fail, would adequately protect the environment, provide the necessary regulatory control and not be overduly onerous on the part of the company, either financially or in a regulatory manner.

Having said all of that, I do come back to my question as to what this procedure was intended to show us. Thank you, Mr. Chair.

A DAVE OSMOND: Dave Osmond for INAC. You raise a good point, Bruce, and thank you for that.

Before the recommendation, there is a long dissertation that I make, it is very tortuous, about recent information has become available on chemical toxicity of uranium. And that information raised this last photograph before the recommendation that the information highlighted the vulnerability of zooplankton species that are found in Lake C3 -- holy man. Mr. Chairman, shall I proceed? If it is not a fire alarm, it is an explosion.

The point in this recommendation is to attempt to get a better handle on the vulnerability of species of zooplankton that occur in Lake C3, that appear to be extremely vulnerable to uranium.

Now, further data has been presented in Tahera's presentation about the fact that uranium

ties up very nicely with sediments and so on, not unlike phosphorus. And my concern still remains particularly after closure when there won't -- the uranium will not be mixed with high suspended solids kimberlite discharge. And we will be in fairly clear water within the pit, and is projected to be at higher levels to -- discharging to -- possibly discharging to lakes, to Carat Lake at levels that could be toxic to these species.

And I think that the reason for the 24th-hour composite sample, and I said undiluted, which doesn't make any sense when I look at it again, we should be diluting it to achieve the concentration that you would to expect reflect the dilution that you expect at the edge of the mixing zone for that particular month. And I would like to see chronic toxicity done on that effluent once a month. I mean, you are not going to be discharging during the winter. And if the frequency was reduced to three times a year or something, that's fine by me. But I think that there should be an attempt made to try and determine the chronic toxicity of the discharge using Ceriodaphnia dubia.

Q BRUCE OTT: Mr. Chair, just a further clarification for me, and it may be just me, but it would seem that the concern has moved

from uranium to the whole effluent; is that correct?

A DAVE OSMOND: Dave Osmond. Certainly a full discharge analysis -- a sample of the discharge would incorporate all the other parameters as well. Let's see -- my preference would be to see what kind of chronic toxicity is in the effluent, and if we feel that we have to then break it out into any particular portion of that, then something specific to uranium may have to be done.

Q KELLY SEXSMITH: With permission, Kelly Sexsmith. The prediction for uranium is based on several conservative assumptions, as well as derivation of the discharge criteria, and there is a good possibility that there will be very low uranium in the actual drainage to the PKCA and from the PKCA. And if that's the case, it might be not a very useful exercise to do toxicity testing if they are for the purpose of characterizing uranium toxicity if there was indeed no uranium in the water. And so I ask if there is a threshold at which this becomes more relevant?

A DAVE OSMOND: Dave Osmond. I think the information provided in our intervention shows the levels at which uranium have been shown to be

chronically toxic to zooplankters. I couldn't pick a number out of the air right now, but I -- if I had to give a gut feeling, I would be saying somewhere around .035, 036. But that's -- for me to come up with a number for a trigger right at this point in time, I can't do that, and maybe it should be something that may be suggested by you or by the Board. But I would say somewhere in the neighborhood of .035 to .05.

Q KELLY SEXSMITH: Kelly Sexsmith. The other question I have is if this is a post-closure concern, would it not be more relevant to do chronic toxicity testing at dilutions of a water that is directly waste rock seepage?

A Dave Osmond. We are making a whole lot of assumptions that it may not be toxic during operations, Kelly. And I would rather see some proof of that before I agree to your comment that it be focussed on post-closure.

Q PETER McCREATH: Mr. Chair, Pete McCreath, Clearwater Consultants. A couple of items, one is a point of clarification from the INAC presentation. There was reference made to updating the spill plan annually, and it was not clear to me if this was referring to the hazardous spill containment plan, or if it was referring to

the release from the PKCA.

In any case, the requirement to update that plan annually strikes me as being somewhat onerous. Perhaps INAC could give us a little clarification on that.

A GLEN STEPHENS: Mr. Chairperson, Glen Stephens. It is the spill plan that we are referring to. Sorry, the hazardous materials spill plan. Sorry.

Q PETER McCREATH: Thank you. Pete McCreath, Clearwater. Section 3.1.1, surface water management plan of the written submission from INAC presents a number of recommendations for monitoring and measuring, including flows at a number of different locations.

In general, I believe most of those locations are included in our monitoring plans, but there are a couple of items that jumped out at me, one of which was there was two references to measuring ice thicknesses, one is measuring ice thickness in the pond area within the PKCA, measured every month through the winter period. I am not aware of any other mining operations in Canada where it is a regulatory requirement to measure ice thickness in a tailings pond. It is probably not safe to do so, and I'm not sure what the benefits of that would

be. Perhaps some clarification could be forthcoming on that?

The other ice measurement request was to measure ice thickness near the causeway once per winter month. And, again, I would ask for some justification as to why there should be measurements of ice thickness carried out at the causeway.

A DAVE OSMOND: Dave Osmond, Gartner Lee for INAC. I checked with our hydrologist who made this recommendation, Pete. And when I discussed why every month, he said, well, at the end of the winter would be fine. He relented to that. And his issue -- his issue was related to particularly the PKCA. If the volume of water in the PKCA is largely tied up as ice, how will you be discharging it during that early period of the year when most of the water is to be discharged?

And if it is going to melt at the same rate everything else will, or if ice within the PKCA will melt more slowly for some reason, what assurance that was required by him was that, indeed, you can release the volume that you are trying to release at the time of year when the greatest dilution is available and the greatest outflow is available, that was his issue. Is ice

going to be -- is the volume of water going to be tied up as ice when you are trying to discharge it?

Q PETER McCREATH: Mr. Chair, Pete McCreath, Clearwater Consultants. I would suggest if the -- all the water in the pond is frozen, then it is unlikely we are going to be pumping it out of the pond. But I would also suggest that measuring ice thickness at the end of the winter on any structure is a very dangerous thing to do at any time, and I would trust that there would not be an unsafe recommendation such as that included in the water license.

A DAVE OSMOND: Dave Osmond. I tend to agree with you that this is -- I'm the messenger I guess today. But if you get the intent, if you get the concern that was expressed, I guess what we would like is some kind of assurance that it may not be all. I'm not expecting the PKCA, and nor is he expecting the whole PKCA to be ice. He is just saying will you be able to discharge the water that's tied up as ice at that time of year to satisfy getting rid of all your water within that year?

Q PETER McCREATH: Mr. Chair, just one final response on that, if I may. Again, we have sufficient storage within the PKCA to, if

necessary, absorb at least two years of runoff from the entire site facility. So if it happened that there was such a depth of ice such that that entire volume was tied up in ice, then we might have a problem. I can't actually see that happening myself, but we do have that contingency storage available so that perhaps you might be just lagging a year behind, for example.

With your indulgence, Mr. Chair, I have one more point to make on the INAC submission. One of the requests that was made was for continuous measurement of pond and sump levels and ditch flows. I'm assuming that this is referring to ponds A, B and C, for example, if they are built, probably the PKCA.

Now, the sump, there will be many little sumps around, including within the pit and whatnot. I would suggest that a lot of these water portions of the water management facilities will be monitored on a spot-measurement basis that you cannot put continuous flow measurement on areas that, for example, within the pit that may be moving around, areas that will not be carrying any flow. So I would suggest that spot measurements would be sufficient to satisfy the intent of monitoring these different sources.

A DAVE OSMOND: Dave Osmond. I think that makes sense, Mr. Chairman. And the intent is definitely to be able to have a good handle on what the volumes are that would be required to be discharged in the PKCA or be dealt with in that particular year. And I think that that spot measurement approach should be adequate.

CHAIRMAN: Any further questions from the applicant?

Q KELLY SEXSMITH: Yes, this here is Kelly Sexsmith. I have a couple of questions. The first one is a minor point. INAC has recommended that we submit a management plan to indicate how we will handle the recovery plant rejects once we have sufficient characterization information on them. We would just like to ask if it would be sufficient to include that information in the waste rock seepage and monitoring report?

A GLEN STEPHENS: Mr. Chairman, Glen Stephens. Yes, that would be acceptable.

Q KELLY SEXSMITH: Thank you. Kelly Sexsmith. My second question is for Dave Osmond. Do you agree that all of the parameters listed, with the exception of aluminum which you flagged, are protective of -- our discharge limits are protective of the receiving environment beyond the

200-metre mixing zone?

A DAVE OSMOND: Yes. Mr. Chairman, Dave Osmond.

Q KELLY SEXSMITH: Thank you. My third question is, INAC has recommended that the nutrient limits be lowered beyond those protective discharge limits that we have proposed for the purpose of encouraging sound explosives management at the site. My question is, are you aware that there is an explosives management plan in the current waste rock storage plan, which was submitted as part of the application, that is designed to minimize nutrient loss into the blast?

A DAVE OSMOND: Mr. Chair, Dave Osmond. I never reviewed that plan, and so I'm -- I wasn't aware of that. I would like to put double emphasis on the importance of that plan from the point of view of nitrates, ammonia, because of its impact on aquatic systems. And so that's my main reason for this.

And also to conform, in some cases, with other limits, discharge limits that are applied elsewhere in some cases, and also from the point of view of nitrites, which seem to be a lot higher than levels found elsewhere or proposed elsewhere.

Q KELLY SEXSMITH: Just to clarify, you

just said nitrates?

A DAVE OSMOND: I said nitrites.

Q KELLY SEXSMITH: Just a final comment, with your permission. The explosives management plan that Tahera has is intended to reduce nutrient emissions to the maximum extent possible at this site. And Tahera has considerable incentives to make sure that nutrient concentrations are low, because that will reduce the amount of time in the post-closure period which it will take for those to flush out of the piles.

It will also mean that they may be able to discharge at some future date from direct discharges to the environment without meeting much lower concentrations than what is in the PKCA -- proposed as a PKCA discharge limit, they wouldn't be able to do that. So they have considerable incentive to follow their ammonia management plan and to try to come up with very low levels without having unnecessarily restrictive limits in their license.

GREG MISSAL: Mr. Chair, that's all the questions that we have. Thank you.

CHAIRMAN: Thank you very much. Any questions from Environment Canada? Any questions from DFO to be addressed to DIAND? Thank

you. Any questions from NTI? Thank you. From KIA? Thank you. Any questions from the Hamlet of Kugluktuk? Any questions from independent consultants?

RAMLI HALIM: Mr. Chairman, no questions.

CHAIRMAN: Okay. Thank you. And thank you very much for your presentation. What we will do is take a -- sorry, I'm so sorry. Any questions from staff?

WATER BOARD STAFF QUESTIONS LICENSEE:

Q DIONNE FILIATRAULT: Thank you, Mr. Chairman. I don't believe we have all that many questions. Dionne Filiatrault, Mr. Vice-chair.

Since I do have a couple of questions to DIAND, but I would like to clarify one. Since DIAND and Tahera have kind of been going back and forth with questions and clarification, the first question is actually probably more to Tahera than it is to DIAND.

Does Tahera agree with all the recommendations provided in the INAC's response or submission? And if so, well, obviously we have heard selected portions that you disagree with or have questions to, but there is a lot that hasn't been said. So in those sections that haven't been

addressed, does this Board take that as agreement that you are agreeing with the recommendations made be DIAND?

So from that perspective, it may be useful for Tahera to provide some information on the sections that they haven't addressed, and if they still disagree with a recommendation that's been provided by DIAND, to indicate why not and justify it.

CHAIRMAN: Okay. Let's take a five-minute break.

(BRIEF ADJOURNMENT)

BILL TILLEMAN: Mr. Chairman, what I suggest, I realize that we need to be down to the dinner place for 5:30, there is strict rules on that. And so what the staff would like to suggest, sir, is that we have about three questions for DIAND, and the staff could do that very quickly, and then we can dismiss -- we will do it very quickly, and then we can dismiss the panel, and Tahera can take the suppertime to think about their response and then come back and start after supper.

So with your permission, unless there is any objection, why don't we ask the question. We will finish DIAND from the staff. Okay. Thank you.

Q DIONNE FILIATRAULT: Thank you, Mr.

Chairman. Just as a point of clarification, and it may require some additional follow-up then, and we would allow you to do it over the supper break, if needed. Do all your recommendations submitted where they refer to monitoring, do they outline the frequency, parameter, location and the phase by which you are proposing the monitoring to take place?

A GLEN STEPHENS: Mr. Chairperson, Glen Stephens. We will have to get back to the Water Board staff, and especially if she could repeat the list of conditions she would like us to review, that would be appropriate, or provide it on a piece of paper. Even better.

Q DIONNE FILIATRAULT: Yes, Mr. Chairman. Frequency, parameter, location and phase of project.

A GLEN STEPHENS: Mr. Chairperson, could she slow down? Thank you.

Q DIONNE FILIATRAULT: Frequency, I was going to spell it, I was going to. Parameter, location, phase.

Mr. Chairman, while they are scrambling, can I move on to the next question? The question is in relation to the securities estimate, the time to question INAC is at this point, and there is an

expert consultant sitting at their table. There has been recommendations that have been provided in some of the other submissions. I am just wondering if Mr. Brodie has had an opportunity to review some of the recommendations that have been made by Acres and KIA, and if there is any issues that he strongly agrees and/or disagrees with?

A JOHN DONIHEE: John Brodie, Mr. Chairman. That's a pretty broad question. Is there anything specific in that that you would like me to address? Otherwise, I would say that I have briefly reviewed what they have written, and don't have any major concerns other than to note that the scope of A&R activities described in the KIA estimate is more elaborate than what I have allowed for.

DIONNE FILIATRAULT: That's the end of my questions. I believe there is another securities question, and Steve?

Q STEPHEN LINES: Thank you, Mr. Chairman. Stephen Lines. In your security assessment, were there gray areas? Or I guess more specifically, what were the gray areas that you encountered when splitting the security between land and water? And how did you differentiate between the two when, in many cases, they are so

closely related?

A JOHN DONIHEE: John Brodie, Mr. Chairman. Perhaps that would be best answered if I briefly described the approach I have taken in segregating the liability.

The method that I have followed is to calculate the total reclamation liability for the site based on the reclamation plan and the addition of any reclamation measures that I think are necessary to provide a satisfactory condition at the end of the mine life, and those are noted in my report.

Once I have determined a total liability, I then segregate that liability based on the nature of the activity by simply looking at each individual reclamation activity and allocating it to either land-related activities or water-related activities. And once that subtotal is made, I would then apportion to each of the land and water subtotals an amount of the mobilization, engineering and contingency to fully develop a full accounting for the land and water liability.

Does that answer your question?

Q STEPHEN LINES: So when you were segregating them by the nature of the activity, there were no activities that could have either

fallen under both or easily under water as they did under land?

A JOHN BRODIE: John Brodie, Mr. Chairman. There are, at least in my opinion, reclamation activities that are clearly just water related and some which are clearly just land related, and there are some which I don't see as much calling them gray areas, but rather calling them reclamation activities that benefit both the restoration of the land, as well as protection of water resources. And I subjectively look at those and allocate them as being either 50/50 land and water, 75 percent land, 25 percent water, and vice versa, 75 percent water, 25 percent land, based on what, in my opinion, is the primary nature of that specific reclamation activity.

Q STEPHEN LINES: Thanks, Mr. Chairman. So then by that understanding, I'm thinking that it wasn't necessarily by putting the activities in the different under land or water, that you would actually split the specific activities into percentages of how they would affect land or water; is that correct?

A JOHN BRODIE: John Brodie, Mr. Chairman. Basically that's correct. Maybe I could help you with a bit of an example. The

reclamation of the fine processed kimberlite area involves the establishment of a cover, and that cover will serve several purposes. In one part, it will control erosion and prevent the chronic release of sediment, which would affect the Long Lake and receiving waters downstream. So I see that cover as having a water-related benefit.

In addition, the establishment of the cover would facilitate revegetation of that area, so it would have a land-related benefit as well. Off the top of my head, I cannot recall how I allocated that, whether I made it 50/50 or 75/25, for example, but I suspect I probably allocated that 50/50.

Q STEPHEN LINES: Thank you. Two more questions, Mr. Chairman. In the presentation, I believe it was agreed or INAC agreed with the site water balance, and I'm just wondering if this is still the case given the relatively new amount of water use that is being requested by Tahera?

A GLEN STEPHENS: Mr. Chairperson, if it may -- Glen Stephens, if we can take a few minutes to think about that or get back to that after the break, I don't think we have fully considered that question. Thank you.

Q STEPHEN LINES: Can I ask one more

question? The last one, Mr. Chairman, was from the presentation, is INAC recommending that the ponds A, B and C be abandoned altogether?

A JOHN BRODIE: John Brodie, Mr. Chairman. No, I don't think that we are recommending that they be abandoned, but rather that serve as collection basins as routing water to the PKCA.

Q STEPHEN LINES: And just as a quick follow-up, so is the thought, then, that the ponds will provide for better control of runoff than would just the ditches alone?

A JOHN BRODIE: John Brodie, Mr. Chairman. I think it would be very difficult to route some of the water to the PKCA without having those ponds in place. Now, it may be possible for some of them to be omitted and have drainage directly to the pit, that would be a local water management issue so long as the water is going directly to the PKCA is the intent here, I think.

Q DAVE HOHNSTEIN: Thank you, Mr. Chairman. A couple of quick questions. I think they should go fairy quickly. One is just with respect to a question that came out earlier regarding the measurements of pond sump and ditch

flows. INAC had agreed that spot measurements would be adequate. Is there any restriction or minimum requirements that may be applied to this agreed monitoring?

A GLEN STEPHENS: Mr. Chairperson, if we may, we can consider that question in light of our earlier request from the staff about frequencies and phases and parameters.

Q DAVE HOHNSTEIN: Okay. Mr. Chairman, the last question hopefully. With respect to your comment on measuring of ice thicknesses that came about earlier with regards to the PKCA. In your assessment of the receiving water quality estimates, has the ice thickness on the PKCA been taken into account with respect to the possible concentrating or concentration of contaminants due to freezing effects within the water to be released?

A DAVE OSMOND: Dave Osmond, INAC. Mr. Chair, I don't think that our team looked at that possibility. We were rather looking at the potential impact on discharge rather than water quality ramifications. That was all that we looked at at that point in time.

Q BILL TILLEMAN: Mr. Chairman, with your permission, it is Bill Tilleman. I just have

one question as we go to break for Mr. Brodie, and it was I have had the benefit of hearing evidence that you presented in the past regarding the demarcation point between land and water. And do I take it from what you have said today that it is still a subject of call at the end of the day?

A JOHN BRODIE: John Brodie, Mr. Chairman. Yeah, that's correct, it is still a subjective allocation where reclamation activities benefit both land and water.

BILL TILLEMAN: That's it from the staff, Mr. Chairman.

VICE-CHAIRMAN: If I may, Mr. Chairman. There is still three questions that are outstanding, one for Tahera, and two for DIAND, and you are going to report back after supper, that's correct? Okay.

CHAIRMAN: We will break for supper. We will come back here --

GLEN STEPHENS: Sorry, I was under the impression, Mr. Chairperson, it is Glen Stephens, that we had three questions outstanding. We were going to roll one of them into the same thing, is that what you intend? Okay. Just a point to clarify. Thank you.

CHAIRMAN: Okay. Let's break for