Panel members, that is correct. The yellow and red in Gold Creek represents the current extent of critical habitat. The yellow represents what was defined at the time the EIS was originally submitted and as defined in the 2016 RASP or the 2014.

Q Okay. Thank you for that.

And so would you confirm that the estimates of calculated footprint of proposed impacts that form the basis of Benga's application significantly underestimates the destruction or harmful alteration of critical habitat in Gold Creek based on the current definition of "critical habitat"?

A Thank you, Mr. Sawyer.

Panel members, as described in our submission, we acknowledge that the extent of habitat being impacted as described in the 2016 EIS, is considerably lower

than what would be defined if the proponent were to do the calculation based on the current defined extent of critical habitat as defined in the 2019 RSAP.

Q Thank you for that.

I have a transcript reference.

MR. SAWYER: Zoom Host, I don't think we need to pull it up, unless the DFO panel needs it.

Q MR. SAWYER: Benga has confirmed that they have not updated their environmental assessment based on the current and spatial extent of critical habitat in Gold Creek. And is that your understanding as well?

A Thank you, Mr. Sawyer.

Panel members, yes, that is our understanding.

Q Thank you for that.

Then, following from that, would you agree that there is currently no evidence contained in Benga's environmental assessment and associated application documents that accurately quantify the predicted destruction of westslope cutthroat trout critical habitat in the Gold Creek watershed?

A Thank you, Mr. Sawyer.

Panel members, I wouldn't say that there is no -- no information that supports an understanding of the extent. It's just that an updated overlap of project impacts with current extent of critical habitat is required. So just -- the new information needs to be

added to generate that calculation as identified in our submission.

Q Thank you for that.

Just to be clear, if we look at what -- the extent of the critical habitat that Benga used in their application documents and the current extent of the critical habitat defined underneath the recovery plan, I guess, to clarify, what I meant was that there's no evidence in the Benga application that addresses the impact to that incremental expansion of the critical habitat. Am I not correct in that?

A Thank you, Mr. Sawyer.

If I understand correctly, Panel Members, I would acknowledge that the environmental impact statement does not contain a -- an approach or a -- kind of a future contingency to pull in the extended critical habitat, although it was -- it has been mentioned to the proponent previously that -- that we were expecting it.

So, no, the -- the EIS does not contain a -- a path or a methodology for bringing in an understanding of the full extent of critical habitat. I don't believe that was addressed explicitly in the EIS anywhere, to my knowledge.

Q Okay. And as the science secretariat report outlined, would it also be DFO's conclusion that the -- Benga's

application has failed to sufficiently establish the baseline conditions of westslope cutthroat trout to the full extent of the impacts, including cumulative effects, and how effective the mitigation offsetting measures might be?

A MS. MARTENS: Thank you for the question, Mr. Sawyer. One moment, please.

A MS. PHALEN: Thank you for the question, Mr. Sawyer.

Panel Members, the question that Mr. Sawyer asked had multiple parts. I guess I will provide an overarching response by saying that our conclusions are outlined in our submission, and our submission does address a number of the topics that Mr. Sawyer brought up in his question.

Q Thank you for that.

I want to turn briefly to the question of offsetting -- the offsetting plan that is -- is included in the Benga application. The science report -- and I believe your evidence is fairly clear -- let me just ask you the question to get some -- some -- some response to that. And that is: Is there any empirical basis to support Benga's proposition that its offsetting plan will be effective?

A MS. MARTENS: Thank you for the question. One moment.

A MS. PHALEN: Thank you, Mr. Sawyer.

Panel members, the offsetting plan has some -- has made some effort to provide a numerical comparison between impacts and the quantification of the offset. I think where numerically or quantitatively we are concerned is that there is a considerable amount of non-fish-bearing tributary and low- and medium-value riparian, as defined by the proponent, that has been described as being impacted by the proponent in the EIS that has not been accounted for in the current version of the offsetting plan.

So I wouldn't say there's no empirical comparison between the proposed impacts and the offset. However, I would say that it's incomplete, and that is particularly -- the need to update that is particularly driven by the extended critical habitat as well as by the recovery strategy action plan that identifies riparian and headwaters as being important for the downstream habitat.

Q Okay. Thank you for that answer.

Just to expand on this topic a little bit, notwithstanding your response, do you think that Benga's evidence is sufficient and sufficiently robust to allow the Panel to make a determination about the likelihood of offsetting success and the risks associated with offsetting, and, in particular, whether

or not the offsetting plan would be sufficient to compensate for the impacts on -- the known impacts -- the known, predicted impacts on westslope cutthroat trout in the Gold Creek and Blairmore Creek watersheds?

A MS. MARTENS: Thank you, Mr. Sawyer. One moment, please.

A MS. PHALEN: Thank you for the question, Mr. Sawyer.

Panel members, DFO is of the opinion that -- well, first of all, to say that it's up to the Panel to determine how much information they need to make a decision. I would add that DFO is of the opinion that the offsetting -- the scale or scope of the offsetting, as proposed to date, does not provide us with competence that the impacts they are proposing from the project will be covered and adequately offset by the current proposal.

Q Thank you for that.

Would DFO agree with me that in these circumstances, where we have a major industrial development proposed that is -- is known to have an impact on -- on critical habitat, that in these particular circumstances, that the precautionary principle should prevail in all of our decision-making?

A Thank you for the question, Mr. Sawyer.

DFO is of the opinion that, in -- in general, the

precautionary principle should apply, and particularly as it pertains to species at risk, it needs to be front and centre in the consideration of assessment of impacts, potential offsets, and monitoring.

Q And so following from that response, you would agree that in this particular situation, with this -- with respect to this particular application, that we should put the question or principle front and centre?

A As it relates to the protection of westslope cutthroat trout, we are of the opinion that the precautionary principle should be applied.

Q In the specific context of this project?

A Yes. And --

Q And --

A -- and in general.

Q Yes. I appreciate that. Thank you.

So following from that, would you agree with me, in the absence of robust affirmative evidence that the westslope cutthroat trout will not be impacted or is at zero risk of being impacted, the conclusion must be that Benga's proposed plan to offset damage to the population of westslope cutthroat trout and their habitat will not be effective?

A MS. MARTENS: Mr. Sawyer, can you repeat the question, please?

Q Yes. In the context of the previous answers about the

precautionary principle, would DFO agree with me that in the absence of robust affirmative evidence about the effectiveness of the -- Benga's proposed offsetting plan, that our conclusion must be that the proposed plan to offset damage to the population of westslope cutthroat trout and their habitat in Gold Creek and Blairmore Creek will not be effective?

A Thank you. One moment, please.

A MS. MOGGE: Thanks, Mr. Sawyer. This is Brandi Mogge.

So I -- your question is layered, so I'm going to answer in a way that I think will help. So there's two different phases here, right, and so there's the decision that's before the Panel and the information that they need to make that decision.

If the project is approved, it moves to a regulatory phase where DFO would need all the information in order to make a decision as to whether the population would be jeopardised or not, which includes that offsetting plan.

With the information that we have right now, as outlined in our submission and as Laura also stated, is we don't have enough information at this time. So, yes, the offsetting plan at this point is uncertain and preliminary.

Q Thank you for that -- that response.

But let me pose a predicament to you, and that is that this Panel needs to make a decision about whether to approve the proposed project underneath the regulatory scheme they're working on, and they need to do that based on the evidence that is in front of them. And based on the evidence that's in front of them, do we have any evidence on the record that you're aware of that would indicate that their compensation plan has a high probability of being successful?

A MS. MARTENS: Thanks, Mr. Sawyer. One second, please.

A MS. PHALEN: Thank you for the question, Mr. Sawyer. This is Laura Phalen.

Panel Members, as we've already identified, it's up to the Panel to decide how much information they need in order to support their recommendation. However, we have it outlined in our submission that there is a significant gap between the habitat area that was identified as needing to be offset for and the full quantification of critical habitat, in particular, as well as habitat in Blairmore Creek.

So although there is information and evidence put before us by the proponent, we do not believe that it is fulsome enough to provide confidence that the impacts will be offset for.

Q Okay. I'm going to move on to a slightly different

aspect of the offsetting question.

The actual implementation rates applied -- well, I should say, the successful implementation rates applied diversity [phonetic] offsets are relatively poor. In Canada, DFO has found that only 30 percent -- 37 percent of compensation projects achieve the conservation policy of no net loss of habitat productivity under the Fisheries Act.

Do you have any reason to believe that those historical numbers are not applicable to the project that's in front of us? And I guess, in other words, that translates into a greater than 60 percent probability that the compensation measures will fail.

A Thank you for the question, Mr. Sawyer. One moment.

Thanks again for the question. Sorry for the delay.

Panel members, I would comment that the likely success of offsetting is site-specific. We are currently under a different regulatory requirement than the implementation rates that Mr. Sawyer has referenced.

In the context of this project, we do have a legislative requirement for offsetting under the Fisheries Act. And under the Species at Risk Act, we also have a legislative requirement to ensure offsetting as well as avoidance of jeopardizing the

survival or recovery of the species. And so there is a different level of legislative onus on reducing uncertainty and ensuring that there is an adequate offset applied if DFO were to make a decision to allow for the destruction of critical habitat.

I think I had an additional point, but I may have lost it. Mr. Sawyer, please let me know if I've answered your question.

Q I think you have, to some extent.

Are you familiar with the paper Favaro and Olszynski, 2017, that specifically looked at at this question? And I believe both those gentlemen are -- no, they're not DFO.

But is anyone on your panel familiar with that paper, "Authorized Net Losses of Fish Habitat Demonstrate Need For Improved Habitat Protection in Canada"?

A Thank you for the question. One moment.

Thank you for the wait. Sorry about that.

So I just wanted to respond -- I wanted to add my -- the point that I forgot to the previous question. Because of the requirement to have high certainty when it comes to permitting a destruction of critical habitat under the Species at Risk Act, it is recommended -- it is a possibility and a recommendation that we're making in the context of this project that

the offset be achieved and demonstrated functioning before the impact occurs.

My answer to your current question is that I have read that paper. I -- I wouldn't be able to kind of quote parts of it to you, but I -- I do -- I am familiar with it, as are some of the other staff on the panel.

Q Okay. And would you be able to confirm that that paper is where I drew my 37 percent of compensation projects had actually achieved the conservation policy of no net loss?

A I don't know that number specifically. I -- I would acknowledge, in relation to my previous answer, that that -- if I -- if I remember the scope of that paper correctly, it looked at offsetting plans and execution that were implemented under the serious harm prohibition as opposed to under the current harmful alteration, disruption, and destruction prohibition.

Q Right. And --

A And I would add that I don't know that it reflects -- because, again, this is a relatively unprecedented scope and scale for a species at risk, that that paper would not speak to implementation of offsetting in a species-at-risk context.

Q Okay. That's a good segue into my next question, which is: With respect to a Species at Risk Act Section 73

authorization, does DFO have any examples of a 73 authorization being given for a coal-mining project?

A MS. MARTENS: Thanks for the question, Mr. Sawyer. One moment.

A MS. PHALEN: Thank you, Mr. Sawyer.

Panel Members, we are not aware of any permits for the destruction of critical habitat associated with the coal mine. Within our regulatory scheme, what we are aware of are permits that we have issued to allow for the harm, harass, capture of -- of species-at-risk individuals in order to allow -- or incidental to baseline sampling associated with coal mines in our region.

Q Thank you for that.

Now, following from that question, is DFO aware of any Section 73 authorizations -- or permits, sorry, that have been issued for large-scale industrial projects that would be of the similar sort of scale and scope? And I just want to be clear; I'm interested in whether or not those 73 permits have been issued for destruction of identified critical habitat under a recovery plan. Are there any examples of a large-scale industrial project that has been authorized to destroy critical habitat that has been identified under a recovery plan?

A MS. MARTENS: Thank you, Mr. Sawyer. One

moment.

MR. SAWYER: Mr. Chair, while they're chatting with each other, I just want -- I only have a few questions left, and I know we're approaching a time where -- well, we're probably past the time where we should have our mid-morning break, and I will leave it to you and the Panel to decide. We can either go on for another ten minutes and I'll wrap up, or we can break as the Panel directs, and then come back. So I'll leave it up to you.

THE CHAIR: Yeah. Mr. Sawyer, I would say if you only have about ten more minutes, we might as well allow you to finish up, and then we'll take our break.

MR. SAWYER: Thank you, sir.

A MS. PHALEN: Thank you for the question.

Panel Members, we are not aware of a permit to destroy critical habitat that equates to this scale as it relates to aquatic habitat specifically, so as identified in our submission. And I believe, actually, Stephanie already identified this. We cover -- we only cover aquatic species at risk. We don't cover any terrestrial species. So, no, we are not aware. And I believe Stephanie actually identified that in the opening statement, that we -- this is -- this is new for our region.

Q Thank you for that.

In the Government of Canada's September 21st, 2020, submission to this Panel, DFO used the term -- and, again, it was used this morning in your submission -- of "overprint" or "overprinted". Can you tell us in plain language what "overprinting" means in the context of the proposed coal mine effects on critical westslope cutthroat trout habitat?

A Thank you for the question. Just one sec.

Thank you, Mr. Sawyer.

Panel members, "overprinting" refers to the complete removal of a habitat feature. So that is contrasted by the -- an activity that has the potential to impact the functions of habitat based on particular activities. So "overprinting" means complete removal in order to facilitate mine structures in this case.

Q So you would agree with me that the word "destroyed" could be interchangeable with the Orwellian term "overprinted"?

A Panel Members, I think that I will -- I would clarify. The reason that we use the term "overprinted" -- and forgive us for some of our day-to-day operations, perhaps, applying jargon that doesn't necessarily apply to kind of the average reader. There are multiple ways -- there are multiple things you could do on a landscape that could cause the destruction of critical

habitat. You don't have to fully overprint something to destroy it. But overprinting or fully utilizing that area for a different purpose is one of those ways. So it's more of a descriptive term. To --

Q So --

A -- to clarify the -- the particular pathway or the manner in which the habitat will be impacted.

Q Thank you for that.

And I saw you smile. You did catch the humour in my question, so thank you for that.

But it would be fair, then, to say that anytime we see the term "overprinted" or "overprinting" in the DFO submissions, that it would be reasonable to conclude that that means destroyed?

A That is accurate, yes.

Q Okay. Thank you for that.

As of today, has Benga applied for a Section 73 or 74 permit under the Species at Risk Act in relation to this proposed coal mine?

A No, they have not.

Q Thank you.

On November 5th, 2020, the Government of Canada informed the JRP and participants to this proceeding that DFO representatives had met with Benga on October 20th of 2020. Are you aware of that meeting?

A Yes, we are aware of that meeting.

Q Did anyone on the DFO panel participate in that meeting?
A Yes, members of this panel participated in that meeting.
Q And can you tell us what specifically was discussed at that meeting that was relevant to these proceedings?
A That meeting was held without prejudice, so we are not able to discuss its contents with this -- in this forum.
Q Sorry. Did I hear you say it was held at your prejudice?
A Held without prejudice.
Q Held without prejudice?
A And --
Q Okay.
A I am not a lawyer, so I can't fully describe the definition or the scope of that term, but that's -- yeah.
Q Okay.
A And --
Q That's the advice from your legal counsel; right?
A Correct.
Q Were there minutes kept of that meeting?
A We are not aware of minutes that were kept. We can't speak for Benga.
Q Okay. Thank you so much.

Does DFO and the Government of Canada believe that it's appropriate to be meeting with the applicant in these proceedings while these proceedings are ongoing?

A MS. MARTENS: Thank you for the question. One moment.

MS. MCHUGH: Mr. Chair, this is Sydney McHugh here. I'm sorry to interrupt.

I've just gotten a message from Mr. Drummond, and it looks like he's having some Zoom issues, and it looks like his video might be frozen right now. I am wondering if it might be appropriate for us to take a short break while he figures out what's going on with his Zoom connection.

THE CHAIR: Okay. Yes, I do see he's not moving.

So let's take a break. Let's take our morning break. It's 5 after 11, and we will resume at 11:20. And, Mr. Sawyer, you can kind of pick it up again when we come back.

MR. SAWYER: And that would be fine. Thank you, sir.

THE CHAIR: Okay. Thank you.

(ADJOURNMENT)

THE CHAIR: Do we have Mr. Drummond back with us?

MR. DRUMMOND: I am back, sir. Thank you for

your patience.

THE CHAIR: Okay. Yeah. No worries.

Mr. Sawyer, you want to pick it up where we left off?

MR. SAWYER: Thank you, sir.

Q MR. SAWYER: DFO panel, I believe I had asked a question prior to the break that: Why does DFO believe -- or does DFO believe that it's appropriate that they should be holding private meetings with the applicant during this proceeding? And I don't think you had the chance to answer that question for me.

A MS. MARTENS: No, we haven't. Thanks for being patient, Mr. Sawyer.

Panel Chair, Panel Members, let's just remember DFO has a regulatory role to play here in these proceedings, and we regularly meet with proponents to continue on with an exchange of information to make sure that we are receiving the best information we can and applying it to the project moving forward. So we do feel it is appropriate to meet with project proponents.

Q Thank you for that.

Turning to your submission to these proceedings, DFO had made 21 recommendations to the Panel and to Benga with respect to their application; that is correct?

A Yes, that is correct.
Q Okay. And as of now, as of today, has Benga confirmed that they are prepared to accept any one of those 21 recommendations?
A One moment. One moment, Mr. Sawyer.
Thank you, Mr. Sawyer.
Panel Chair, DFO cannot confirm whether or not the proponent has agreed to our recommendations, but that information would be available in the hearing transcripts that I believe are published daily on the registry.
Q Thank you.
And with respect to those recommendations, do those recommendations need to be met prior to DFO agreeing to issue a Section 73 permit in -- in the context of the regulatory role for this application?
A Thank you for the question. One moment.
A MS. PHALEN: Thank you for the question, Mr. Sawyer. This is Laura Phalen.
Panel Members, DFO made those recommendations as a way to support the Panel's review of the information provided in the EIS. Those recommendations are not requirements for permitting under the Species at Risk Act. We'll highlight that we have not received a Species at Risk Act application to date.
Q Thank you for that, Ms. Phalen.

Could you expand on that? You have made a number of these recommendations, 21, that contain some fairly explicit advice about what would have to be done in order to meet or satisfy the requirements of the Species at Risk Act. Can you tell us how -- what was your intention in terms of how that would assist this Panel?

A MS. MARTENS: Thank you. One moment.

Thank you, Mr. Sawyer. (UNREPORTABLE SOUND) There we go.

In response to your question, I'm not sure if you were able to listen this morning. In our opening statement, when I spoke for about 40 minutes -- or felt like 40 minutes -- what we said this morning was that DFO's intention in making the 21 recommendations is to provide the Panel with information on the uncertainties, limitations, and gaps within the proponent's assessment. Our intention with those recommendations is also to guide the proponent in addressing uncertainties if the project gets to that approval stage.

So what we're doing with those recommendations is providing them to the Panel for their information because, as you're aware, the Panel themselves will make a report and several recommendations that they will then (UNREPORTABLE SOUND).

THE COURT REPORTER: Sorry. Could you repeat that answer?

Q MR. SAWYER: Okay. Thank you for that, Ms. Martens.

Would I be correct in -- well, let me ask you the question: With respect to your 21 recommendations, is there anything on the record of these proceedings that DFO's aware of that would allow this Panel to believe that those deficiencies or gaps or uncertainties will be addressed or even can be addressed?

A Thank you. One moment.

Thanks for being patient there, Mr. Sawyer. Just want to make sure we're understanding your question.

Panel Chair, as DFO identified in our submission and in our evidence we've presented this morning, we believe that there are several uncertainties, limitations, and/or gaps in the proponent's assessment. To date, they have not been addressed. And I'm hoping that's what you're getting at, Mr. Sawyer.

Q Thank you for that.

I want to turn the discussion to the Species at Risk Act and the provisions of the Species at Risk Act that are central to this discussion, and specifically to Section 73.

Now, earlier in your submission you did identify Section 73(2) and the circumstances under which the

minister might issue a permit, and that scientific research activities that benefit the species or -- that the Act -- the incidental carrying out of the activity. And so I just want to have a discussion about that.

You have indicated that it's 73(2)(c), affecting the species is incidental to carrying out the activity, that you're looking at this project in the context of that provision in terms of if or whether you issue a permit under Section 73; is that correct?

A MS. PHALEN: Thank you, Mr. Sawyer.

Panel Members, if a Species at Risk Act were to be applied for, mining activities would fall under that third category, an activity that is incidental -- sorry, impacts that are incidental to carrying out the activity.

Just to confirm, we don't have that Species at Risk Act permit, but we just wanted to provide that regulatory framework for a fulsome understanding.

Q And thank you for that.

If we go to 73(3). And I'm just going to read it, and I'll just get you to confirm that that's accurate. It says: (as read)

> The agreement may be entered into or the permit issued only if the competent minister is of the opinion that:
>
> (a) all reasonable alternatives to the

activity that would reduce the impact on the species have been considered and the best solution has been adopted;

(b) all feasible measures will be taken to minimize the impact of the activity on the species or its critical habitat or the residence of its individuals; and

(c) the activity will not jeopardize the survival or recovery of the species.

Does that seem like a -- I mean, you're familiar with that provision of the Species at Risk Act?

A MS. MARTENS: Yes, we are.

Q So, then, my understanding would be that you could only issue -- or the minister could only issue a permit under 73(2)(c) if all three of those conditions were met; is that correct?

MR. DRUMMOND: Mr. Chair, it's Robert Drummond. I have to raise concerns about these questions which go -- which are going towards what decision the minister is going to make. That's a separate process, and I think it would be inappropriate to make statements to fetter the minister's ultimate decision.

MR. SAWYER: Mr. Chair, I -- I would accept Mr. Drummond's submission on its face, but I'm not trying to fetter the minister's decision. What I'm

trying to do is establish what -- DFO's understanding of the regulatory framework in which they have themselves said they're going to make a regulatory decision, and so I'm not -- I'm not looking for any information that would fetter the minister's discretion. I simply want to establish the regulatory framework in which DFO is operating under.

So those would be my submissions on the objection, sir.

THE CHAIR: Mr. Drummond, anything further?

MR. DRUMMOND: Subject to Mr. Sawyer's clarification, I think it's a fair question. Thank you.

THE CHAIR: Okay. Carry on, Mr. Sawyer.

Q MR. SAWYER: So I think -- I believe my question to the DFO panel was: Do you agree that those three subprovisions of 73(3) would have to be met in order that a Section 73 permit would be issued?

A MS. PHALEN: Thank you, Mr. Sawyer.

Panel members, Mr. Sawyer is correct. The minister would need to be of the opinion that those three conditions were met before a permit could be issued under Section 73.

Q Okay. Thank you for that.

Following along from that, I would like to know

what DFO's definition of the word "incidental" is as it's applied in Section 73(2).

A MS. MARTENS: Thank you, Mr. Sawyer. One moment.

A MS. TOYNE: Hi, Mr. Sawyer. Sorry for that delay.

I'm Melanie Toyne. I'm the manager of the species-at-risk program, and I can respond to that and the Species at Risk Act permitting policy. There is a subsection that speaks to how we interpret "incidental". And incidental in -- in this regard is not related to the size of the impact of the activity. So that's not taken into consideration. What is taken into account when the activity is likely to jeopardize the survival or recovery of this species is the -- is not the scale of that.

So industrial development projects usually are satisfied under that as they are not usually directed at a species itself; however, this does not mean that they will satisfy other permitting provisions under SARA.

Q Okay. Thank you for that.

In the context of the language of this -- the Species at Risk Act, has DFO had a legal opinion about what -- the meaning of "incidental"?

MR. DRUMMOND: Mr. Chair, the very words

about, Does DFO have a legal opinion, of course, raises questions of solicitor-client privilege.

MR. SAWYER: So, Mr. Drummond, I'm not going to ask what that opinion was. I'm just wondering if -- if the permitting policy language which has just been inferred in the answer -- is that -- is that based on a -- a legal interpretation of the Act, or was it something else? And I'm not asking for that legal opinion, I'm just wondering if it was based on a legal analysis of the language of the Act.

MR. DRUMMOND: Mr. Chair, I just have to add, the law surrounding solicitor-client privilege goes beyond just the contents of an opinion but also covers whether opinions were actually sought, so I have to be very cautious here.

THE CHAIR: Mr. Sawyer, I would agree with Mr. Drummond. And it's not clear to me how just knowing whether or not they had an opinion is going to be helpful to the Panel in its decision-making.

MR. SAWYER: I accept that, sir, and I'll move on.

Q MR. SAWYER: DFO panel, so if we accept the language in the permitting policy document and we have a situation where critical habitat of an endangered species or a threatened species, a species that's protected under the provisions of the Species at Risk

Act, could be destroyed by virtue of the fact that it is considered to be incidental to a -- the main purpose of the project, which in this case is coal mining. And that -- that strikes me -- and it's of concern to my clients because they look at DFO's history of -- under the Fisheries Act of using the permitting provisions to allow many of the activities that destroy fish habitat. And, in fact, one could argue that many of these activities have contributed to the fate of the westslope cutthroat trout.

So I guess what I want you to answer for me is: How does your interpretation of the word "incidental" square with the purposes of the Species at Risk Act? And I would draw your attention to Section 6 of the Act, which defines the purposes as -- let me quote: (as read)

> The purpose of this Act are to provide wildlife species from becoming extirpated or becoming extinct; to provide for the recovery of wildlife species that are extirpated, endangered, or threatened as a result of human activity; and to manage species of special concern to prevent them from becoming endangered or threatened.

So in the context of the purpose of the Act and in the context of the precautionary principle that we've

discussed and as outlined in your permitting policy document, how does your definition of -- of "incidental" square with the purposes of legislation?

A MS. MARTENS: Thank you, Mr. Sawyer. One moment.

A MS. PHALEN: Thank you for the question, Mr. Sawyer.

Panel Members, I will provide two points in response to this question. The first is that the interpretation of "incidental" as stated in -- and I think we're just pulling up a reference to the previous question to be helpful here, is referenced in the Species at Risk Act permitting policy, which is available to the public, and it interprets incidental as meaning that: (as read)

> The effect that carrying out the activity has upon the species must not be the purpose of the activity.

So, essentially, the Species at Risk Act prohibits people from intentionally targeting and harming a species at risk.

So to answer the more recent question, I would bring attention to the fact that that condition, that the activity must be incidental to the activity, is not the only condition that must be satisfied under the Species at Risk Act. So it -- it's not an "or"

scenario. Each of the conditions -- the preconditions of SARA must be met. So that includes that the alternatives must have been considered, feasible mitigation measures must have been incorporated, and that the jeopardy of the -- the survival or recovery of a species cannot be jeopardised.

So taken in whole, each of those conditions aligns with the purpose of the Species at Risk Act that Mr. Sawyer read out there.

Q Okay. Let me ask you: First of all, the permitting policy is, in fact, a policy, not a legislative or regulatory requirement; correct? It has no force of law?

A That is correct.

Q Okay. And the basis of the permitting policy, in addition to the Species at Risk Act, is the DFO's long-standing assumption that it can issue compensation or offsetting projects to -- to -- to mitigate any projected impacts under the Fisheries Act; correct?

A Can I get you to restate the question, Mr. Sawyer?

Q Okay. Let me try to simplify this.

Under the Fisheries Act, DFO has a long-standing practice of using mitigation or offsetting strategies in order to authorize the destruction of fish habitat. Is that not a correct statement?

A MS. MOGGE: This is Brandi Mogge again.

So, yes, mitigation and offsetting are actually required as part of the regulation for authorizing impacts. And it's also, I think, important to remember that it's part of a hierarchy; right? So we're looking at avoidance and mitigation first, and offsetting is kind of the last option, and it is a requirement under the regulation.

Q Okay. Would you agree with me, then, that that has created a -- I'll call it an "institutional bias" within DFO which you are now applying to the Species at Risk Act circumstances?

A MS. MARTENS: One moment, please, Mr. Sawyer.

Thank you, Mr. Sawyer.

No, we cannot agree with the statement that there's an institutional bias and just that both -- that the Fisheries Act and Species at Risk Act have their own regulatory requirements that must be met.

Q Okay. Thank you for that, Ms. Martens.

Can the DFO panel tell me: Where in the Species at Risk Act does that Act provide the legislative authority for offsetting?

A One moment, please.

A MS. PHALEN: Thank you for the question, Mr. Sawyer. I'm just going to make sure that I have kind of my points in mind here.

So the Species at Risk Act does not speak explicitly to the use of offsetting. However, when we are taking into consideration whether a project proposal meets the conditions -- the preconditions identified in the Species at Risk Act, the potential for offsetting harm and the proposal put forth by a proponent are considered on the whole. So if the offsetting -- if it is demonstrated that the offsetting can prevent, for example, creating jeopardy to the survival or recovery of the species, then, per the Species at Risk Act, we can enter into an agreement in order to generate an exception to the prohibition that says that you cannot destroy critical habitat.

I would add that, as we've identified previously, in the case of this project, we have recommended that offsetting be demonstrated functioning and, therefore, the jeopardy -- it has been demonstrated that the activity will not jeopardise the survival or recovery of the species is recommended as occurring before the impact.

So there's a lot of kind of lines of legislation in there, but essentially because those preconditions exist, we consider the project on a whole in order to determine that those preconditions have been met, and the project may include offsetting as part -- and that would be something that we consider to try to determine

if those preconditions have been met.

Q Thank you for that answer, Ms. Phalen.

You would confirm for me: My understanding of what you said was that there are no specific or explicit provisions in the Species at Risk Act that provide legislative authority for offsetting; is that correct?

A The term "offsetting" or the concept of "offsetting" is not explicitly acknowledged in the Act. However, there is language in the Act that indicates exceptions to the prohibitions can be made under certain conditions.

Q Right. Okay. Just sort of a final set of questions for the DFO panel.

Two sides to this: One is I want to put it to you that there is a disconnect between the environmental assessment process and these Joint Review Panel hearings that we're doing versus what DFO has characterized as their regulatory role. Would you agree that those are two different phases of this project assessment?

A MS. MARTENS: Yes, they are two different phases.

Q Okay. And would you agree with me that if the Panel makes a decision to approve this application and, in part, they're likely going to take into consideration the recommendations that DFO has presented, would you

agree with me that all of those recommendations are talking about things that might happen in the future?

A Sorry, Mr. Sawyer. Can you please clarify your question?

Q Yes. What I'm trying to establish is that -- that the Panel Members -- well, let me back up.

So your 21 recommendations are on the record in this proceeding; correct?

A That is correct.

Q And if the Panel takes those into consideration in arriving at its decisions, all of those recommendations are about things that might happen in the future?

A Okay. Yes. They would have to happen in the future, and the Panel themselves also make recommendations. The Panel themselves will not formulate, necessarily, a decision. They're going to prepare the report and make recommendations, just --

Q Right. But my point is: Your evidence provides those recommendations that, if they accept them, will be about things that might happen in the future, and you agree to that.

So the problem I'm having with the disconnect between the environmental assessment part of this proceeding and your regulatory role is once you're into that regulatory phase, you will sit down with the applicant on a regular basis and essentially negotiate

the terms to the -- whether or not they're going to get a 73 application or not. Is that not -- is that an unfair characterization about how this works?

A One moment, please.

A MS. PHALEN: Thank you for the question, Mr. Sawyer. This is Laura Phalen.

Panel Members, as you are aware, the Panel doesn't decide whether the project moves forward. If they were to make a recommendation that it is in the public interest, then there would be the potential for the proponent to make an application to DFO. We would not negotiate with the proponent at that stage. What would occur at that stage would be for DFO to host discussions with the proponent, to receive information, and ensure that we have a very fulsome understanding of the information that we've received, to allow us to make an assessment as to whether conditions as defined in the Species at Risk Act and/or the Fisheries Act have been met.

I hope that answers your question, Mr. Sawyer.

Q It certainly does, in part. Thank you for that, Ms. Phalen.

Those, what I characterize as "negotiations", meetings, communications between DFO and the applicant, are those held in private?

A Thank you, Mr. Sawyer. This is Laura Phalen again.

The -- any meetings or exchange of information, particularly verbal exchanges of information between the proponent and DFO, would be held in private. It's not a public process the way that this hearing is public. However, information submitted to DFO would be recorded and would be part of our decision-making process.

Q So when you say it "would be recorded", would there be opportunities for public input or scrutiny on the permitting decision?

A Thank you. One moment.

THE CHAIR: Mr. Sawyer, just a time check. We didn't have kind of a firm timeline for this cross-examination, but you did indicate before the break you only had about ten more minutes, and since the break, it's been about 40, so I'm just wondering how much more you might have.

MR. SAWYER: Has it really been 40 minutes? I apologize, sir. I literally have two questions, and I -- I think you can appreciate sometimes you ask a question, and it ends up turning into six or seven. But I think the next two are fairly succinct. So I just have two questions, sir.

THE CHAIR: Okay. Thank you. Please -- please finish up, then.

MR. SAWYER: And, sir, if I take longer

than I say, I do want to apologize. I'm really trying my best to be efficient in the use of my time.

THE CHAIR: Yeah. No. Understood. Thank you, Mr. Sawyer.

A MS. PHALEN: Thank you for the question, Mr. Sawyer.

The Species at Risk Act has a public registry, so the decisions made under that Act are posted to the public registry. In particular, I -- I believe the pieces of information that are posted are specific to how each of those criteria that we discussed earlier are met. So the rationale is provided to the public on the registry.

Q MR. SAWYER: Thank you for that.

You would confirm for me, though, that there is no opportunity for public input or scrutiny prior to a decision being made by DFO?

A Thank you. One moment.

Thank you, Mr. Sawyer.

To clarify, the Species at Risk Act and Fisheries Act permitting processes do not have a formal public participation component.

Q Thank you for that.

Now, to my second-last question: You can confirm for me that when you get an application -- in this case, the Benga application -- goes into a permit --

73 permit application and has those discussions with DFO, which would lead to a DFO decision one way or the other, can you confirm for me that the information that's provided to DFO from Benga, and assuming at that point you have a fulsome understanding of all of the environmental impacts of the proposal, at that stage of your regulatory process, there is no environmental assessment of the Benga application, is there?

A MS. MOGGE: Thanks, Mr. Sawyer.

Yes. So, at that point, the EIA would have been completed. There is no environmental assessment after the Panel.

Q Okay. And you would agree that between the Panel process and the regulatory process, that -- and this is, of course, assuming that the Panel approves the project and that Benga makes an application, that new information will come in to DFO that will assist you in making your decision, and that new information will not have been subject to an environmental assessment; correct?

A Yes, that is correct.

I'd also like to clarify that the Panel will make a recommendation to the minister, who will then kind of, for the federal side, make the -- the final approval or not.

Q Okay. I just have one last set of questions.

In the hearing, there was some reference to the Alberta Government's FIS, Fish Sustainability Index. Is the panel familiar with that -- that sustainability index?

A Yes. We did reference it in our submission.

Q Okay. And does the panel believe that that is an important piece of the information puzzle in assessing the status and vulnerabilities of westslope cutthroat trout in Alberta?

A Yes. It is one of the tools that we use to consider -- different management tools looking at the status of the species --

Q Okay.

A -- understanding that there are limitations with multiple tools that we consider.

Q Sure. But it's one that should be considered in the -- in the suite of tools and information that we have before us?

A Yes.

Q Thank you.

DFO panel, I appreciate your patience and time.

And, Mr. Chairman, I appreciate your patience. And those are all my questions, sir.

THE CHAIR: Okay. Thank you, Mr. Sawyer.

Mr. Yewchuk, if you only have a few questions, maybe we could deal with them before lunch, unless you

advise me otherwise.

MR. YEWCHUK: I expect to be about 10 to 15 minutes. Would you prefer for me to just go now?

THE CHAIR: Yes. Please, let's go.

MR. YEWCHUK: Perfect.

Mr. Yewchuk Cross-examines Government of Canada

Q MR. YEWCHUK: Hello, DFO panel. My name is Drew Yewchuk. I'm counsel for the Canadian Parks and Wilderness Society here.

Does DFO have timelines set by law for posting Species at Risk Act documents to the public registry?

A MS. MARTENS: Thank you. One moment.

A MS. TOYNE: Hello, Mr. Yewchuk. This is Melanie Toyne.

Yes, there are legislated timelines under the Species at Risk Act.

Q Perfect.

Did DFO meet all of those timelines for the westslope cutthroat trout?

A No, we have not.

Q How many of those timelines did DFO fail to meet?

A One moment, please.

Thank you, Mr. Yewchuk.

Within DFO, we do -- we make all efforts to meet all of our legislated timelines, but we're here today to discuss the Panel, and I'm not sure where your

question is applicable to that.

Q Does DFO consider gathering baseline data for the purpose of seeking project approvals to be scientific research relating to the conservation of the species?

A MS. PHALEN: Thank you for the question, Mr. Yewchuk. This is Laura Phalen.

DFO considers the collection of baseline data to support an environmental impact statement as being an activity that is incidental -- I can't remember the exact wording, but it's incidental to the -- to the impact on the species.

Q So that was close to my question.

Does DFO not consider it to be scientific research relating to the conservation of the species, then -- of the species, then?

A That is correct.

Just one moment, though, Mr. -- Mr. Yewchuk.

MR. YEWCHUK: While they're getting that together, Zoom Host, could you prepare my Aid to Cross Number 16 and Document 555? I will call on them in one moment.

A MS. PHALEN: Sorry. I just want to confirm. We do not consider collection of baseline data to support a project as being research that benefits the species.

MR. YEWCHUK: And can I get Document

Number 555, PDF 355?

Q MR. YEWCHUK: And what this will be is one of Benga's baseline research applications for a Species at Risk Act permit. They've checking "scientific research relating to the conservation of the species". Did they check the wrong box?

A MS. PHALEN: Sorry, Mr. Yewchuk. Can you confirm the -- can we figure out what the file number is for this?

Q This is in Document Number 555. This is the CPAWS hearing submission. This is a section of an access to information request we received from DFO.

A Thank you, Mr. Yewchuk. Sorry. I was referring to the DFO file, which I see further down.

So I -- I believe this may have been in error. If you look at the public registry entry for this permit, I believe it does identify that the purpose of the activity is -- affecting the species is incidental to the carrying out of that activity.

Q Is -- the activity is re -- baseline research on the westslope cutthroat trout?

A Sorry. Was there a question there, Mr. Yewchuk?

Q Sure. The research activity that is the subject of this application for a permit was baseline research on the westslope cutthroat trout; right?

A It's based on data collection to support an EIS.

Q Okay. Has the Government of Canada placed their permitting policy for Section 73 permits on the Species at Risk Act public registry?

A MS. TOYNE: Hi, Mr. Yewchuk. It's Melanie Toyne.

Yes, I can confirm that that document is available on the species at risk public registry.

Q Is it marked "proposed"?

A Yes, it is.

Q And when was it placed up?

A 2016.

Q Does a final version exist?

A Not that I'm aware of.

Q Thank you.

Was Benga given a copy of the 2019 recovery strategy and action plan for the westslope cutthroat trout before it was placed on the public registry?

A MS. PHALEN: Thank you, Mr. Yewchuk.

Panel Members, we are not aware that the recovery strategy action plan would have been provided to Benga before its publication. If that occurred, we are not aware of it, to confirm.

Q Under Section 46 of the Species at Risk Act, DFO must issue a report on the implementation of the recovery strategy within five years of the recovery strategy being posted; correct?

A MS. TOYNE: Hi, Mr. Yewchuk. It's Melanie Toyne.

Yes, that is correct. Yes.

Q When was that document, the report on implementation and recovery strategy, due for the westslope cutthroat trout?

A One moment, please.

Sorry for that delay. I was just confirming the date.

Yes. That document was due in March 2019.

Q Was a draft version of that report circulated to stakeholders?

A One moment, please.

Hi, Mr. Yewchuk. Sorry again.

That document was circulated to some stakeholders but only if they had activities that were identified within the progress report.

Q Did Benga or any of its representatives, agents, or consultants get a copy?

A Thank you.

And, no, not to our knowledge, Panel.

Q Under the 2014 westslope cutthroat trout recovery strategy, Blairmore Creek had a segment of critical habitat; is that correct?

A MS. PHALEN: Thank you for the question, Mr. Yewchuk. This is Laura Phalen.

Under the -- sorry, under the 2014, is that what you're asking?

Q Yes.

A Yes. Under the 2014 recovery strategy action plan, there was a segment of Blairmore Creek, particularly a tributary, I understand, that was designated as critical habitat for westslope cutthroat trout.

Q Did DFO warn Benga that Blairmore Creek and its tributaries might be made into critical habitat in October 2017?

A Just to clarify, you're asking if we indicated that Blairmore Creek would be defined as critical habitat?

Q Yes. Was Benga warned that Blairmore Creek might be made critical habitat in October 2017?

A I -- I was not present at the meetings. My understanding from the record was that we indicated that an expansion of critical habitat was likely. I'm not sure that we were explicit that that might be in Blairmore Creek. I think it was a more general statement.

MR. YEWCHUK: Can I get PDF page 373 in this document.

Q MR. YEWCHUK: Does that first bullet point make it seem like Benga was told Blairmore Creek and -- Blairmore Creek would likely be made critical habitat?

A MS. PHALEN: Yes. Thank you, Mr. Yewchuk.

Panel members, I can confirm that the wording in this -- in the meeting minutes identified here indicate that there was a potential for Blairmore and Gold Creek and their tributaries to be listed in a future recovery plan.

Q Does Blairmore Creek still contain near pure westslope cutthroat trout?

A Yes, I can confirm that Blairmore Creek contains near pure westslope cutthroat trout.

MR. YEWCHUK: Can I get my Aid to Cross Number 16? I'm looking for the bottom of page 2 and the top of page 3.

Q MR. YEWCHUK: So can one of you confirm for me that this email explains how you identified the critical habitat in the 2019 RSAP?

A MS. PHALEN: Thank you for the question, Mr. Yewchuk. We'll just take a moment to confer.

A MR. CURTIS: Good afternoon, Mr. Yewchuk, and Panel. It is Martyn Curtis here.

So I just want to respond. So the email that is up on the screen is a portion of a discussion between myself -- and at the time, I was a regional manager of our species-at-risk program -- and one of my team leads. The discussion topic is around what criteria would we use for the future critical habitat expansion that's been referred to previously.

The criteria in this email is early on or in the middle of that discussion. It is not the final criteria that was used. It's part of a conversation about what should we include.

Q Would Blairmore Creek have been critical habitat under the last bullet on point -- on page 2?

A So in terms of the final criteria that led to the critical habitat that we all see in the 2019 recovery strategy action plan, our final criteria around this -- that bullet that states previous critical habitat now designated as near pure.

In our final criteria, we went one step further. We included previous critical habitat that had a high confidence, whether it was assessed through our microsatellite, the old technique for genetic analyses, or through the SNP, or "SNP", genetics. So the threshold for what we included in the current version of the 2019 recovery strategy action plan only included previous critical habitat that was designated as pure under the old microsatellite technique. And under the new SNP analysis, it came back as near pure or hybrid, and our delineation of what was included was near pure with high confidence. We included those from a precautionary principle as critical habitat. And the results for Blairmore Creek, in particular, they came back -- they were near pure low confidence or lower,

which is the hybrid category, which I believe is 90 -- less than 95 percent pure.

So that segment originally in the 2014 strategy is no longer critical habitat based on the science and updated genetic analysis we did.

Q What is the genetic purity percentage for Blairmore Creek?

A Just give me one second to chat with my colleagues.

Thank you for your question, Mr. Yewchuk, and for the -- and for the Panel.

So based on the data analysis either through the microsatellite technique or the new SNP, or "SNP", techniques, the data that came back from Blairmore Creek and its tributaries, dominantly included hybrid, which is less than 95 percent purity. There are some segments within the Blairmore Creek catchment that had near pure designation.

Overall, when we're evaluating the purity for population, we take an overall average of the samples. So for Blairmore Creek, in the end, it came in as a hybrid population, less than 95 percent.

Q It's not possible to give any greater clarity than "less than 95 percent"?

A At this time it's not. So how we work the analysis as it relates to westslope cutthroat trout recovery are partners within Alberta Environment and Parks. They're

the ones that conducted and collected the data -- genetics materials. So we work from the results that they provide.

So at this time I couldn't give you the exact number.

Q When did AP do the genetic sampling?

A Just bear with me. I'm going to caucus for a minute.

All right. Thank you, Mr. Yewchuk.

And for the Panel.

Yeah. I don't have an exact date of when Alberta Environment and Parks collected the specific materials and did the analysis for Blairmore Creek, but I can tell you, from our partnership with Alberta as it relates to westslope cutthroat -- westslope cutthroat trout recovery, we've been collecting genetic materials since probably pre-2010, and we're still collecting that data now as part of our ongoing process.

As scientific techniques change and they get more accurate, we're always trying to increase our knowledge of the species, and in this case that transition of microsatellite and the SNP model is an example of that.

So the actual dates for Blairmore, I don't have those up, offhand.

Q Did DFO remove Blairmore Creek as critical habitat -- as being considered for critical habitat status in their internal drafts in February 2019?

A So DFO removed Blairmore Creek based on the results of the genetic analysis. In this case we've mentioned it came back as less than 95 percent pure or the category of hybrid. That management decision, yes, was made by DFO based upon the genetic results of all the populations.

Q So can we go to the top of page 2. Higher.

I believe both Ashley Gillespie and Martyn Curtis are on this panel. Right?

A That's correct.

Q Which pure section was asked to remain out from the criteria agreed to?

A So the actual section that was removed -- I'll explain why it was removed first, followed by my answers to which section.

So as we move through and finalize our decisions on what critical habitat would be included in the 2019 recovery action plan, we encountered one section of critical habitat where the genetic purity met the pure population criteria of 99 percent. The reason that was excluded from the current 2019 recovery action plan is for our need to complete our consultations with a nearby Indigenous community. And so because of that, the actual location I'm not going to share at this time. It would be best if we were able to complete our consultations with that Indigenous community.

And if I were to kind of move forward in time, looking at the recovery of westslope cutthroat trout, once that consultation was complete, we would be including that section into the next iteration of the recovery action plan.

Q Are you able to confirm whether it was part of Blairmore Creek?

A I can confirm that it's more than 200 kilometres away from the mine site and Blairmore Creek.

Q That is good enough for this purpose.

Did DFO give critical habitat status to only 30 metres -- well, first, DFO gave critical habitat status to 30 metres of riparian habitat around westslope cutthroat trout aquatic critical habitat?

A Just going to caucus with my team. One second, please.

Thank you for your question, Mr. Yewchuk.

And for the Panel.

Yes, I can -- what I can confirm is that for all of the westslope cutthroat trout recovery strategy -- or let me rephrase.

For all of the critical habitat identified in the 2019 recovery strategy action plan for westslope cutthroat trout, all critical habitat was also granted a 30-metre riparian buffer, identified as critical habitat for -- as one of my staff had mentioned earlier, the unique connection between, and the

importance of those upstream habitats, to the survival and recovery of the species.

Q Did scientific review indicate a larger zone of riparian habitat should have been included as critical habitat?

A Just give me one moment to discuss.

MR. YEWCHUK: Mr. Chairman, you'll be happy to know I only have two questions left, so we're almost there.

THE CHAIR: Okay. Thank you, Mr. Yewchuk.

A MR. CURTIS: Thank you, Mr. Yewchuk and Panel.

Can you identify -- or clarify which scientific advice you are referring to?

Q MR. YEWCHUK: Internal science reviews of the Department of Fisheries and Oceans. I can't be clearer than that. I'm sorry.

A Okay. So nothing specific in terms of a published report, but you're asking in general if science was used in the delineation of that 30-metre buffer?

Q I'll break it down a little.

Did the Alberta Government produce a report recommending a particular riparian zone?

A Okay. Just let me caucus. I'll be right back.

Again, thank you, Mr. Yewchuk, for the question.

We can confirm that the Alberta Government -- or

the Alberta Environment and Parks did produce a document. It wasn't a science-based or published-based document; it was a document that did -- took a snapshot what riparian buffers are already in operation as per the various criteria or legislation provincially in Alberta, and that document was part of our decision-making when we decided on a 30-metre riparian buffer for critical habitat.

Q You said 30-year [sic]. You just meant 30-metre; right?

A 30 metres, yes.

Q Correct.

Did DFO choose to identify a smaller amount of critical habitat for the westslope cutthroat trout than the westslope cutthroat trout recovery will need in order to accommodate future development in the Eastern Slopes?

A I'm just going to caucus. I'll be back in a moment.

A MS. TOYNE: Hello. Thank you, Mr. Yewchuk and Panel. Melanie Toyne speaking. I'll answer that question.

Absolutely not. Our critical habitat is based on best available information and is not influenced by any current or future development activities.

Q Did DFO get a science review and recommendation for the riparian habitat length?

A Hello. Thank you, Mr. Yewchuk and Panel.

We were just clarifying. Yes, science information was used in the evaluation and assessment and determination of critical habitat.

Q Sorry. Was there a science report, like a written report, about the -- with the critical habitat recommended?

A Are you -- can I ask which -- which published report you're referring to?

Q I'm not referring to a published report. I'm asking if DFO, who has a science advisory group, as I understand, got a science advisory on riparian habitat?

A Okay. One moment, please.

Okay. Thank you, Mr. Yewchuk and Panel.

We did discuss with our scientific team, but there is no document published on science recommendations of that critical habitat for westslope cutthroat trout.

Q Does that document exist, though, or are you just saying it wasn't published?

A When we identified critical habitat, there was no existing document.

MR. YEWCHUK: Okay. That's all my questions. Thank you. Thank you to the DFO panel.

I apologize, Mr. Chairman. That ran much longer than I had hoped it would. Sorry.

THE CHAIR: Okay. Thank you, Mr. Yewchuk.

It's 12:42, so we will take our lunch break now, and we will resume at 1:30. Thank you.

PROCEEDINGS ADJOURNED UNTIL 1:30 PM

Proceedings Taken via Remote Video

November 23, 2020 Afternoon Session

A. Bolton	The Chair
D. O'Gorman	Hearing Commissioner
H. Matthews	Hearing Commissioner
M. LaCasse	AER Counsel
B. Kapel Holden	AER Counsel
K. Lambrecht, QC	Joint Review Panel Secretariat Counsel
T. Utting	IAAC Staff
E. Arruda	AER Staff
D. Campbell	AER Staff
T. Turner	AER Staff
T. Wheaton	AER Staff
A. Shukalkina	AER Staff
M. Ignasiak C. Brinker	For Benga Mining Limited
R. Warden T. Howard	For Ktunaxa Nation

K. Poitras	For Métis Nation of Alberta Region 3
Chief B. Cote	For Shuswap Indian Band
B. Snow	For Stoney Nakoda Nations
R. Drummond S. McHugh	For Government of Canada
A. Gulamhusein	For Municipality of Crowsnest Pass
M. Niven, QC R. Barata J. Nijjer (Student-at-Law)	For MD of Ranchland No. 66
B. McGillivray	For Town of Pincher Creek
D. Yewchuk	For Canadian Parks and Wilderness Society, Southern Alberta Chapter
R. Secord I. Okoye	For Coalition of Alberta Wilderness Association, Grassy Mountain Group, Berdina Farms

		Ltd., Donkersgoed Feeder Limited, Sun Cured Alfalfa Cubes Inc., and Vern Emard
	R. Cooke	For Crowsnest Conservation Society
	G. Fitch, QC C. Agudelo	For Livingstone Landowners Group
	M. Sawyer	For Timberwolf Wilderness Society and Mike Judd
	(No Counsel)	For Barbara Janusz
	(No Counsel)	For Jim Rennie
	S. Elmeligi A. Morehouse S. Milligan M. Boyce	For Alberta Chapter of the Wildlife Society and the Canadian Section of the Wilderness Society
	J. Gourlay-Vallance	For Eco-Elders for Climate Action
	L. Peterson	For Trout Unlimited Canada

R. Campbell		For Coal Association of Canada
(No Counsel)		For Alistair Des Moulins
(No Counsel)		For David McIntyre
(No Counsel)		For Fred Bradley
(No Counsel)		For Gail Des Moulins
(No Counsel)		For Ken Allred
(Not Present)		
(No Counsel)		For Monica Field
S. Frank		For Oldman Watershed Council
A. Hurly		
C. Forster, CSR(A)		Official Court Reporter

(PROCEEDINGS COMMENCED AT 1:04 PM)

STEPHANIE MARTENS, TOM HOGGARTH, MARTYN CURTIS, MELANIE TOYNE, EVA ENDERS, JODY SMALL, AIMEE ZWEIG, BRANDI MOGGE, LAURA PHALEN, ROBYN KUTZ, KEN GLASBERGEN, PETER JOHN THOMPSON, BEN PLUMB, MARIE-CLAUDE SAUVÉ, JESSICA COULSON, ASHLEY GILLESPIE, MIROSLAV NASTEV,

MICHAEL TAKEDA, Previously Affirmed
MARGARET FAIRBAIRN, ANNE WILSON, Previously Sworn
THE CHAIR: Mr. Secord, did I understand you had something you wanted to raise?
MR. SECORD: I did, sir. Thank you.
As it turns out, I have one question for DFO, and with your permission, I'd like to ask it.
THE CHAIR: Okay. Sure. You can go now, and then we'll turn to Benga.
MR. SECORD: Thank you very much, sir.
Mr. Secord Cross-examines Government of Canada
MR. SECORD: Zoom Host, if you could please pull up Registry Document 553, PDF page 173. 173. That's 173. And if you could reduce it. Thank you very much.
And then if you could scroll down to the bottom. Perfect.
Q MR. SECORD: So my name is Richard Secord. I'm counsel for the Coalition, and this is a question for DFO and, perhaps, Eva Enders, who I understand is on the DFO panel.
And Mr. Yewchuk, just before the break, had asked DFO what science-based advice it had received for the buffer zone around Gold Creek, and I'm referring to you a -- the expert report of Lorne Fitch, and he refers to a paper of Caskenette, Durhack, and Enders, 2020.

And if we could turn over to PDF page 174. And it reads in the first full paragraph: (as read)

> Lastly, the authors' review of westslope cutthroat trout habitat concludes that "this suggests that the width of the meander belt should be considered as critical habitat".

So my question is to DFO: Can you confirm that Eva Enders was one of the authors of this report, and can you confirm that in the area of Gold Creek, the width of the meander belt in some places would be a hundred metres in width and perhaps even greater than a hundred metres in width?

A MS. MARTENS: Thank you for the question, Mr. Secord. Let us just caucus. Thank you.

A MS. MOGGE: Sorry for the delay. (UNREPORTABLE SOUND) is that okay? Okay.

Yes. Dr. Enders was an author on that publication, and our understanding is that Benga did not perform a meander belt width analysis in the EIS, so we can't confirm whether it was a hundred metres or any other measurement.

Q I guess my question for Dr. Enders is: Would she agree that it is quite likely that for Gold Creek, the area of the meander belt could be in excess of 100 metres? That would not be -- in other words, that would not be a surprising finding? Maybe we should hear from her.

A DR. ENDERS: Hello. Thank you for that question, Mr. Secord.

Mr. Chair, I must admit that I have never been on that creek, so it's really difficult for me to evaluate if the meander belt in certain regions in the creek is a hundred-metre wide or not. And our -- that report Mr. Secord is referring to really also states that you need to really look among that to -- for the -- for the width of the creek. Thank you.

Q And, Dr. Enders, what is the widest meander belt you've seen in the mountains?

A In the mountains. So I live here in the Prairies, and meander belts can be very wide.

Q Sure.

A In the Rockies, I really would refer to somebody who has local knowledge.

Q All right. Thank you very much, Dr. Enders.

And I guess, Ms. Martens, was there some reason that this paper -- this science-based information that you got from Dr. Enders -- that you didn't refer that information to Mr. Yewchuk in response to his questions earlier?

A MS. MARTENS: Yeah. Thank you, Mr. Secord.

Panel Chair, it's because the information contained within that paper was published after the RSAP was released.

Q Okay. Thank you, Ms. Martens.

MR. SECORD: Those are all my questions. Thank you, Chair.

THE CHAIR: Okay. Thank you, Mr. Secord.

Zoom Host, we can take that exhibit down.

And, Mr. Ignasiak, does Benga have questions for this panel?

MR. IGNASIAK: We do, Mr. Chair. Thank you.

Mr. Ignasiak Cross-examines Government of Canada.

MR. IGNASIAK: Maybe we could start with the Zoom Host bringing up CIAR 101.

Q MR. IGNASIAK: In the meantime, good afternoon, I guess, now, panel. My name is Martin Ignasiak. I know many of you, not all of you. I've just got some questions for Benga today.

If we can start, Mr. Hoggarth -- I hope I said that right -- Mr. Hoggarth, I saw you signed DFO's submission, and I hadn't seen your name in this proceeding previously on very many documents. But I did -- and I've asked the Zoom host to pull it up -- see your name on CIAR 101. That's a letter to the JRP dated November 21, 2018. I was wondering if we could just pull that up, take a quick look at it.

THE CHAIR: It should be up momentarily, Mr. Ignasiak.

MR. IGNASIAK: Yeah.

Q MR. IGNASIAK: All right. So I guess, Mr. Hoggarth, as I understand, when this JRP was formed or established in August of 2018, the Panel requested information of species at risk. And I understand this was your response to the Panel; is that right?

A MR. HOGGARTH: Yeah. I'd have to see the whole letter. But, yes, my assumption is you're correct.

Q Okay. And just so I understand, Mr. Hoggarth, given -- I looked at your CV. And so I take it when it comes to this project, you're not doing -- you're not issuing IRs or doing a technical review of Benga's materials; your role is more -- a higher policy role related to species at risk, generally; is that right?

A Well, my role as the regional director for this area -- or for Ontario Prairies is reviewing the documentary -- well, getting the advice from my biologists and then signing off on that. So my experts have provided me advice on this, and I sign off on it before going to the Panel.

Q Okay. Perfect.

And so you have never been to the project site?

A No, I have not.

Q Okay. And so this letter, you refer -- in the last bit of it, you refer to: (as read)

Previous request to Benga regarding potential

additions to critical habitat.

And you refer to Document 60 and 75, and those are Benga's IR -- or, sorry, DFO's IRs to Benga from February 2018 and June 2018. And we'll go to those later.

But those IRs, I noticed, were issued by Bev Ross with DFO, and I see you've copied her with this letter. Can you tell me who Bev Ross is?

A Bev Ross at the time was the acting manager for oil and gas, so the manager for Steph and Brandi and Laura.

Q Okay. And then all of these documents -- or this document from you as well as the two from Bev Ross that you referred to, they all say to contact Jason Shpeley. Can you tell me who that is?

A Jason was the assessor at the time that these documents were put together. So he's -- he would be similar to Laura and Brandi's position right now.

Q Okay. And the other name -- I think we saw it when Mr. Yewchuk was asking questions -- was Ernest Watson, who I noticed comes up in a lot of these earlier documents. Can you tell me who that is?

A Yeah. Ernest Watson used to work within our species-at-risk program. He's no longer there.

Q Okay. And then so I think, Dr. Enders, I heard your answers to Mr. Secord. Has anyone else on this panel -- on the DFO panel been to the Grassy Mountain

Project site?
A Staff, did you want to take ...
A MS. MARTENS: Good afternoon, Mr. Ignasiak. At this -- on this current DFO panel, Martyn Curtis has been to the project site, and he is the only one.
Q Okay. Thank you.
And, Mr. Curtis, can you tell me when you were at the site?
A MR. CURTIS: Good afternoon, Mr. Ignasiak.
I'm pulling from memory, but I was on-site and immediately downstream as part of one of our occurrences, a response to a material moving from Benga or the uphill coal mine site while it was being -- it was in a stage of pause or exploration, and, yes, we were notified of an event that led to sediment-laden water moving downslope towards Gold Creek and Blairmore Creek.
Q Okay.
A 2015, 2016.
Q Right. So you weren't there with respect to evaluating the project or anything. You were there because of a report of some sort of sediment deposit; is that right?
A That's correct.
Q Okay. All right. So switching gears -- and Mr. Yewchuk's already brought you there, and you have also read, I think, Benga's response, and there's a

long communication log that Benga filed. There's reference to Bev Ross and Mr. Shpeley and a number of meetings and site visit.

There's a reference to a Marek Janowicz. Can someone, just for the record, tell me who that is?

A MS. MARTENS: Sure. Marek is currently working on the TMX file. He used to be our acting manager as well in the office, in Edmonton, sorry.

Q Okay. Thanks.

Now, looking at the --

MR. IGNASIAK: And maybe, Zoom Host, the best would be to bring it up. It's the CPAWS submission, Document 555. And I'll be going to PDF 289. And, actually, I think it's PDF 384 I want. Sorry.

Q MR. IGNASIAK: So while that's being pulled up, this is the -- that Mr. Yewchuk referred you to, I think, DFO's response to -- I'm sure you all enjoy receiving those ATIP requests when you get them, but this is the response to Mr. Yewchuk's ATIP request. And what I really want to talk about -- and Mr. Sawyer touched on it, but there's reference at 384 to a meeting of June -- that took place in June of 2018 to discuss offsetting, and I don't think anyone on this panel was at that meeting, based on the notes.

But at PDF 385, and --

THE CHAIR: I don't think that was the

correct document, Mr. Ignasiak.

MR. IGNASIAK: No. I think that's right. I've been told that.

Q MR. IGNASIAK: While that's being pulled up, there's a reference at the end of the meeting minutes from that June 2018 meeting -- there's a reference to once the JRP's established, there'll have to be more formal communications between DFO and -- and Benga to discuss the project.

So I just wanted to clarify -- and I think Mr. Sawyer was touching on it --

MR. IGNASIAK: 385, Zoom Host.

Q MR. IGNASIAK: So you'll see -- you'll see there's reference: (as read)

> Continued dialogue between the proponent and DFO can occur after the Panel has been struck but would require formal documentation of engagement.

So is that an official DFO policy, I guess is what I'm wondering? Like, does that apply to all review panels, or is it on a case-by-case basis?

A MS. MARTENS: Thank you for the question, Mr. Ignasiak.

Not being at the meeting myself, I'm going to speak to what I think we're talking about here. And once the Panel's been struck and as part of the Panel

process, any documentation related to the file, discussions between DFO and the proponent need to be published on the registry, and that would be what I'm assuming is the "formal documentation" mentioned.

Q Okay. So in this case, then, for this proceeding, any communication since -- since 2018 -- August 2018, when this JRP was struck, they would be reflected on the record; right? For instance, the DFO letter of a few weeks ago advising of a meeting and IR request. That would be the extent of it; right?

A Yeah. Thank you.

All communication we've had with Benga has been reflected on the registry.

Q Okay. And that meeting that took place on October 20th -- and your counsel, as you know, posted a letter to the registry advising parties of that meeting -- that meeting, just to be clear, that was initiated at Benga's request?

A Yes. We can confirm that was initiated by Benga.

Q Okay. DFO's never asked Benga for a meeting, right, since the JRP was formed?

A That is also correct.

Q Okay. So I want to get into the IR process a bit.

MR. IGNASIAK: And if we could just pull up, Zoom Host, CIAR 167.

Q MR. IGNASIAK: And so, as you're aware, in

October of 2018, Benga filed its 8th Addendum, including a 3D leapfrog model. And then as we pull this up, Document 167, you'll see there's -- there's about 20 pages of IRs from ECCC and then 12 pages from Health Canada. So I think that brings us to -- PDF 35 is where the DFO submissions start. And there's four IRs attached to Ms. Ross's letter.

So I take it as of January 2019, Ms. Ross was still -- still responsible for this file, if that's the proper way to say it; is that right?

A MS. MARTENS: Yes, that's correct.

Q Okay. And I see if we -- if we look at this first page, she's included the standard language regarding critical habitat that we've seen in Mr. Hoggarth's previous letter as well.

Can we go to the next page? Thank you.

And so I see again we've got Jason Shpeley and Ernest Watson being copied. So I assume they were all still involved with this file as of January 2019; is that right?

A Yes, that's right.

Q And I understand shortly after this, all three of them were transferred to the Trans Mountain file; is that right?

A Not quite right. Ernie works for the Trans Mountain file. Both Jason and Bev took different roles within

the department still but not on Trans Mountain.
Q Okay. But they were moved off this file?
A That's right.
Q Okay. All right. And so switching gears to -- I understand we have four witnesses from GeoProcess Research Associates; right? Mr. Glasbergen, Dr. Plumb, Mr. Takeda -- hope I said that right -- Mr. Thompson; is that right?
A That's correct, yeah.
Q Okay. And so I just looked at all of those CVs, and so it's a little unclear to me. I just want to get some clarity.

I'm assuming, given the IRs I saw from DFO in February of 2018 -- there was about 41 of them; many related to hydrogeologic modelling and so forth. So I understand GeoProcess was retained in November of 2017 to help with those IRs, is that right, help prepare them?

A One moment. I'm just going to confirm. Thank you.

Mr. Ignasiak, that's correct, November of 2017.
Q Okay. And then I would take it that GeoProcess did further work in support of DFO's IRs to Benga in June of 2018. That's CIAR document 75. There's IRs regarding offsetting plan, the monitoring plan, and then a number of questions on fluvial geomorphology, hydrology, and hydrogeology. So is it fair that

GeoProcess assisted with the preparation of those June 2018 IRs as well?

A Yes, Mr. Ignasiak, we can confirm that we had GRA on contract as well in June of 2018.

Q Okay. And so one of their roles would have been to help with the preparation of those IRs; is that right?

A That is correct, yes.

Q Okay. And then looking at this -- this document that's still up, the January 21, 2019, IRs, did GeoProcess assist Ms. Ross and her team with the preparation of these IRs? And we can scroll to the next page if -- if you want to refresh your memory what they're on.

A Sure. Thank you. I'll also take a minute just to confirm, Mr. Ignasiak.

Sorry for the delay there. Yes, we did have GeoProcess contribute to this round of IRs.

Q I muted myself. Thanks. Thanks for that.

MR. IGNASIAK: Can we pull up, Zoom Host, Document 283? And if it helps, these are IRs to Benga from Canada on October 24, 2019. Sorry.

Thank you, Zoom Master.

Q MR. IGNASIAK: Yes. So the first 30 pages are IRs from Health Canada and ECCC and then DFO, I think, starts at PDF 31.

All right. So if we go to the next page -- so I take it, Ms. Martens, this is the first time I see your

name on here, and we see Ms. Phalen, Ms. Mogge. I hope I said that right.

So you would have -- you would have taken over this file sometime, I guess, between January of 2019 -- the end of January and October; is that right? Do you know? Can you put some more definition around that?

A MS. MARTENS: We're just reaching back in our memory. We think it would be closer to around the spring of 2019 when we began taking over the file from -- from the previous assessor.

Q Okay. And if we go to the next page, which is the beginning of the IRs, there's four IRs.

Ms. Phalen, you would have prepared these IRs, I take it, from your name being there?

A MS. PHALEN: Yes, that's correct. I would have been the technical assessor contributing to these IRs, and there is an internal review process as well. So others would have reviewed them.

Q Okay. And I didn't see anything specific to modelling here. Did GeoProcess assist these IRs?

A No, GeoProcess did not contribute to these IRs. They were not on contract at the time.

Q Okay. And so when I look at these IRs, these were issued just shortly before the recovery strategy and action plan was finally issued; right? The final version? So that was December?

A Yes, based on your timeline, that is correct. Although I should -- and just one moment. Let me just caucus for a moment here.

Thank you for the question.

So the final version of the recovery strategy action plan was not posted at this time; however, the -- I believe the draft version was posted for public comment.

Q I did it again. Sorry.

So I notice, unlike the previous IRs, this one did not tell Benga to update the critical habitat. Is there a reason that that request wasn't included in here?

A Thank you for the question.

I can't say that there was a very particular reason at this time. I would have reviewed the previous letters posted to the public registry, and it would have -- it was clear to me at the time that the -- that there was likely to be expanded critical habitat posted had already been made quite clear both to the Panel as well as to Benga. I think the -- if I'm remembering my time -- my timeline properly, when I took over the file in the spring, I had posted to the public registry for the Panel to be aware that the RSAP had been posted for public comment. So that's -- that's a previous record.

MR. IGNASIAK: Yeah. Okay. And then can we go to Document 347, please, Zoom Host? This would be the Government of Canada's comments on the 11th Addendum dated May 4, 2020. All right. If we can go to PDF 13 and scroll down, please, and onto the next page, please -- next two pages, sorry. That's great. Thanks.

Q MR. IGNASIAK: So, Ms. Phalen, you would have prepared these IRs as well?

A MS. PHALEN: That's correct, again, as the technical assessor, and they would have been reviewed by others.

Q Okay. So the general comments that -- the second sentence says: (as read)

> DFO cannot comment on the sufficiency and technical merit of the modelling.

So I take it, again, you didn't have GeoProcess provide any advice in connection with these IRs; is that right?

A That's correct. They did not review these specific IRs.

Q Okay. And, again, in these IRs, you didn't ask -- even though the recovery strategy was now final, you didn't ask Benga to do an update of critical habitat; is that right?

A Not explicitly in this communication, as I understand, although I'll -- I'll trust your -- your review of them

without fully reading them myself in this moment.
Q And so I take it one of the reasons you wouldn't need it at that time is to the extent Benga moves forward and applies for Section 73, as I understand the recovery strategy and its -- its reference to a bounding box, that's 'cause there's going to have to be a lot of site-specific work to define that critical habitat and detail, isn't there, before you would ever consider issuing a Section 73 permit?
A Mr. Ignasiak, I just want to make sure I understand fully your question. I feel it started one place and ended somewhere else.
Q Sure.
A So, yeah, maybe just restating it would be the easiest.
Q All right. So the recovery strategy finalized in December of 2019 contains discussion regarding a bounding box; correct? And it identifies what it thinks may be critical habitat but then sets out a number of things that have to be confirmed to finally define that critical habitat. You're aware of that part of the strategy?
A Yes, I am familiar with that -- that description.
Q Okay. And I take it as part of a Section 73 permitting process, that detailed level of work would be expected by DFO?
A That's correct. A detailed assessment of the habitat

that is being impacted would need to be provided.

Q Okay. Thank you.

So I wanted to switch to SARA permits.

I provided your counsel with some aids to cross. You have those, or you're aware of those?

A Yes, we are.

Q Okay. So I'd like to pull up one of them, and that is the AQ -- AQ Number 3. This would be an example of a Species at Risk Act permit issued by DFO in connection with the Trans Mountain Pipeline, right, if we go on to the following pages?

A Yes, that's correct. And I'll clarify that this is -- this would have been reviewed by DFO Pacific, so it -- the adjacent region.

Q Okay. Thank you.

MR. IGNASIAK: Mr. Chair, can we mark that as the next exhibit?

THE CHAIR: Any concerns, Mr. Drummond?

MR. DRUMMOND: None, sir. Thank you.

THE CHAIR: Thank you.

Can we get a number for that?

MS. ARRUDA: Yes, Mr. Chair. The next CIAR Number is 886.

THE CHAIR: Thank you.

EXHIBIT CIAR 886 - AQ#3 - BENGA - C07943 - 1 CONDITION 110_AUTHORIZATION(S)_FISHERIES

_ACT_AND_SPECIES_AT_RISK_PERMIT(S) - SWIFT_CREEK_BC32_BRUNETTE_RIVER_BC783A2AND783A4AUG18,2020-A7H9U7

MR. IGNASIAK: Then, Zoom Host -- I don't know if you like "Zoom Host" or "Zoom Master" more, but I like "Zoom Master", so I'll go with that. So AQ Number 4, please. Thank you.

Q MR. IGNASIAK: And if I'm not misunderstanding, I think -- Mr. Curtis, I think you were involved with the issuance of this Section 73 permit; is that right?

A MR. CURTIS: Just -- apologies. Can you just bear with me one second?

Q Yeah.

A MS. PHALEN: Thanks for the question. So just to clarify, Martyn's name is on this public posting as kind of the senior manager, but, to be helpful -- (UNREPORTABLE SOUND). I'm going to try again, no echoing.

Just to be helpful, I would have been the senior biologist on this, upon review, of the kind of deeper records.

Q Okay. Great. So this one struck me as odd. Just wondering if you could just maybe -- I'm going to ask for this to be marked as an exhibit, but if you could just give some colour to it. It says it's being issued

because it's beneficial to the species, but when I read it, it's to restore a creek that I think was affected to facilitate mining.

Can you just tell me how this one arose? It's a bit unique.

A Sure. So as I understand -- and I'm basing this partly off memory and partly from my understanding of the wording that's directly in this exhibit -- this would have been issued to -- this would have been issued in -- upon request from the proponent in order for them to carry out baseline -- or, rather, monitoring data, to collect monitoring data that was required under our previous authorization.

So, historically, an authorization was issued. That authorization required ongoing monitoring. Sometime after that monitoring was required, the species became listed as threatened.

Q Okay.

A And, therefore, for them to be able to undertake their monitoring, in order to harm, harass, capture the species, they needed to go in -- they needed a permit in order to be able to undertake that activity. So, yeah, I'll leave it there.

Q That's perfect. Thanks.

MR. IGNASIAK: Mr. Chair, if we could mark this as the next exhibit?

THE CHAIR: Okay. Any concerns, Mr. Drummond?

MR. DRUMMOND: No, sir. Thank you.

THE CHAIR: Thank you.

A number, please?

MS. ARRUDA: Mr. Chair, that would be CIAR 887.

THE CHAIR: Thank you.

EXHIBIT CIAR 887 - AQ#4 - BENGA - EXPLANATION FOR ISSUING PERMIT (19-HCAA-01173) PURSUANT TO THE PROVISIONS OF S - WATER TOPICS

MR. IGNASIAK: All right. Mr. Chair, I'm just about done. There's just two more documents I'd like to get on the record.

Q MR. IGNASIAK: I think this is for you, Ms. Phalen. I'm not sure, though. But Mr. Sawyer brought up the Fish Sustainability Index used by Alberta.

MR. IGNASIAK: Could we please pull up AQ Number 2?

Q MR. IGNASIAK: I think it was you, Ms. Phalen. I apologize if I'm incorrect. I think it was you talking about this. You would be familiar with these limitations and caveats of the FSI that are set out by Alberta? You're aware of this?

A MS. MOGGE: That was actually me who was

talking about it.

Q Oh, sorry.

A No worries.

And, yes, I am aware of them.

Q Okay. Thank you.

MR. IGNASIAK: Mr. Chair, can we mark that as the next exhibit?

THE CHAIR: Any concerns, Mr. Drummond?

MR. DRUMMOND: No concerns. Thank you.

THE CHAIR: Okay. Staff, a number, please?

MS. ARRUDA: Mr. Chair, that will be CIAR 888.

THE CHAIR: Thank you.

EXHIBIT CIAR 888 - AQ#4 - BENGA - 2014-LIMITATIONSCAVEATSFISHSUSTAINABILITYINDEX-MAY 2014B - WATER TOPICS

MR. IGNASIAK: We might stay under a thousand, Mr. Chair. That's pretty good.

Q MR. IGNASIAK: The next document I'd like to pull up is AQ Number 1.

And, Ms. Martens, in the DFO submission, there's reference to the Alberta coal policy from 1976 that I understand has been reviewed -- been rescinded.

I assume someone from DFO has reviewed that policy?

A MS. MARTENS: Yes. One of us has reviewed it.
Q Okay. And this is a 1976 coal development policy for Alberta that you refer to in your submission; is that right?
A Yes, I believe so.
Q It actually looks like it's from 1976. Okay. So thank you for that.
MR. IGNASIAK: Mr. Chair, if we could mark that as the next exhibit. And then if I could just get a minute to confer with my client, that would be great.
THE CHAIR: Sure.
Mr. Drummond, any concerns?
MR. DRUMMOND: Again, no concerns. Thank you.
THE CHAIR: Okay. Staff, a number, please?
MS. ARRUDA: Mr. Chair, that will be CIAR 889.
THE CHAIR: Thank you.
EXHIBIT CIAR 889 - AQ#1 - BENGA - 1114651976COAL-DEVELOPMENT-POLICY-FOR-ALBERTA 1976-06 - WATER TOPICS
THE CHAIR: And go ahead, Mr. Ignasiak, if you need a minute.
MR. IGNASIAK: No. I think we're good.

No further questions. Thank you very much, panel.

MR. DRUMMOND: Mr. Chair, not to speak out of turn, but before the Panel counsel proceeds, a small matter. I don't recall Mr. Yewchuk looking to have his aids to cross entered as exhibits. And, of course, it's his choice, but I'm wondering if he might want to do that at this time.

THE CHAIR: Mr. Yewchuk?

MR. YEWCHUK: I didn't think it was particularly important. If you'd like it marked on the record, I could do so.

MR. DRUMMOND: I'm not concerned myself.

MR. YEWCHUK: I'm not worried about it either, then.

THE CHAIR: Okay. Then we'll just leave it as is, I think.

Okay, Ms. LaCasse or Ms. Kapel Holden?

MS. LACASSE: Mr. Chair, I'd like to ask you if we could please have a ten-minute break so I can confer with my staff.

THE CHAIR: Sure. It's 2:15, so we will resume at about 2:25.

MS. LACASSE: Thank you.

(ADJOURNMENT)

THE CHAIR: Okay. Go ahead, Ms. LaCasse, or Ms. Kapel Holden.

MS. LACASSE: Thank you, Mr. Chair. Alberta Energy Regulator Staff Questions Government of Canada

Q MS. LACASSE: Panel, my name is Meighan LaCasse. I'm AER counsel to the Joint Review Panel, and I'm going to ask you some questions prepared by AER staff.

My questions will just be for the ECCC witnesses. My colleague, Ms. Kapel Holden, will follow me with questions for DFO.

So this morning you referred to in your presentation Section 36(3) of the Fisheries Act, and there's also reference to that section in your submission, which indicates that that section prohibits the deposit of deleterious substances into fish-frequented waters.

So my first question is whether selenium, sulphate, and other constituents of potential concern at the concentrations predicted by Benga at final discharge points to Blairmore Creek would be considered deleterious substances under Section 36(3) of the Fisheries Act?

A MS. FAIRBAIRN: Thank you for that question. I will just take one minute to talk to my team.

Q Thank you.

A Ms. LaCasse -- oh dear, sorry. Sorry.

We have Ms. Aimee Zweig on -- as well on our panel. I'll ask her to answer that part about deleterious. It's kind of a -- it's a little bit of a complicated answer to that question.

Aimee?

THE CHAIR: Ms. Fairbairn, just a reminder that ECCC witnesses should probably turn on their cameras just so we can see them.

A MS. ZWEIG: Hi, there. It's Aimee Zweig here.

So I can say -- so a deleterious substance can be any substance that, when it's added to water, can degrade or alter the water quality such that it can directly or indirectly harm fish, fish habitat, or the use of fish by humans.

So when we develop regulations under the Fisheries Act, we specify certain deleterious substances in the effluent from the regulated facilities, and then we authorize the deposit of --

THE COURT REPORTER: Sorry?

A MS. ZWEIG: -- limited quantities of (INDISCERNIBLE) concentrations of those substances in certain --

THE COURT REPORTER: Excuse me. Excuse me. I'm having a hard time. Can you repeat that? Your audio is crackling.

A MS. ZWEIG: Sorry. Let me see if I can turn it up. Is that a little bit better?

THE COURT REPORTER: Maybe.

A MS. ZWEIG: Okay. So I was just saying that a deleterious substance can be any substance that, when added to any water, would degrade or alter the water quality so that it could directly or indirectly harm fish, fish habitat, or the use of fish by humans.

So when we develop regulations under the Fisheries Act, such as what we're developing for coal mining effluent regulations, we typically specify deleterious substances that can be authorized for deposit in limited quantities or concentrations. So -- and under very specific circumstances.

So I hope that gets at your question.

Q MS. LACASSE: It'll just be one moment, please.

So would the chemicals that I listed in my question be considered deleterious?

A MS. FAIRBAIRN: I'll start, Aimee.

Margaret Fairbairn, Mr. Chairman.

So it's -- for a chemical to be deleterious, a sample -- we look at it as pipe discharges, so where it's being discharged. So that's just based on space in the pipe. It's not -- is not based on entering the watercourse and samples taken there. It's taken at the

actual source of the -- at what the effluent is.

So in the case of this project, if there's no regulation, you know, that we'd have to sample. It's based on a sample, and it's based on a laboratory analysis, and they determine what level of that chemical is deleterious, if it's deleterious, through a different series of tests: A bioassay tests, you know, acute lethality.

THE COURT REPORTER: I'm sorry, that last part?

A MS. FAIRBAIRN: Acute lethality. Sorry.

Q MS. LACASSE: All right. Thank you.

So my next set of questions relate to the coal mining effluent regulations which are referred to in your submission, and this doesn't need to be pulled up, but in CIAR 542, on pages PDF 24 and 25, there -- there's a high-level overview of the draft of that regulation, and it indicates on PDF 24 that the regulations are being developed under the Fisheries Act, and any permitted project conditions regarding end-of-pipe discharge limits may be regulated under future Fisheries Act regulations.

Is ECCC able to provide details on what parameters are being considered for end-of-pipe limits under the draft coal mining effluent regulations, or I believe they're referred to as "CMERs"?

A Aimee, can you take that question, please?

A MS. ZWEIG: Sure.

Thanks for the question.

Yeah. So we've been consulting on the regulations. We've been out four times, and the latest consultation was in February 2020 where we -- we published some material that included proposed limits at end of pipe for total suspended solids, selenium, and nitrate, as well as pH and acute lethality testing at end of pipe. And so those limits are -- are in publicly available documents. And I thought that we submitted that last document as part of this submission; but if not, I can -- we can certainly share that with the Panel.

Q If you can just give me one moment.

Okay. I'm advised that we don't need you to provide the document. Thank you.

So limits would be applied to the end of pipe -- or at the end of pipe, not after a mixing zone; is that correct?

A MS. FAIRBAIRN: That's correct.

Q Okay. And how did the CMERs define "end of pipe"?

A MS. ZWEIG: Well, it's at the point of deposit, I guess I would say, the best way to state it.

Q Okay. And focusing on selenium, can you provide some insight for my staff into what the proposed limits are?

A Sure. So for total selenium for existing mines, we

have a maximum monthly mean of 10 micrograms and a maximum grab sample of 20 micrograms per litre.

For a new mine, so a mine that starts operating three years after the coming into force of the regulations, it's 5 micrograms per litre, the maximum monthly mean, and 10 micrograms per litre, a maximum grab sample.

Q Okay. So would the Grassy Mountain Project be considered a new or existing mine?

A That -- so that depends on when it starts operating and when the final regulation is -- comes into force. So if the regulation came into force in 2022 and the mine started operating before 2025, within that three-year period, it would be considered an existing mine; and after 2025, given that scenario, it would be -- it would be a new mine.

Q Okay. What fraction of selenium would this limit apply to? What -- total dissolved selenate?

A It -- it's based on total selenium.

Q Okay. So staff noted what you said in your submission about pre-publication being targeted for 2021 and publication a year later. Is there any reason to believe that these regulations won't come into force or that they won't be published?

A MS. FAIRBAIRN: Well, I guess as -- that's a good question. We are working on them. Under the

circumstances with the pandemic, it has, you know, caused us to re -- readjust our priorities in trying to get this out, also, at the same time, ensure that we have proper consultation. So -- and maybe Aimee could add to it, but that's our -- that's our proposed timeline, and we're trying to work towards that under these circumstances. So that's the plan.

A MS. ZWEIG: I don't think I have anything to add to that. Thanks.

Q If the project were to exceed the end-of-pipe limits in the finalized CMERs, what would be the implications, from ECCC's perspective?

A MS. FAIRBAIRN: Margaret Fairbairn, Mr. Chairman. I can start.

But under the regulations, there will be a list of reporting requirements for that regulation, whatever -- whatever the end result is of that regulation, but there are reporting. If there's already compliance, then it goes into our enforcement side to look at inspections and possibly investigations. We work with the Province as well on these things, but ...

Aimee, do you have anything to add to that?

A MS. ZWEIG: I -- I guess I would just add that our enforcement branch has a compliance and enforcement policy that they use to enforce all -- all of the regulations of the department, and that is a

publicly available document as well.

Q On PDF 44 of your submission -- and, again, I don't think we need this pulled up, but, of course, you're welcome to look at it -- the first recommendations are to exclude application of a mitigation factor for sulphate and to reflect exposure scenarios based on operational selenate-to-selenite ratio.

So the question I have for you from staff is: If in the absence of a sulphate-mitigated selenium guideline, what would ECCC's recommendation be for setting an end-of-pipe limit for the project?

A MS. FAIRBAIRN: Ms. LaCasse, just one minute just to confer. Thank you.

A MS. WILSON: Thank you for that question.

It's Anne Wilson here. (UNREPORTABLE SOUND) And I'm just going to start by commenting that the guideline set in the receiving environment would be independent of the end-of-pipe number that would be set for the effluent in that we wouldn't really have exact ideas of what the loadings and the concentrations and the volumes being discharged were going to be. And all those would inform a back calculation of an end-of-pipe number.

So I think -- was Marie-Claude or Aimee going to add to that?

A MS. ZWEIG: It's Aimee Zweig here.

I would just add that the coal mining effluent regulations are designed as a national baseline standard and are not site-specific. They're meant to be a minimum baseline standard such that the provinces or other regulators can set site-specific requirements as required.

Q Thank you.

Would it be possible to resolve some of the concerns ECCC has highlighted around sulphate mitigation of selenium uptake by ensuring any selenium released is in the form of selenate?

A MS. SAUVÉ: All right. So this is Marie-Claude Sauvé.

So we take, like, a -- ECCC concerns relate to the development of site-specific selenium objective in surface water to account for the likely presence of selenite in the well course but also in the effluent of the -- of the mine. So unless it can be -- it can -- there would be some evidence of selenium speciation within the watercourse under natural condition and following the different treatment that Benga is proposing to -- to put in place, then we will still have that concern about -- about selenite not being actually mitigated by the effect of sulphate in the well -- in the watercourse.

Q Thank you.

If you were left with only selenate, would this alleviate concerns with the sulphate-mitigated objective?

A MS. FAIRBAIRN: One moment, please.

A MS. SAUVÉ: Sorry, I got disconnected from the -- from the phone, so it took a little while. Sorry for the delay. This is Marie-Claude Sauvé.

So that will -- that will alleviate our concern up to the -- up to the point that it can also be put in evidence that the natural condition in the watershed -- in the watercourse in Blairmore and Crowsnest River are also all in the selenate -- selenate form.

Q Just give me one moment, please. Sorry.

So would this require analysis of selenium species in a lab?

A Yes, it would.

Q Does ECCC know if this is feasible in a timely manner needed for regulating a discharge?

A I think that in one of the cross-examination, Benga said that it would not be able to do that on-site. However, this is quite common lab test, and we think that it should be available within a few weeks to analyze selenium speciation in water.

Q Just one moment, please.

And are you speaking of all selenium species: selenate, selenite, and organoselenium?

A Well, it would certainly be interesting to get the full speciation spectrum. However, I don't think that we will recommend the Panel to ask for so much. I think that if we already had a better picture of selenite versus selenate, that will already be something very useful.

Q Thank you, panel. Those are my questions. I'm going to ask you to now answer my colleague Barbara Kapel Holden's questions.

Q MS. KAPEL HOLDEN: (AUDIO FEED LOST) counsel to the Joint Review Panel, and I will be asking some AER staff questions of Fisheries and Oceans Canada. And I will direct my questions first to Ms. Martens. However, anyone on the panel can actually answer those questions.

And my first set of questions are in regards to the use of explosives.

MS. KAPEL HOLDEN: Can I please, Zoom Host, pull up Reference Number CIAR 542, which is part of DFO's submission, PDF page 245. Page 245, and it's section 4.3.2, "Blasting Activities Potentially Affecting Westslope Cutthroat".

So here DFO refers to Consultant Report Number 6 filed by Benga, which states: (as read)

The project requires the use of explosives and that without mitigation there is the

potential to cause overpressures greater than 100 kPa and vibrations that may cause damage to incubating fish eggs. The proponent has identified they will employ mitigation measures including applying blast delays to ensure that they meet guidelines outlined in "Guidelines for the Use of Explosives in Canadian Fisheries Waters" (Wright and Hopky, 1998).

DFO on this page also goes on to say that: (as read)

It should be noted that these guidelines are not currently accepted as a code of practice by DFO and that additional research has occurred since the publication of this document.

And, Ms. Martens, you made reference to that this morning as well. (as read)

In the context of habitat conditions at the proposed mine site and the presence of fish with small body size, the mitigation measures proposed by the proponent are not sufficiently protective.

Ms. Martens, just to clarify, what are the current blasting guidelines that proponents should be utilizing when conducting blasting activities on-site to ensure the protection of all life stages of resident fish

species?

A MS. MARTENS: Thank you for the question. Just give us one moment.

A MS. PHALEN: Thank you for the question. This is Laura Phalen.

The short answer is that there is not a single guideline that the proponent should be using. The -- I'll add a little bit of layers there.

So the 1998 guideline was a DFO standard at the time. Under the current regulatory framework, it's not a -- an established code of practice.

The other thing that I would add is that there is a difference between the Fisheries Act and Species at Risk Act, and the prohibition in the Species at Risk Act includes a prohibition against the harm, harass, or capture. So it's possible that blasting has the potential to be considered harm, harass.

I would advise that a proponent would be required in the context of a species at risk or in any context to undertake a site-specific assessment as to whether any of the published guidelines that are in the literature, including the -- the now historical guideline by DFO, is appropriate.

So to summarize again, the short answer is: There is not one clear guideline they should be using. Rather, they should be doing a site-specific assessment

and understanding the two pieces of legislation that apply here before they determine an appropriate level that they need to mitigate to.

Q Okay. Thank you.

And just to follow up on that, are you able to speak to the criteria that a proponent needs to achieve during blasting activities that will ensure the destruction of habitat, mortality, harm, and behavioural changes are avoided to protect westslope cutthroat trout in Gold and Blairmore Creek?

A Thanks for the question. One moment.

Thank you for the question.

The criteria -- so typically the criteria that are defined is in terms of kilopascal, and the reason for that is because it's at the body of the fish. So there are a lot of variables associated with blasting that can be adjusted in order to achieve that number, that overpressure, at the site of the fish. We do not dictate what the criteria or the way the proponent meets that overpressure would be, and it would be up to the proponent to perform a fulsome literature review of -- of the information and make an assessment as to how all of that information applies to this site to propose a final overpressure. And that would be part of an application to DFO, and we would review their rationale at that time.

So we wouldn't dictate the way that they meet that, and -- although we would need to -- before regulatory decision could be issued, we would need to fully understand the rationale and how protective that -- that final criteria would be that they -- that they would put forward.

I hope that answers your question.

Q Yes, it does. Thank you very much.

Moving on to my next question. And this might be a little bit repetitive in my preamble. But in your submissions you state that the "Guidelines for the Use of Explosives in Canadian Fisheries Waters" -- these are the Wright and Hopky guidelines -- are: (as read)

> ... insufficient to adequately predict and mitigate effects to westslope cutthroat [given] blasting activities that occur near fish-frequented water bodies have the potential to impact fish by causing behavioural changes, injury, or death, including potential impacts to fish eggs.

So my question is: Given the potential impacts discussed in the literature, can explosives be used in the proximity of critical habitat and still achieve the objectives set out in the recovery strategy and action plan for the westslope cutthroat trout Alberta population in Canada?

A Thank you for the question.

I would -- I suspect that it is conceptually possible. I can't say whether it's possible at this site because of all of those variables that go into understanding how the blasting protocol could be altered in order to achieve the on-site overpressure that would be protective of the species. That would be an assessment that the proponent would be required to undertake.

Q Okay. Just one moment.

Will DFO be reviewing the blasting protocols submitted by Benga in their consideration of an authorization under the Fisheries Act and the Species at Risk Act?

A If an application for authorization or a permit under Species at Risk Act were applied for, yes, that would be one pathway of effect that we would review for avoidance and mitigation, as well as residual effect.

Q Thank you.

And moving on to my next set of questions.

MS. KAPEL HOLDEN: Zoom Host, if I could ask to please pull up CIAR 42, Section C, and it's PDF page 113.

Perfect. Thank you.

Q MS. KAPEL HOLDEN: So in CIAR 42, Section C, PDF pages 113 as well as 116, Benga provided preliminary

dam classification with inflow design flood for the sedimentation ponds and surge ponds in Tables C.5.5-2 at the bottom there of the page and also C.5.5-6, which is on PDF page 116.

On Friday, Benga explained that it used the Canadian Dam Association consequence classification rating system for this table.

The overall classification in the table appears to be primarily driven by the environmental and cultural classification.

And also on Friday, Benga stated that it would update and revisit its classification for its dams using the Alberta Dam and Canal Safety Directive in its final design.

MS. KAPEL HOLDEN: Zoom Host, if I can get you to please pull up Aid to Questioning AER Q1. And I believe Mr. O'Gorman had used that on Friday, if I'm not mistaken.

And while we're waiting for that to come up, that is the Alberta Dam and Canal Safety Directive, specifically Schedule 1, which is found on pages 48 and 50.

Q MS. KAPEL HOLDEN: And I had provided a copy of this directive to your counsel last week. Who on the panel reviewed the directive and could answer my next set of questions in regards to pages 48 to 50?

A MS. MOGGE: Hi. This is Brandi Mogge. I can answer your questions.

Q Perfect. Thank you.

MS. KAPEL HOLDEN: And, Zoom Host, if you could put it on page 49 to -- yeah, 49 is perfect.

Q MS. KAPEL HOLDEN: So in Schedule 1 of the Alberta Dam and Canal Safety Directive, which is found on PDF pages 48 to 50, the defining criteria between an overall "high", "very high", and "extreme" consequence classification considering environmental and cultural values is the: (as read)

> Significant loss or damage to (a) critical fisheries; (b) critical wildlife habitats; (c) rare or endangered species; or (d) unique landscapes; (e) sites of cultural significance,

and a determination of the potential for restoration or compensation for loss or damages resulting from a dam or pond failure.

My questions to you are related to the fourth column on incremental consequence of failure, specifically on environmental and culture values. That is Column 4 in that table.

As you see in the consequence classification of "high", in Column Number 4, at the bottom, it says: (as read)

Restoration or compensation in kind for losses and damages highly possible.

Do you see that?

A Yes, I do.

Q Okay. And then in the next row, where the consequence classification is "very high", in the fourth column we have: (as read)

Restoration or compensation in kind for losses and damages possible but impractical.

And then the next row at the bottom there, where it says: (as read)

The consequence classification is extreme --

MS. KAPEL HOLDEN: And, Zoom Host, if we just move down to the next page, which is page 50.

Q MS. KAPEL HOLDEN: In Column 4 there it says that: (as read)

Restoration or compensation in kind for losses and damages is impossible.

So, Ms. Mogge, my question to you is: Given the status of westslope cutthroat populations in Gold Creek, the goal of maintaining genetic integrity, and the presence of critical habitat, does DFO consider the restoration or compensation in kind for losses and damages resulting from a dam or pond failure into Gold Creek to be highly possible, possible but impractical, or impossible? And, again, I'm referring to the

restoration or compensation in kind for losses and damages.

A Thanks. I'll need a moment.

Sorry for the delay. So I -- it's really dependent on the scale of -- of the impact and how significant the dam failure would be. I think that would be the deciding factor on how possible or feasible it would be to restore the habitat and also depending on the actual impacts to fish. Like, if there was a mortality -- like, if it was large enough, then that would also kind of tip the scales as to what is possible and -- and feasible. So really dependent on the scale.

Q Thank you. Just one moment, please.

My next question is: Can pure-strain population of westslope cutthroat in Gold Creek be replaced if the scale of the incident removes a significant portion of the population?

A Just one moment. Thanks.

Sorry for the delays. As you can tell, it's, I guess, a bit challenging for us to answer because it is very hypothetical.

A failure like that would leave a lot of uncertainty. So I think if we go back to what we've said in our submission, the genetics are important. This is one of ten populations that is within the range

of having a minimum viable population size. So there would be a lot of uncertainty as -- as to whether it would be feasible or not because of the importance of -- of the population.

Q Thank you for that answer. And just one moment.

Earlier today the Panel mentioned that there was a width that was optimal for meander width. Does DFO have a standard for optimal fish habitat for meander width?

A MS. MARTENS: Thanks for the question. Just give us a second here.

Q Will do. Thank you.

A MS. PHALEN: Thank you for the question. This is Laura Phalen.

So do you have a -- wouldn't -- state an ideal meander width? Because the meander width would be heavily dependent on the site-specific characteristics.

I would add to that that in a long-term project and when the proponent predicts effects into the future, they should take into consideration an understanding of the potential area within which this stream may naturally occupy in order to be able to predict the way that a project could interact with that into the future. So it's very site-specific, but there -- there should be -- or there -- there is the possibility to look at that particular site and

understand what would be ideal for that particular system.

Q Okay. And so you mentioned "site-specific". So there could be a variance between what is ideal in the mountains versus what's ideal in the Prairies?

A Thanks. One sec.

Thanks for the question. We're just going to have one of our colleagues, Ben Plumb, respond to that.

Q Thank you.

A DR. PLUMB: Hi. Can you repeat the question just one more time, please?

Q So there was mention that the width varies depending on the specific site, and so my question was: So I assumed that this varies between mountainous areas versus the prairie areas?

A Yes, it -- it certainly would. I mean, the meander belt width is a -- is a geomorphological metric that essentially relates to the width that a stream occupies on -- perpendicular to -- to the valley direction. Depends on things like underlying geology, flow regime, valley setting, slope, sediment type. So, yes, it would be very site-specific and short.

Q Okay. Thank you.

Just one moment.

Thank you very much, panel. Those are all of AER staff questions.

THE CHAIR: Thank you, Ms. Kapel Holden.

Mr. Lambrecht?

Alberta Energy Regulator Secretariat Questions

Government of Canada

MR. LAMBRECHT: Zoom Host, you can take this document down now. Thank you.

Q MR. LAMBRECHT: Panel, my name is Kirk Lambrecht. I am one of the counsel to the panel, and I will be asking you questions prepared by the federal analysts here.

In some cases, I will direct my questions to a particular department, and in other cases, I'll leave it to the panel to determine who is in the best position to respond.

MR. LAMBRECHT: My first question -- for my first question I would ask the Zoom Host, please, to pull up CIAR 357. And if we can go -- at the bottom paragraph of this letter from DFO.

Q MR. LAMBRECHT: I believe, panel, I'll direct this to DFO, but if there's another department that needs to answer, please do so.

In this paragraph, this letter from the department of Fisheries and Oceans, or DFO, indicates that: (as read)

DFO received an application for a Species at Risk Act permit on March 12th, 2020, on

behalf of Elan Coal Ltd. in relation to the potential advancement of a coal mining project in two distinct areas, Isolation South and Elan South.

Panel members, you're able to see that? And I take it you are familiar with this?

A MS. MARTENS: Yes and yes. Thank you.

MR. LAMBRECHT: Zoom Host, you can take that down.

Q MR. LAMBRECHT: Can DFO provide an update, please, on the nature and status of this application from Elan Coal? And without limiting the scope of the response which DFO may wish to provide, can DFO please comment on three matters: what the permitted activity is; over what time frame the permitted activity is to occur and where; and the species at risk potentially affected by the activity?

A MS. MARTENS: Thank you, Mr. Lambrecht. Just give us a second. We're compiling that information for you.

Q Of course. Thank you.

A Thank you.

A MS. PHALEN: Thank you for the question. I will -- I have the permit in front of me so I will provide a response. It may feel a bit segmented as I make sure I hit the right points.

So the first request was about the activity. I will add that this is available on the SAR public registry, just for reference.

So the activity relates to the collection of baseline fish population -- or, sorry, the conducting baseline fish population assessments and nonlegal tissue sampling of westslope cutthroat trout and bull trout.

One moment. Both of those species are considered species at risk. I believe they're both -- both of their status is threatened in this particular location.

The time frame for the permit, it -- it -- the activity would have ceased by, sorry, October 31st. The permit itself was issued in July, so that would have been the time frame that it started.

And as far as the location, I do have a summary, although for -- for a lot of the locations, they're unnamed creeks, and they have UTMs. So I can provide a summary but I would suggest that a very fulsome understanding of the exact locations would need to be referenced -- you'd need to reference the UTMs. But just one moment. I'll give you a summary.

Sorry, I'm on mute.

So there was -- the proposal included sampling in the Daisy Creek watershed, including Daisy Creek and Fools Creek, as well as in the upper Oldman River

watershed, including Manystick Creek, Shale Creek, Livingstone River. Spears and Hidden Creek were originally proposed, but I believe they did not find fish there. And then I have three -- sorry, four unnamed creeks with UTMs defined that would be within those watersheds as well.

Q Do you know if any of these are within the main stem or tributaries of Blairmore or Gold Creeks?

A I can confirm that they were not.

Q All right. Thank you.

I have a question about selenium, which I think I would direct to DFO and the Department of Environment and Climate Change Canada.

And do you think that the selenium objectives proposed by Benga would adequately protect aquatic life, in particular westslope cutthroat trout?

A MS. MARTENS: Thank you for the question. Just give us a moment, please.

A MS. SMALL: Hello, Mr. Chair and Panel Members. It's Jody Small with ECCC. Sorry. We're having some technical issues on our end when we're trying to -- (INDISCERNIBLE).

THE COURT REPORTER: I'm sorry. I can't understand you. Sorry. I can't hear what you are saying.

MS. SMALL: Okay, Claire. I'm going to try (INDISCERNIBLE).

Q MR. LAMBRECHT: Ms. Small, thank you. I understand you're having some technical problems, and perhaps headphones would work. Let's see if they do. I see you have them on now.

A MS. SMALL: Yes. I hope you can hear me more clearly now.

Q Are you able to adjust your volume on that? If you look in the bottom corner of your Zoom page, you might see a little up arrow beside the microphone, and that under "audio settings" may assist you in increasing the volume in the drop-down menu there.

MS. SMALL: Are you able to hear me more clearly now?

THE CHAIR: Yes.

MR. LAMBRECHT: Thank you.

A MS. SMALL: Okay. Thank you.

Apologies for that.

So, Mr. Lambrecht, it's Jody Small with ECCC. I will attempt to answer your question, and then I may also defer to my colleague Marie-Claude Sauvé to speak to the effects that we understand may happen to fish generally.

The reason that it's not a very straightforward answer is that we looked at the proposed objective and the limit that Benga had provided in terms of their water quality objectives, and we had raised some issues

with how those models were undertaken and how that objective was derived, and so we were unable to determine what effects specifically might happen to the westslope cutthroat trout in Blairmore and possibly, as well, Gold Creek because our -- our concerns were with the models of how the objective was established.

And so I can refer to my colleague as well to speak to, as I said, the effects of selenium on fish generally.

A MS. SAUVÉ: Okay. Thank you, Jody.

This is Marie-Claude Sauvé.

So, yes, indeed, the concentration of selenium in the receiving watercourse as proposed by the proponent may result in concentration of selenium in receiving water body that are -- are higher than water quality guidelines for selenium, and that's of certain concern for ECCC. The main issue of the effect cannot be estimated without -- (AUDIO FEED LOST) --

THE COURT REPORTER: I'm sorry. I'm sorry.

MS. SAUVÉ: -- and, indeed I cannot speak --

THE COURT REPORTER: I'm sorry. Can repeat that last part? You cut out.

A MS. SAUVÉ: Yes. Apologies.

THE COURT REPORTER: Sorry. I don't see you on the screen, either.

A MS. SAUVÉ: I'm not appearing on the screen.

THE COURT REPORTER: You are now.

A MS. SAUVÉ: Okay. So -- basically, so that the magnitude of the effects cannot be estimated without a reliable and robust risk assessment. I can't speak -- I cannot speak for the westslope cutthroat trout in particular but can describe some of the effects that are observed in fish in general, and the most sensitive and more common effect -- this is -- is very particular to selenium observed on fish exposed to excessive selenium concentration -- are second-generation effects.

So that include a lot -- effects that are observed on the larval stage principally through maternal transfer to the eggs, then reduce hatching, teratogenicity, which means deformities, and edema are amongst the most common effect observed in early life stage of fish, wild bird, and possibly amphibians.

MR. LAMBRECHT: Zoom Host, can I ask you, please, to pull up CIAR 571.

Panel, this would be Benga's hearing response submission.

And I'm going to ask the Zoom Host to turn in this document to PDF page 21 specifically.

All right. And could you please, Zoom Host,

increase the magnification of this? I'm looking at the paragraph above the blue line that is the header of that chart.

Q MR. LAMBRECHT: Panel, are you able now to see this on your screens?

A MS. FAIRBAIRN: Yes, we are.

Q All right. I want to draw your attention, please, to I think what is the third paragraph -- or third sentence in that paragraph where Benga refers to site-specific water quality objectives for coal and metal mines in British Columbia. And it says "these are generally" -- do you see that sentence there?

A Yes, we do.

MR. LAMBRECHT: All right. You can take this down, Zoom Host.

Q MR. LAMBRECHT: Is DFO or ECCC in a position to comment on the effectiveness of the selenium objectives downstream of coal or metal mines in British Columbia?

A MS. MARTENS: Thank you, Kirk. Just give us one second, please.

Q Okay.

A MS. FAIRBAIRN: Mr. Chairman, ECCC, we know there's downstream effects, and there is a lot of work being done in the Elk Valley, but our submission today here is all about the Grassy Mountain coal, so we

really didn't incorporate any information on that. There's a lot of publicly available information. The site-specific water quality objectives is from -- would be BC, so it's kind of -- it's basically -- can't be comparable, so -- and for this submission, for this panel, we just reviewed the Grassy, and we did not incorporate anything for the Elk Valley.

Q DFO, do you wish to add anything to that?

A MS. MARTENS: No, we do not have anything further to add to that.

Q All right.

MR. LAMBRECHT: Zoom Host, I'm going to -- panel, I'm going to move on to water temperature now, and, Zoom Host, I'm going to ask you to pull up CIAR 571 and PDF page 33. And, Zoom Host, the passage in this document that I want to refer to is in the middle of the document. It's the indented paragraph there that is indented after the sentence which begins "Benga notes that in Addendum 11 to the EIA". Thank you.

Q MR. LAMBRECHT: Panel members, are you able to see this on your screen?

A MS. FAIRBAIRN: Yes, we are.

Q All right. Here Benga is explaining its conclusions and stating that: (as read)

> The worst-case temperature increases

highlighted above occur in Blairmore Creek, where the effluent discharges relative to current creek discharges are far higher than any sediment pond releases anywhere on Gold and/or Blairmore Creek. The modelled effluent discharges will raise water temperatures by up to 3.3 degrees centigrade, which is well within the natural variation of temperatures already experienced from season to season and year to year. Therefore, the temperature change caused by the project discharges is not expected to adversely influence key westslope cutthroat trout bioperiods in either Blairmore or Gold Creeks and, therefore, do not pose a significant risk.

MR. LAMBRECHT: Zoom Host, you can take that down.

Q MR. LAMBRECHT: My question is directed to DFO, and it is: Do you agree that the temperature change caused by the project would not adversely influence key westslope cutthroat trout life processes in either Blairmore or Gold Creeks even if changes in temperature may be within the range of natural variation?

A MS. MARTENS: Thank you for the question.

Just give us a moment, please.

A MS. PHALEN: Thank you for the question. This is Laura Phalen. I'll provide you with a two-part answer.

First, I would like to identify that I don't -- sorry, DFO does not have confidence in the predicted temperature changes that the proponent has put forth primarily because we don't have confidence that all of the variables were included in the modelling. As I understand, the modelling was primarily based on flow, and because the majority of flow won't be affected by the project, I think that's where they're deriving their -- kind of the mixing and trying to understand temperature changes after mixture.

The challenge with that is that it doesn't fully account for kind of broader changes on the landscape that don't relate to flow, such as the loss of vegetation and the change in where the water sits on the landscape before it gets to the creek.

So I can't say with confidence that their predicted changes -- sorry, DFO can't say with confidence that the predicted changes are accurate.

I would add also, in the second part of my response, to say just because a temperature change remains within natural variation does not mean that it will not affect fish.

So, for example, in the recovery strategy action plan, there are a list of attributes defined as ideal habitat conditions for westslope cutthroat trout, and that temperature range may be exceeded by natural conditions. If the project were to then have an additive effect to that, you may -- you may be within the natural variation, but that doesn't mean it's ideal for the species or that it won't impact the species.

Q I have a question for Environment and Climate Change Canada.

Can you advise, please, if the -- Benga's proposed SSWQO methodology was conducted in accordance with the ECCC guidance for development of site-specific guidelines for water quality objectives?

A MS. FAIRBAIRN: Just one second. We're just going to converse for a few minutes. Thank you.

Q Thank you.

A MS. WILSON: Thank you for that question. It's Anne Wilson with Environment and Climate Change Canada.

In general, for their evaluation objectives for contaminants, Benga did use the CCME protocol from 2007 in which you would develop a species sensitivity distribution and then use that to determine a level at which the objective could be set. However, the application of a sulphate toxicity modifying factor

went well beyond what the CCME guidance provided.

Q MR. LAMBRECHT: Thank you, Ms. Wilson.

I'm just going to confer with federal staff to see if I have anything to follow up with.

Panel members, during my questioning of Benga's panel on water topics, I went over the offsetting plan that they had prepared. Were you observing that questioning?

A MS. MARTENS: Yes, we were.

Q All right. I won't repeat the display of the references. I'm simply then going to proceed to ask my questions on offsetting. I think you will be familiar with the topic.

First, DFO, do you have any recommendations for additional aquatic and riparian restoration and improvements to westslope cutthroat trout habitat in Gold Creek which might not be harmful to the species?

A Just one second, please. Thank you.

A MS. PHALEN: Thank you for the question. This is Laura Phalen.

DFO has not performed the detailed assessment of potential recovery or rehabilitation actions that could be taken on Gold Creek, and, further, we have not done an assessment as to whether any -- any potential restoration efforts may impact the species in their execution beyond what the proponent themselves proposed

in the EIS.

Q Does DFO agree that providing detailed plans for offsetting during a Section 35(2) authorization permit application is the standard approach for offsetting in mining projects like this? And does DFO agree that following this approach is appropriate in the context of this specific project and its circumstances?

A MS. MARTENS: Thank you. Just give us one moment.

A MS. PHALEN: Thank you for the question.

So it is typical for a project that undergoes both an EA and then a regulatory phase for there to be additional information provided in order to support the regulatory phase. The -- so that's my answer to the first part of your question.

In response to the second part, I would say that -- I'm trying to make sure that I remember what the second part of the question was. I would say that the -- whether or not that's appropriate here would be up for the Panel to decide. The level of information that they want in order to understand the potential for offsetting to be applied as a mitigation measure is up to the Panel.

Q DFO, are you aware of examples of monitoring that could successfully verify predictions respecting effectiveness of mitigation of the offsetting proposed

in this situation while also not impacting the population of westslope cutthroat trout?

A Thanks for the question. One moment, please.

Thank you for the question.

So, Panel Members, I will reiterate a point that Stephanie made during our opening remarks, which is to say that this project application is unique to DFO, particularly in our region, in that the scale of the proposed or possible critical habitat destruction is not something that we have seen before. So it would not be -- we would not be able to provide an example of where monitoring for this type of project indicated effectiveness; and, further, we would not be able to say whether the monitoring program could effectively avoid impacts to the population itself.

Q One moment, please. I'm just checking with staff.

All right. Thank you.

I need to return to Environment and Climate Change Canada. My understanding is that this department has stated that Benga's derivation of a sulphate-based selenium, SSWQG, went well beyond the 2007 ECCC guidance for derivation of site-specific guidelines. Is that a correct understanding?

A MS. FAIRBAIRN: One moment, please.

MR. LAMBRECHT: While you're doing that, let me say for the court reporter that when I use the

acronym "SSWQG", I mean site-specific water quality guideline.

A MS. WILSON: Thank you. It's Anne Wilson here.

I just wanted to clarify, Mr. Lambrecht, that the guideline in question was not Environment and Climate Change Canada's; it's actually the Canadian Council of Ministers of the Environment 2007 protocol that we had referenced earlier.

Q Thank you, Ms. Wilson. My apologies for the error in attribution.

A Marie-Claude, did you wish to pick it up from there?

A MS. SAUVÉ: Sure. So I am not aware of any site-specific water quality objective derivation guidance from Environment and Climate Change Canada. I'm not sure which document you were referring to. I'm sorry.

Q Ms. Wilson was suggesting it was the Council of Canadian Ministers of the Environment, she indicated a moment ago.

A Okay, so that's the one. Apologies.

So in the site-specific water quality objective for selenium, it was not derived accordingly to -- to CCME protocol from 2007. And it was a complete different method -- methodology.

Q Can I ask Environment and Climate Change, please, to

comment on risk for -- from selenium to westslope cutthroat trout given that predicted selenium concentrations in Blairmore and Gold Creeks during operations and post closure did not appear to decrease insofar as the modelling extends in that period of time -- or projected period of time?

A MS. FAIRBAIRN: One moment. Thank you.

A MS. SAUVÉ: This is Marie-Claude Sauvé.

So as said earlier, we cannot really speak about -- we did not perform a complete risk assessment of effect of selenium on westslope cutthroat trout in particular. I can describe a bit more the effect observed in fish in general if -- if you want to.

However, I can note that -- from the various species sensitivity distribution that my colleague Ms. Wilson was referring to earlier, will plot the various fish species in -- in function of their -- of their toxicity. Westslope cutthroat trout stand pretty much in the middle and acts as a typical fish in term of concentration of selenium cause and effect. I'm not sure that helps.

Q Thank you, Ms. Wilson [sic].

I would like to move on to calcite precipitation.

MR. LAMBRECHT: And I would ask the Zoom Host to pull up CIAR 313 at PDF 1075. This is Benga's response package to JRP Information Request Package 6,

Addendum 11. Thank you.

Q MR. LAMBRECHT: Now, Benga proposes to develop calcite precipitation monitoring based upon some of what Teck is doing in the Elk Valley, and Benga has attached here a definition from Teck about what calcite precipitation is and an illustration of a fully cemented stream in Porter Creek with a calcite index of 3.

MR. LAMBRECHT: Zoom Host, you can take this down.

Q MR. LAMBRECHT: Anyone on the federal panel familiar with the calcite monitoring program used by Teck in British Columbia? And if so, can you comment on this program's effectiveness and relevance for the Grassy Mountain Project?

A MS. FAIRBAIRN: One moment, Mr. Lambrecht.

A MS. MOGGE: Sorry, Mr. Lambrecht, can you restate the question?

Q Yes. Are you familiar with the calcite monitoring program used by Teck in British Columbia? And can you comment on the program's effectiveness and relevance to the Grassy Mountain Project before us?

A Sure. So from DFO's perspective, we did comment generally on calcite in our submission. I think, in general, we are familiar with the monitoring program in the Elk Valley. We don't necessarily have expertise to

speak to its effectiveness. We identified it as a pathway with the Grassy Mountain Project that has a lot of uncertainty with the effects. And generally looking at the monitoring that happens in the Elk Valley, there is the potential that -- you know, once calcite has deposited, that removing it is very challenging, if not impossible. So that was kind of the extent to which we spoke to it in our submission.

Q Are you aware of any other specific mitigation measures that have been shown to be effective in similar situations beyond monitoring and, perhaps, the development of a -- I believe Benga's mentioned a lime sludge plant, should monitoring for calcite precipitation demonstrate that calcite precipitation is occurring. Are you aware of any other specific mitigation measures beyond monitoring and, perhaps, this lime plant that had been shown to be effective in similar situations of potential for calcite precipitation?

A MS. MARTENS: Thanks for the question. Just give us a minute.

A MS. PHALEN: Thanks for the question, Mr. Lambrecht. This is Laura Phalen.

I'll give a general -- I'm going to give a broad answer here to say that the Canada panel does not have expertise to understand how the water chemistry or the

effluent chemistry could be altered in order to prevent calcite from forming in the -- in the creek.

Q Are you confident that a robust monitoring and mitigation strategy would be capable of detecting changes in calcite precipitation levels before population levels in the westslope cutthroat trout had taken place -- or before impacts on westslope have occurred?

A Thanks. Just one sec.

Thank you for the question, Mr. Lambrecht.

DFO is of the opinion that -- and based on our understanding, again, we are not experts in the chemistry here, but we are of the opinion that monitoring and mitigation would not be an appropriate way to break this particular pathway of effect. Avoidance would be the necessary approach.

Q Panel, I'd like to thank you for fulfilling your statutory obligations and coming before the Panel to provide some of your specialist knowledge to assist the Panel in its task. I have no further questions for you.

THE CHAIR: Thank you, Mr. Lambrecht.

Just before turning to panel questions, Mr. Secord, are you there?

MR. SECORD: I'm here.

THE CHAIR: Yes. I wanted to discuss

Mr. Locke. We had hoped to get him in today, but it is quite late. I know he has limited availability. So I know that he's not available tomorrow. Is he not available at all after today?

MR. SECORD: Before -- before I answer that question, can I tell you that he will be five to ten minutes in his direct evidence, if that's of any assistance. Of course, the great unknown is how many questions there are for him, which, of course, I don't know.

But I don't have that information about his availability later in the week. I could find that out. If we wanted to break now, I'll give him a call and --

THE CHAIR: I think -- I think if he is going to be that short, on the order of ten minutes, I think then we would probably just try and get him in today to finish up. I had him on the scheduling for an hour, and so I was concerned about how late we might go.

So I don't think the Panel will have many questions, so we should be able to get to him fairly soon.

MR. SECORD: Okay.

THE CHAIR: Thank you.

Mr. O'Gorman, questions.

Alberta Energy Regulator Panel Questions Government of

Canada

MR. O'GORMAN: Thank you, Mr. Chair. I do have a few. I'm hoping they should take on the order of 15 minutes if we -- if we can be pretty efficient in our time.

Q MR. O'GORMAN: So I have some questions both for ECCC and for DFO. Good afternoon to all of you.

A MS. FAIRBAIRN: Good afternoon.

Q Thank you, Ms. Fairbairn.

I'm going to knock these off fairly quickly. I have notes scribbled all over my page, but the short form is: I do want to explore a few things that I've heard from you folks that mostly touch on the potential interaction between things that ECCC and DFO might be responsible for in the future compared to recommendations and decisions that this Panel has to make and things that we are responsible for. So that should become -- I want to explore how those two intersect.

So I will start with my ECCC questions. And, of course, a potentially important piece of proposed regulation is the coal mining effluent regulation. It was spoken about earlier. Ms. Zweig or Ms. Fairbairn, this would be for you. I know you were asked about this, and I heard your answer, but I want to reconfirm or ask the question in a different way.

It's possible that that regulation never comes into force. Do you agree with that?

A MS. FAIRBAIRN: There -- there's always a potential of a regulation not coming into force in a timely manner, yes.

Q Right. So we can't count on the fact of it kicking in at some point and regulating selenium releases from this project, were it to proceed and be built?

A I think the time -- Aimee can speak to it in a minute, but I think that the goal is for 2021/2022 for a regulation, but I'll let Aimee -- we know regulations do take time. But I'll let Aimee finish off on the timeline, whether a regulation would be in effect when this mine is being built or approved.

A MS. ZWEIG: Yeah. Thanks for the question, Mr. O'Gorman.

I would -- I would just add to that that the government has signalled its intent to regulate. We have been consulting for -- for a few years on this, and in the absence of a regulation, the sector is under the auspices of the general prohibition against the deposit of deleterious substances. So -- so there is a -- there is a regime in place in the absence of the regulation at the federal level.

Q Okay. Thanks, Ms. Zweig. And hopefully I pronounced that correctly.

And I think this question is explicitly for you: My colleague Ms. LaCasse asked you about the distinction between whether this mine would likely be a new or an existing mine in your regulations. And it's -- it -- you know, it is striking that the regulation would likely come into effect, if all things proceed as currently planned, in 2022, but as long as a mine -- there's a three-year lag after that before a mine would be considered new.

Can you shed any insight? You know, what -- do you have formal rationale for why this three-year lag exists, why a mine would not suddenly be a new mine if it came into -- if it started operating after 2022 instead of 2025?

A So I think -- you know, it's a good -- this is a good question, and it's -- it -- there's a number of factors that we take into consideration when we're thinking through these kinds of provisions.

So new mine provisions are often proposed because you have the benefit of designing a mine from scratch to try and achieve better environmental outcomes than an existing operation. So that -- that's the first thing that I would say.

The second thing that I would say about the provisions is that there is a -- there is a period of time that's required to come into compliance often with

these types of regulations, so whether it's building a treatment facility or whatever kind of technology is required, building diversions, et cetera, there's -- there's a ramp-up time in order to get to a place where you can come into compliance as an operator. So -- so that's some of the thinking behind -- behind the limits and -- and how we draw that or propose to draw that line. I would add, they are proposed regulations, and they are subject to change, so another thing to keep in mind.

Q Okay. Those are both useful answers. Thanks.

It helps us understand the potential regulation a bit more.

Just a -- so there's one puzzling thing to me, as I think about it. So the regulation is defined in terms of the limit at the point of discharge. We typically think of -- I can't remember the exact word used. I think you said "point of discharge". Was that right?

A (NO VERBAL RESPONSE)

MR. O'GORMAN: She nodded "yes", Ms. Court Reporter.

A MS. ZWEIG: Yes. Thank you.

Q MR. O'GORMAN: So how would that -- so we understand what that means for, let's say, a project like this, where they have effluent come in from their

saturated backfill zone, treated, and then at some point released into Blairmore Creek. Can you tell me how the regulation applies, if it does, to seepage?

And I -- while you think about that, of course, the point is we have heard that several different structures on the mine site might, through seepage, through groundwater, release selenium into Gold Creek over the lifetime of the mine and beyond. And it doesn't occur to me how we think about your regulation in a world where -- would it apply to, perhaps, more slowly increasing levels of selenium in Gold Creek due to seepage through groundwater?

A Thanks for the question.

So -- so the way the current proposal works is that the only -- the only authorization is for the release of effluent through a final discharge point. Diffused effluent containing the deleterious substance that's deposited to water frequented by fish, such as seepage, could be a violation of the general prohibition; therefore, it -- ergo, it is not authorized under the regulation.

Q Okay. Interesting. I mean, to test if that was the case, would you need to do some sort of groundwater flow test to determine if it was that project that was the source, to know if the general prohibition was invoked? I realize I'm pitching a hypothetical to you

that you might not have thought about, but I'm curious how that might work.

A So the design of the coal effluent -- the coal mining effluent regulations is -- is reasonably similar to what we have under the metal and diamond mining effluent regulations, for example. And in a case -- in a hypothetical case such as you just posited, our enforcement colleagues would -- would implement their compliance and enforcement policy, and they may -- they may come and take samples to try and determine whether there's a deleterious substance being deposited --

Q Okay. That's --

A -- not authorized by the regulation.

Q Okay. That's a good example. So thanks for that comparison.

A Yeah.

Q Okay. Another hypothetical situation.

A M-hm.

Q Let's assume this Panel decides to accept Benga's proposed site-specific water quality objective in some form which is tied to the eventual concentrations of selenium in Blairmore Creek mitigated by sulphates, concentrations that presumably are measured after some mixing zone, however -- whatever that mixing zone looks like, so not measured at end of pipe but tied to the eventual concentrations at Blairmore Creek. A

fundamentally different structure, I would suggest, and potentially you agree, then what the CNAR would propose in terms of a structure of where they would have to meet a certain level; right?

A Sorry. I'm not sure I understood you.

Q I'm saying: Let's say we assume -- let's say we agree with Benga's proposal. We allow for a site-specific objective, which is not measured at the pipe but is -- in terms of concentrations in Blairmore Creek, which allow for some mixing and at the concentrations after some mixing stabilize at -- well, we've seen some of the numbers in this hearing that they have projected we might see in concentrations for selenium. Your regulation would be sort of a measurement at the pipe and not allow for any mixing.

So I first wanted you to confirm: Those would be two different kinds of -- of limits that they would have to consider; correct?

A That's correct.

Q Right. So what happens if we do approve that, your regulation comes into effect, and gives them something different? Is it your understanding that -- I say "your regulation". You know what I mean. Is it your understanding they would have to comply independently with both regulations, or, as sometimes happens with federal, provincial legislating issues of common

concern, would there be the potential for one or the other rule or requirement to stand down and allow the other to do all the work? What are your thoughts on that?

A So I can -- I think you've asked me two questions there, Mr. O'Gorman.

The first -- the first question about whether Fisheries Act regulations can apply at the same time, I think, as a provincial regime, and the answer is yes. The proponent would be required to -- to comply with both regimes, certainly.

The second question about whether a regime can be stood down, I think, one or the other, whether it's provincial or federal, so the Fisheries Act does allow for equivalency agreements. You need to have a regulation in force in order to consider equivalency and then -- and then a discussion and an analysis can happen between the regulators to determine whether the regimes can be considered equivalent in effect. And that -- that has been done in the Fisheries Act -- in the context of Fisheries Act regulations in the past. Wastewater system effluent regulations, there is -- there is equivalency agreement in place for that regulation --

Q Okay. Thank you.

A -- with one of the -- with one of the territories.

Q So I do wonder -- and I recognize in asking you these questions you certainly can't speak to whether that might take place in the future. Some future minister would ultimately decide such things. And we wanted to understand the scope of things that might happen.

Okay. Those are all really useful answers. Thank you.

One more. And I think this is probably -- I think this is for Ms. Sauvé, actually.

Ms. Sauvé, I want to see if I remember. We don't have the transcript because the conversation only took place 45 minutes or so ago. But my friend Ms. LaCasse was asking you questions.

Are you up, Ms. Sauvé? Oh, there you are.

A MS. SAUVÉ: Yes.

Q Okay. My friend Ms. LaCasse was asking you a few questions, and let me paraphrase something that I think I heard. Tell me if you agree that this is sort of what you said.

I think that she asked you about your recommendation five one, which I -- well, Environment Canada's recommendation, which was the one about recommending we drop the sulphate-adjusted element of a selenium guideline for the project. You can look that up on your own. I'm sure you probably remember that one.

And I -- I think there was a question that you basically indicated you would need to be comfortable with the projected selenite versus selenate and there being information on the record about the selenite versus the selenate that is coming out in effluent from this project.

Did you -- do you remember that conversation?

A Yes, I do.

Q Great. So is it right for me to say that what I understood you to say was: If there was -- I want to make sure I get this straight because I only asked if you remember the conversation. So now that you remember it, are you saying that ECCC could potentially -- recognizing you can't speak on -- at levels higher -- for your minister, but ECCC could potentially be comfortable with allowing a sulphate adjustment to a site-specific selenium guideline if, in this process, there was adequate information on the record to convince you that your concerns about the release of selenite versus selenate were addressed, and you -- I assume by that you mean there wasn't much selenite, but you can tell me what you meant by that.

A Yes. So I cannot really speak about the regulation or anything like that. I should not have used the word like "recommending". I take that -- rather express some concern about the methodology that -- that was

used to derive that site-specific objective, notably, the development of the enrichment factor that was based on tests done only on selenate. So, basically, they exposed the algae to selenate only and not to a mixture of selenate and selenite that will correspond to the speciation in naturally occurring environment. And as a result of the anthropogenic activity, in that case, the coal mine.

So our concerns will sure be -- which should be much less if the water quality -- if a certain site-specific water quality objective would -- would take that into account, will have the correct selenium speciation ratio used to -- to produce a risk assessment and objective that really takes that into account.

Of course, I cannot really speak about the exact concentration of selenium that will -- that will be released, given the treatment. We are not expert -- I'm not an expert in those treatment.

However, I can say that there seem to be still a bit of uncertainty there. So I'm -- if we had the correct speciation ratio, that will sure be reassuring.

Q Okay. Thanks, Ms. Sauvé.

So I think you agreed with me that I sort of -- at least sort of captured what you had said earlier, because it leads me to sort of this point: You made

reference earlier to you could have more comfort if you had seen the information on the record about what the actual speciation would be. You've -- can I ask: Have you taken a good look at the record related to the subject area for what we have right now and listened to this hearing? Have you examined the record on this topic about the potential speciation?

A What record? Sorry.

Q The record of the hearing. Sorry. The registry documents that relate to potential speciation at the end of -- or during the project.

A Yes, I think I've seen them all --

Q Okay.

A -- or almost all. I may have --

Q So I just --

A I don't know.

Q So I just wanted to ask that to confirm: Have you seen that information that you think you would need to increase your comfort level or not?

A No, no. I've seen only one place where it has a certain mention of speciation, and it's in the CIAR 555 from CPAWS that shows the result of the current test, which I understand is similar to the gravel bed reactor that may be added in replacement or -- or subsequent to the SBZ.

So that's the only place where I saw something

that -- that really speciation -- selenium speciation testing.

Q Okay. Okay. Thanks, Ms. Sauvé.

That's it for my Environment Canada questions. And I will wrap up with two for DFO, please.

I don't think -- well, maybe we should haul it up. I'm interested in -- well, why don't I -- why don't I not haul it up to save a bit of time, and I'll ask you folks to look it up from DFO, please. In your hearing submission on PDF --

MR. O'GORMAN: Zoom Host, let's haul it up, please.

So it was Registry Document 542, which is the submission by the Government of Canada. We've had it up several times today, that -- that document. We're looking at PDF 261, please. And then let's blow it up so we can actually read it and look at the very bottom of the page. A little bit bigger, please, Zoom Host. My eyes are not what they once were. Is that PDF 261? 2 -- is this the right -- is this your hearing submission? CIAR 542?

Can someone tell me if I have the wrong registry number for the Government of Canada hearing submission? I thought it was 542.

A MS. MOGGE: This is correct.

Q MR. O'GORMAN: Okay. I'm looking for DFO

Recommendation 4, the one to do -- to do with offsetting being verified. Does anyone know what page that's on?

A MS. PHALEN: It should be Document page 19. It's not PDF page, but document. See how it's 33 right here?

Q Okay.

A 247. Sorry. I just have the printout in front of me, not the PDF.

Q There's Recommendation 4. Okay. I apologize for my notes getting -- the wrong thing written down.

And then model (INDISCERNIBLE) water temperature. No. Which was -- okay. Let's forget this.

I'm going to ask you folks -- Ms. Martens, from DFO, you had a recommendation to us which had to do with proposed offsetting measures being verified before the project moved forward. Do you remember that?

A MS. MARTENS: Yes, I do.

Q Do you remember which recommendation that was? Because it doesn't look like it was Number 4, based on what we just read.

A Sure. Let me just have a look here. I don't remember off the top of my head, either. Okay. I think it's Recommendation 15, Mr. O'Gorman.

Q Okay. And do you have the PDF page number that you could tell our Zoom Host to show us?

A MS. PHALEN: It's Document page 39. I don't have the page -- the PDF page number.
Q It's going to be in the 200s because the DFO section was much later.
A We have it. We do have it open. Just give us a sec. 267.
Q Oh, I wrote 7, and it's a -- it's crossed over by a line above that.
MR. O'GORMAN: PDF 267 in that document, Zoom Host. I was so good in calling up the right documents for days in a row, and I blow it today. My apologies.
Q MR. O'GORMAN: But there we go. So Recommendation 15 is that -- this is the one which says we need to verify it before it goes forward, update the quantification.
MR. O'GORMAN: Can you scan down on the page, Zoom Host? Oh, oh, oh. That's why I said "Number 4". It was Point 4 in Recommendation 15. My bad.
Q MR. O'GORMAN: Point 4 says: (as read)

> Offsetting measures should be implemented and verified as functional before any impact occurs to pure WCT subpopulations.

You agree that that's what you proposed to us?
A MS. MARTENS: Yes, that's --
Q Thank you, Ms. Martens.

All right. Can you tell us how that would work in

real life? I can make a proposal to you and you can agree with it or not, if you'd like, or you can do it in your own words.

A Okay. Just give us a sec.

Q Great.

A Hey, there, Mr. O'Gorman.

We've elected to let you put it to us such that we reduce our speculation at this point.

Q Okay. So it's late in the day. But in really abbreviated terms, I think that you are saying to us that following potential approval of this project, were that to happen, Benga would have to -- whether they be the currently proposed offsetting measures or some new ones that you would resolve through a future regulatory process, that Benga would need to go out -- get out in the creeks and in the riparian habitat, implement those measures, monitor them for some period of time, which would likely be measured in years, plural, and demonstrate effectiveness before they would be allowed to proceed with constructing their project. Is that what this is saying to us as your recommendation?

A MS. MOGGE: Okay. This is Brandi Mogge. I will take a crack at it. So generally, yes, we would agree with, I guess, the caveat that it wouldn't be the project moving forward but from the point of impact. So the offsetting -- construction of offsetting and

proving it effective would be required prior to impacts to critical habitat that might not exactly coincide with, you know, other construction activities that the -- the mine has.

Q Okay. That's actually a really important clarification and -- and, yes, turns what I said on its head, because they could proceed potentially with construction if they were, at the same time, monitoring critical habitat in Gold Creek and being careful not to potentially impact that habitat and the fishes that live in there until they could demonstrate to you that the offset measures weren't; right? Potentially? To satisfy -- to satisfy this recommendation. Right.

Okay, that's useful to understand.

Last question, and then I'll be done: My friends from DFO, you heard me describe to -- just a few minutes ago to your colleagues from Environment and Climate Change Canada my concern or questions around the potential for seepage of selenium from some of the waste rock dump areas and end-pit lake potentially, surge pond. You know, a number of different structures on the east side of the project might seep selenium into Gold Creek, which is where the critical habitat is.

I've read -- and I've read through twice to make sure I did -- I -- I -- whether it was there or not,

but I have read DFO's proposed policy on allowing for offsetting for SARA. You know the document I'm referring to; right? It was discussed earlier today.

A MS. MARTENS: Just to be clear, that's the 2016 proposed policy document?

Q That's the document, yes.

A Okay.

Q So I read through that carefully, and it -- tell me if you agree with this: As I read it, it entirely focused on impacts -- allowing for offsetting of impacts to habitat through things like changes in flows, changes in temperatures, other sorts of -- digging new pools, the whole -- that sort of suite of potential impacts to habitat are the sorts of things that that policy measure is meant to allow offsetting for. Does that sound right to you?

A MS. PHALEN: Thank you, Mr. O'Gorman. This is Laura Phalen.

The DFO network is being cranky at this particular moment, and the beginning of your preamble cut out for us. So I just want to clarify that the question was -- and I'll provide a summary; you can tell me if you agree -- that the 2016 policy and the framework for offsetting is more applicable to a physical habitat offset rather than changes caused by chemical alterations?

Q Well, you actually presupposed the next thing I was going to ask, but you do see where I'm going with this.

So essentially -- essentially, with what I said before and what I'm about to say, yes, that's what I'm asking you. And what I'm about to say is: I didn't see anything in there that talked about allowing for things like extra contamination into critical habitat where the critically protected fishes are swimming around and laying eggs and living their lives as being the sort of thing your offset policy proposed -- offset policy under SARA would allow for. I wonder if you agree with that?

A Thank you, Mr. O'Gorman.

You are correct. Our permitting policy -- we don't have the ability to permit the deposition of deleterious substance. So as we've described before, it's Environment Canada that's responsible for that prohibition. There's no way to say, Under certain circumstances, you are exempt from this with -- in the absence of a regulation. So the regulation that Aimee was discussing earlier is the only way that you can deposit a deleterious substance.

So unlike with the physical habitat destruction, we can't permit that harm and then ask for offsetting for it. There's no framework for that.

Q Okay. I think that about answers my questions. Yeah.

I mean, I recognize it's a bit -- maybe something a little unexpected, actually, but I appreciate everyone digging in and trying to come up with answers to my late-in-the-day questions.

Panel, we really -- you know, the whole panel, we really appreciate all of you taking the time, the long hours, especially those of you in time zones not in Alberta, to stay late for this process, so thanks for all of your work.

MR. O'GORMAN: I don't have any more questions, Mr. Chair.

THE CHAIR: Thank you, Mr. O'Gorman.

Zoom Host, yeah, you can take that down.

Mr. Matthews, any questions?

MR. MATTHEWS: Good afternoon or evening, wherever you are, but I'd like to echo Mr. O'Gorman's comments that you guys have done a great job today, and I want to thank you for your contribution. Thank you. I have no other questions.

THE CHAIR: Okay. Thank you, Mr. Matthews.

I have no questions for you, either, so, again, appreciation to the federal panel, Ms. Martens, Ms. Fairbairn, and everyone else, for your written submissions and your time here today.

Mr. Drummond, any re-direct?

MR. DRUMMOND: No, sir. Thank you.
THE CHAIR: Okay. Thank you.
(WITNESSES STAND DOWN)
THE CHAIR: So we do still have the issue of Mr. Locke. I'm hoping, Mr. Secord, that I don't regret this, that it's not a lot more than ten minutes, because I will be very unpopular if that happens.

Madam Court Reporter, would you like a little break? I'm thinking we probably have maybe 20 minutes to a half an hour, but that's a little uncertain, so perhaps we should take a bit of a break.

Yes, I'm getting a nod. Let's take ten minutes, and then we'll hear from Mr. Locke. So it -- that will be 10 after five.

MR. SECORD: Thank you.
(ADJOURNMENT)
THE CHAIR: Okay. Mr. Secord, please go ahead.
Direct Evidence of Coalition of Alberta Wilderness Association and Grassy Mountain Group
(Water, including surface and groundwater management, quantity and quality, selenium management and aquatic resources, including fish and fish habitat and fish species at risk)
MR. SECORD: Thank you, sir. I would like to introduce Mr. Locke to the Panel. He is a

registered professional biologist. He reviewed Benga's environmental flows or instream flow needs assessment and evaluated the potential for flow-related effects on westslope cutthroat trout in Blairmore Creek and Gold Creek.

Could we have the court reporter affirm Allan Locke, please?

ALLAN LOCKE, Affirmed

Q MR. SECORD: Mr. Locke, I am referring you to your curriculum vitae, which was filed as Appendix F of CIAR 553 at PDF 147, and your report dated September 20, 2020, filed as Appendix E of CIAR 553 at PDF 134.

Were these documents prepared by you or under your direction and control?

A MR. LOCKE: Yes.

Q Are there any changes that you would like to make to these documents at this time?

A I do not wish to make any changes.

Q Are these documents accurate, to the best of your knowledge and belief?

A Yes.

Q Do you adopt your report as part of your evidence in these proceedings?

A (NO VERBAL RESPONSE)

Q Sorry, I didn't hear you.

MR. SECORD: He's frozen.
THE CHAIR: I think he might have froze.
Q MR. SECORD: Oh, you're back. I think you just froze, Mr. Locke.
So my question was: Do you adopt your report as part of your evidence in these proceedings?
A Yes.
Q Mr. Locke, do you acknowledge that you have a duty to provide evidence to the Joint Review Panel that is fair, objective, and non-partisan?
A Yes.
Q Mr. Locke, would you please provide the Panel with a brief summary of your professional qualifications and experience.
A I'm a member of the British Columbia College of Applied Biology and the Alberta Society of Professional Biologists. I belong to the Instream Flow Council, which is an organization of provincial and state fish and wildlife biologists who are dedicated to protecting, maintaining, and restoring aquatic ecosystems.
I have worked as a biologist since the late '70s. I worked for two years in the fisheries branch of the Ontario Government. I then worked for the -- a conservation authority in Ontario for a couple of years. After that, I was the provincial aquatic

habitat protection biologist in the Alberta Fish and Wildlife division from 1981 to 2013. During that time, I dealt with all aspects of aquatic habitat issues, with my main focus being on instream flow needs. I represented Fish and Wildlife interests in water management planning processes in the province.

When I left the Alberta Fish and Wildlife division, I started a consulting company. As a consultant, I have worked on environmental flow-related projects for the World Wildlife Fund, the Canadian Council of Ministers of the Environment, the Department of Fisheries and Oceans, the Texas Water Board -- or Development Board -- Water Development Board, the Northern Saskatchewan Watershed Alliance, and I've done some water sourcing for oil and gas companies in British Columbia and Alberta.

Q Mr. Locke, would you please provide the Panel with an overview of your findings and analysis in this matter?

A As stated in my report, I believe the work done by the proponent addressed much of the inherent uncertainty when carrying out environmental flow studies. However, I suggest further analysis be carried out that will build on what the proponent has provided. Specifically, I recommend the following:

First, develop more habitat evaluation metrics to determine the habitat losses and gains beyond the ones

used by the proponent. Examples of habitat metrics that can be considered are maximum weekly average, weekly instantaneous, et cetera. Habitat evaluation metrics need to capture the chronic, average, and acute gains and losses of habitat.

Second, develop mesohabitat suitability criteria curves to supplement the species-specific microhabitat westslope cutthroat trout criteria curve analysis.

Mesohabitat types; for example, pools, deep pools, riffles, step pools, et cetera, have already been identified by the proponent. Mesohabitat suitability curves for these habitat types will provide additional information not only for the entire year but will specifically be helpful for analyzing flow-related changes to habitat during the winter or ice-covered period. It is very challenging to develop species-specific microhabitat suitability curves for the ice-covered period. Using mesohabitat suitability curves is a practical way of addressing this challenge.

Third, develop an ecosystem base-flow component. The proponent provided a percent of flow reduction criterion that is reasonable and is expected for streams of this size. The proponent, however, did not provide any information on ecosystem base-flow recommendations.

Given the widespread acceptance in the instream

flow community and the history in Alberta of recommending both a percent of flow reduction criterion and an ecosystem base-flow criterion, both should be used to set an environmental flow recommendation for both Blairmore and Gold Creeks.

Once a fully protected environmental flow recommendation has been developed, it can then be compared to the Alberta Surface Water Allocation Directive, which I believe is the current water allocation policy of Alberta Environment and Parks.

For all of the above recommended steps, they should be carried out through collaborative discussion with the proponent, the provincial and federal regulators, the Coalition, and any other interested party.

I wish to thank the Chairman and the other Panel Members for the opportunity to participate.

Q Thank you, Mr. Locke.

MR. SECORD: And, Mr. Chairman, you will be happy to know that was seven minutes. Mr. Locke is available to answer any questions.

THE CHAIR: Thank you, Mr. Secord. You're a man of your word.

MR. SECORD: Thank you.

THE CHAIR: Benga, any questions?

MR. BRINKER: Mr. Chair, if I could have

just one minute. It's Coleman Brinker speaking. I will just confirm whether Benga has any questions for Mr. Locke.

THE CHAIR: Yes. Go ahead.

MR. BRINKER: Thank you.

MR. YEWCHUK: Mr. Yewchuk for CPAWS. Just using this minute while we wait.

My expert won't be available in the morning. Would it be all right for CPAWS to be pushed to the back of the list for direct evidence tomorrow?

Mr. Chairman, you're on mute. Sorry.

THE CHAIR: Sorry. Mr. Secord, you would be next up after CPAWS in the schedule. Would you be prepared to start 9:00 tomorrow morning?

MR. SECORD: I've already sent an email to my three experts, and we'll be ready to go at 9, sir.

THE CHAIR: Okay. Thank you.

So, yes, we should be able to push you back in the schedule, Mr. Yewchuk.

MR. YEWCHUK: Thank you.

THE CHAIR: Go ahead, Mr. Brinker.

MR. BRINKER: Thank you, Mr. Chair. I can advise that Benga has no questions for Mr. Locke. Thank you.

THE CHAIR: Okay. Thank you.

Ms. LaCasse or Ms. Kapel Holden?

MS. LACASSE: We don't have any questions, Mr. Chair.

THE CHAIR: Okay. Mr. Lambrecht?

I think you're on mute, Mr. Lambrecht. Oh, you're not on mute, but I cannot hear you.

Okay. Shaking his head. He has no questions. Thank you.

Mr. O'Gorman?

MR. O'GORMAN: Thank you, Mr. Chair.

As shocking as it might be to some to have me have an opportunity to ask questions related to water and aquatic habitat, I will politely decline in this case.

Mr. Locke, I appreciate you appearing before us, but I don't have any questions about your submission. Thank you.

THE CHAIR: Okay. Thank you.

Mr. Matthews?

MR. MATTHEWS: Again, thank you, Mr. Locke, and I have no questions.

THE CHAIR: Yeah. Mr. Locke, I have no questions, either. I thought your submission was very clear, and your evidence today was also very clear.

So thank you very much for your written submission and for hanging in there today and ending the day with us.

A Thank you.

THE CHAIR: Mr. Secord, anything arising? I guess not; there were no questions.

MR. SECORD: No. Thank you very much. And thank you for accommodating Mr. Locke this evening. Thank you very much.

THE CHAIR: Okay. Thank you.

(WITNESS STANDS DOWN)

THE CHAIR: So tomorrow morning, the Coalition will start, then. We'll hear from them.

And just with respect to the combining of the air and the wildlife health risk assessment session, since we didn't hear from anybody that had concerns about that, we will proceed to draw up the schedule by combining the times for those two sessions, and we'll issue it as soon as it's available. But we expect that tomorrow, we will continue through water, and it will likely extend even into Wednesday morning unless things go much quicker than planned.

So that combined session would start probably on Wednesday sometime.

Any other business we need to take care of? Hearing none, I thank you, everyone, and have a good evening.

MR. SECORD: Thank you.

PROCEEDINGS ADJOURNED UNTIL 9:00 AM, NOVEMBER 24, 2020

CERTIFICATE OF TRANSCRIPT:

I, Claire Forster, certify that the foregoing pages are a complete and accurate transcript of the proceedings, taken down by me in shorthand and transcribed from my shorthand notes to the best of my skill and ability.

Dated at the City of Calgary, Province of Alberta, this 23rd day of November 2020.

<Original signed by>

Claire Forster, CSR(A)
Official Court Reporter

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