

**2011 Legislative Session: Fourth Session, 39th Parliament
Special Committee on Cosmetic Pesticides**

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**REPORT OF PROCEEDINGS
(Hansard Blues)**

**SPECIAL COMMITTEE ON
COSMETIC PESTICIDES**

TUESDAY, JANUARY 17, 2012

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The committee met at 10:09 a.m.

[B. Bennett in the chair.]

B. Bennett (Chair): Morning, everyone. Can the folks in Ottawa hear me?
[DRAFT TRANSCRIPT ONLY]

L. Hanson: Yes, we can hear you, Bill. [DRAFT TRANSCRIPT ONLY]

B. Bennett (Chair): Okay. Thank you. I'm going to have you introduce yourselves in just a second, but I'd like to get the members of the committee to introduce themselves first. [DRAFT TRANSCRIPT ONLY]

This is the legislative Special Committee on Cosmetic Pesticides. This is a public meeting. It's scheduled to go from now until two o'clock, unless we finish before that. [DRAFT TRANSCRIPT ONLY] [1010]

My intention is to leave some time at the end of the meeting for some in-camera discussion with the committee on scheduling matters and those kinds of mundane matters. I'm sure we'll finish up with you folks in Ottawa before two o'clock our time. [DRAFT TRANSCRIPT ONLY]

Let me have my members of the committee introduce themselves, starting with Murray Coell. [DRAFT TRANSCRIPT ONLY]

M. Coell: Good morning. My name is Murray Coell, MLA for Saanich North and the Islands, former Environment Minister, former mayor of Saanich here on Vancouver Island and former chair of the capital regional district here as well. This is my first meeting. I am replacing Barry Penner, who's gone on to do other things with his life in the private sector. [DRAFT TRANSCRIPT ONLY]

Thank you very much for being here for us today. [DRAFT TRANSCRIPT ONLY]

J. Slater: John Slater, MLA for Boundary-Similkameen and former mayor of Osoyoos. I've been involved in local politics for over 20 years. Thank you,

again, for participating in this as well. [DRAFT TRANSCRIPT ONLY]

J. Yap: Good afternoon in Ottawa. I'm John Yap. I'm the MLA for Richmond-Steveston and currently the Parliamentary Secretary for Clean Technology. I was previously the Minister of State for Climate Action for B.C. [DRAFT TRANSCRIPT ONLY]

B. Bennett (Chair): Good morning again. I'm Bill Bennett. I'm the MLA for Kootenay East, which is up in the southeast corner of the province. I live in a city by the name of Cranbrook, and I'm Chair of the committee. [DRAFT TRANSCRIPT ONLY]

R. Fleming (Deputy Chair): Good afternoon to our friends in Ottawa. My name is Rob Fleming. I'm the MLA for Victoria–Swan Lake. I'm the Deputy Chair of this committee, with my counterpart Bill Bennett, and I am the opposition critic for Environment. [DRAFT TRANSCRIPT ONLY]

Thank you for taking the time, especially to those who are appearing for a second time at this committee as witnesses. We appreciate that. [DRAFT TRANSCRIPT ONLY]

M. Sather: Hello, I'm Michael Sather, MLA for Maple Ridge–Pitt Meadows in the Metro Vancouver area. I'm the opposition fisheries critic and deputy critic for Environment. [DRAFT TRANSCRIPT ONLY]

S. Fraser: Good afternoon. My name is Scott Fraser. I'm the MLA for Alberni–Pacific Rim. I was a former mayor in the district of Tofino on the west coast of Vancouver Island. I'm currently the opposition critic for Aboriginal Relations and Reconciliation. Welcome. [DRAFT TRANSCRIPT ONLY]

B. Bennett (Chair): Thanks very much, Members. If I could get you folks in Ottawa to introduce yourselves now. [DRAFT TRANSCRIPT ONLY]

L. Hanson: Certainly. I think we'll start on my right here. [DRAFT TRANSCRIPT ONLY]

C. Moase: My name is Dr. Connie Moase. I'm a director within the health evaluation directorate of the Pest Management Regulatory Agency. [DRAFT TRANSCRIPT ONLY]

L. Hanson: My name is Lindsay Hanson. I had the opportunity to speak with your committee this past October. I work in the policy, communications and regulatory affairs directorate. [DRAFT TRANSCRIPT ONLY]

P. Delorme: Good morning. My name is Dr. Peter Delorme. I'm a director in the environmental assessment directorate here at PMRA. [DRAFT TRANSCRIPT ONLY]

J. Flint: My name is Jason Flint. I'm the director of policy and regulatory affairs here at PMRA. [DRAFT TRANSCRIPT ONLY]

B. Bennett (Chair): Okay. Thank you very much. In terms of the sound, we were able, I think, to hear Dr. Moase and Jason Flint quite easily; the other two not as well. I don't know if there's a mike issue at your end. We'll see how it goes here, but I thought I'd mention that. [DRAFT TRANSCRIPT ONLY]

Folks, what we thought we would do.... I had a little meeting with the Deputy Chair prior to the meeting, and we have sent you a list of questions that you have responded to. I think there were something like ten or 12 questions on it — yeah, 12 questions — and you sent your answers back. It was very, very useful to us. I hadn't had a chance to read it until after we sent the subsequent list of

questions that we sent to you, and I apologize. I can see that there's some redundancy there and that you've answered some of those questions. [DRAFT TRANSCRIPT ONLY]

[1015]

What I thought I would do here today is, first of all, throw it open to members of the committee to ask you questions and look for clarifications — not based on the set of questions that we sent you, necessarily, although that may happen — see what comes out of the committee on that basis, and then go to the set of questions that we sent to you that we don't have written answers on yet and discuss those. Is that okay with you folks? [DRAFT TRANSCRIPT ONLY]

L. Hanson: That sounds pretty good. I think what I wanted to point out is that we will certainly be in a position to provide you with written responses again to this list of additional 23 questions which you sent us on the 13th. That will, of course, take us a period of time. Certainly, if there are specifics that you want to ask us today, I'm pleased to be joined by some subject matter experts here. So yes, certainly, we will be open to questions from your committee today. [DRAFT TRANSCRIPT ONLY]

B. Bennett (Chair): That's perfect. I was going to ask you next if we could get those questions in writing. [DRAFT TRANSCRIPT ONLY]

How is everyone's time today? How much time have you allotted for this? [DRAFT TRANSCRIPT ONLY]

L. Hanson: We certainly set aside the afternoon, as indicated by your original agenda. I know that Dr. Moase has an obligation in about two hours, so we have a period of time, certainly, that we can give you here today. [DRAFT TRANSCRIPT ONLY]

B. Bennett (Chair): Okay. Thank you. [DRAFT TRANSCRIPT ONLY]

Well, I think we'll get started by just asking members for things that are on their minds, which they can ask you now that we have you as a captive audience. We really appreciate, again, the time that you're spending to do this. [DRAFT TRANSCRIPT ONLY]

The reason that we have invited you back, essentially, is that we recognize that you are the federal regulator for pesticide use and registration in Canada. A number of our presenters have indicated to us that they question the process. You'll know what I'm referring to just from the nature of the questions that we've sent to you. So we thought we ought to give you an opportunity to respond to some of that but also give some of our members an opportunity to ask you questions that, clearly, are on their minds, throughout this process, and see if we can get all the information that we need to make some good recommendations. [DRAFT TRANSCRIPT ONLY]

I'm going to ask for a show of hands here, and I'll start a speakers list, starting with John Yap. [DRAFT TRANSCRIPT ONLY]

J. Yap: Thank you, Chair, and thank you to our friends in Ottawa for being here with us to provide additional information. I'd like to start out with question 4 and maybe ask for an expansion on the answer you've given here on the cautionary principle, which you've covered in other responses. It really deals with risk management and the whole concept of what is acceptable risk. [DRAFT TRANSCRIPT ONLY]

There is much debate, at least at the community level, about the whole concept of being cautious, and my understanding is that there is, from a scientific perspective, a definition of what the precautionary principle is. As a committee, we've discussed that. But I'd like to hear your perspective, from a scientific

perspective, where you look at evidence-based studies and analysis. Where does the scientific community, from PMRA's perspective, get the definition, the commonly accepted definition among scientists, of what is the precautionary principle, if I could put it that way? [DRAFT TRANSCRIPT ONLY]

L. Hanson: Certainly, the precautionary principle is actually referenced in the Pest Control Products Act. I think what I tried to explain in the answer that we provided to you is that the precautionary principle basically winds its way through our evaluation process. As I said, it is referenced under our act. Based on the type of assessment that we do, it certainly builds precaution into the review itself. [DRAFT TRANSCRIPT ONLY] [1020]

I think also, in my providing these responses today, I can speak in some.... [DRAFT TRANSCRIPT ONLY]

B. Bennett (Chair): Lindsay, can I interrupt you just for a second? We're having some difficulty hearing you. Is there any way to increase volume at your end? We have our volume maxed out here at this end. You may have to look at the heavens. [DRAFT TRANSCRIPT ONLY]

L. Hanson: What I'll try to do is maybe raise my voice a little bit. [DRAFT TRANSCRIPT ONLY]

B. Bennett (Chair): Perfect. Thank you. [DRAFT TRANSCRIPT ONLY]

L. Hanson: All right. Basically, what I was saying is that the precautionary principle itself is referenced in the Pest Control Products Act. It is a process that basically winds its way through our evaluation process by way of the scientific evaluation that we carry out. [DRAFT TRANSCRIPT ONLY]

Also what I wanted to say is that certainly I can speak to a number of these questions, but today, as you have observed, we have some subject matter experts here. I believe that Jason Flint can probably expand a little bit on the precautionary principle itself and that approach we use in our risk assessment process. [DRAFT TRANSCRIPT ONLY]

J. Flint: I noticed in one of the subsequent questions you provided on Friday there was a specific reference to section 20 of the act, where we do include the precautionary principle. It was put there specifically because it deals with interim measures during a re-evaluation or special review. It was considered, when the act was created, as to where we'd put it and how we might incorporate that principle into the legislation. It was felt that incorporating it elsewhere would actually lessen the amount of protection the act provides. [DRAFT TRANSCRIPT ONLY]

The definition of "acceptable risk" in the act refers to reasonable certainty that no harm will be done as a result of the use of the product as directed. That's the basis on which we make our final decisions. It was included in the act under section 20, where if during the course of re-evaluation or a special review there is evidence that there may be serious or irreversible harm and there's a lack of full scientific certainty, meaning we can't make a final decision on that, then we have the authority under the act to take precautionary measures that would allow us to act without having full scientific certainty. [DRAFT TRANSCRIPT ONLY]

In guiding us in applying the precautionary principle, there is a framework document: *A Framework for the Application of Precaution in Science-Based Decision Making About Risk*. It's a federal framework that was put out in 2003, and it also guides the federal government in the application of precaution. [DRAFT TRANSCRIPT ONLY]

It includes a couple of points around the fact that a precautionary decision or precautionary measures need to be such that they're revisited and reviewed.

They're not a final decision; they need to be reviewed upon changes in science, because they're based on a concept of a lack of full scientific certainty, and that's not something that we like to make our final decisions on. We want to make sure that we have reasonable certainty of no harm to make a final decision under the Pest Control Products Act. [DRAFT TRANSCRIPT ONLY]

J. Yap: It sounds like a fairly technical definition of what is the precautionary principle. I think I understand that it tries to be dispassionate and focus on evidence, which is a sound approach. What discussions, if they have happened, between the position that PMRA and the definition in the regulation about precautionary principle...? [DRAFT TRANSCRIPT ONLY]

When the discussions happen — let me put it that way — or discourse about the need to take precaution... We know who some of the, say, health advocates are. They say: "Well, to be safe, using a precautionary approach, we should ban these chemicals." Yet from a very rigorous, scientific, evidence-based approach, which PMRA follows, we have kind of a different result. [DRAFT TRANSCRIPT ONLY]

[1025]

Would it be fair to say that we may be talking about two different...? Like apples and oranges — like what some advocates are saying is being cautious versus from a scientific approach being cautious. Is that a fair way to frame this? [DRAFT TRANSCRIPT ONLY]

L. Hanson: I think in some instances, there are certainly situations where community advocates are not aware of our process, the data that's required for us to carry out a scientific evaluation — an extensive data set. That's really the basis of what Mr. Flint was talking about. We have to be confident in the data that we do have, in the ability to make a risk assessment decision. You know, in the absence of.... In trying to address these additional threats that individuals may raise, we have to be to be confident in the data that we do have that we are able to address them. If we're not able to address them, if we're not satisfied with the database that we do have — with the information that has been submitted — then the product will not be registered. [DRAFT TRANSCRIPT ONLY]

I don't know if one of my other colleagues wants to add anything to that? [DRAFT TRANSCRIPT ONLY]

C. Moase: Well, I think I can add to Lindsay's first point about when we do a pre-market assessment — so before a product is registered — the whole precautionary approach is sort of woven into that entire process. We rely on a very broad database of information to make our decisions. [DRAFT TRANSCRIPT ONLY]

In addition, we've got a wide variety of species so that we can sift through all that data to see if there are commonalities and differences in the variety of species that we look at to do both the human risk assessment as well as the assessment on the environmental side. [DRAFT TRANSCRIPT ONLY]

We're applying uncertainty factors, because there is going to be extrapolation from animal data to the human scenarios, for example. So we include a lot of precautionary approaches within the risk assessment itself in order to determine whether or not, at the end of the day, the risk is acceptable for registration. [DRAFT TRANSCRIPT ONLY]

So that's the precautionary approach that we take on a pre-market assessment, and we apply that same level of rigour when we're doing a re evaluation as well. I don't know if that helps to put that into context? [DRAFT TRANSCRIPT ONLY]

J. Yap: It does. Maybe to wrap up this line of discussion, from my perspective. How does our approach in Canada of applying precautionary

principles through the assessment for registration purposes and renewal and registration...? How does this compare with how this principle is applied in other modern jurisdictions, say, at least in the industrial economies? How does it compare to other jurisdictions? [DRAFT TRANSCRIPT ONLY]

L. Hanson: Certainly, our risk assessment process that we use for pesticides in Canada is on par or even above assessment processes used in other jurisdictions in the world, whether that be the United States EPA, the European Union countries. Essentially, that process for risk assessment is fairly standardized throughout the world. It's very similar to approaches that are used in the pharmaceutical world. All of these countries are basically requiring the same types of data, so there is an established understanding even when these processes are used. [DRAFT TRANSCRIPT ONLY]

Again, I'll ask my colleagues if they want to add anything to that. [DRAFT TRANSCRIPT ONLY]

P. Delorme: Yeah, I think it's important sometimes to distinguish between a precautionary approach, which is an inherently conservative approach that we use in our risk assessments, as opposed to a definition of the precautionary principle per se. There are differences there. [DRAFT TRANSCRIPT ONLY]

A precautionary approach means that you're using conservative assumptions; you're using uncertainty factors to make sure that no untoward effects might happen. [DRAFT TRANSCRIPT ONLY]

B. Bennett (Chair): John, if I could.... Is that what you mean...? In your answer to question 4, you state that the process that you use is actually a significantly higher level of protection from the risk of harm. Do you want to flesh that out a little bit? [DRAFT TRANSCRIPT ONLY]

[1030]

L. Hanson: Again, that goes to the point of having that comfort level in the data set that we do have. If you look at individuals who talk about the precautionary principle, sometimes you will find, then, a reference to a lack of available information or a lack of scientific data in order to make a decision. [DRAFT TRANSCRIPT ONLY]

What we talked about with our work that we're doing with pesticides is that we have a very fulsome data set that is required to be submitted, covering off the range of studies that I talked about last time, when I did my presentation on the toxicology in both human health and the environmental side of things. It's that extent of our data set that we, again, certainly have to be comfortable with in going forward to make a decision, a decision whether the risks are acceptable or not versus having to make a decision in the absence of data. [DRAFT TRANSCRIPT ONLY]

M. Sather: Just a couple of comments on the precautionary principle/precautionary approach. I agree with the comment that what's actually, I think, being.... If he was referring to the Pest Control Products Act or more, perhaps, just generally to Health Canada's approach, I would say it's not the same as the precautionary principle, as normally understood — the precautionary approach quite possibly. [DRAFT TRANSCRIPT ONLY]

The precautionary principle typically.... No one has, I guess, a corner on the market for describing what a precautionary principle is, but more commonly it is referred to as suspected risk of harm to the environment or people, as opposed to where there are threats of serious or irreversible damage, which I would think, in PMRA's case, would say that there are no threats of serious or irreversible damage, and thus they've approved these products. [DRAFT TRANSCRIPT ONLY]

That definition in the act also goes on to talk about postponing cost effective measures to prevent adverse health impacts, with the possible implication there that if the measure is not cost-effective it wouldn't be adopted. So I agree that's a different approach. [DRAFT TRANSCRIPT ONLY]

My question, actually, was around long-term toxicity and carcinogenicity studies in your response, saying that long-term toxicity and carcinogenicity studies determine the effects of exposure to a test substance over most of the test animal's lifetime — example, two years for rats and 18 months to two years for mice. This testing is the nuts and bolts of the PMRA process, then — animal testing? [DRAFT TRANSCRIPT ONLY]

C. Moase: Your question is whether or not the long-term tests are predictors? [DRAFT TRANSCRIPT ONLY]

M. Sather: Sorry, no. I'm asking: animal testing, then, is what PMRA relies on in large measure, in terms of determining...? [DRAFT TRANSCRIPT ONLY]

C. Moase: For the toxicity...? [DRAFT TRANSCRIPT ONLY]

M. Sather: Correct. [DRAFT TRANSCRIPT ONLY]

C. Moase: For the toxicity studies, we'd rely on animal toxicity data. There's a whole suite of studies which you have there in front of you in response to that question. Then we also take into consideration many of the epidemiological studies that we find in the literature, as well as any of the other published studies within the literature, in the context of a re-evaluation. [DRAFT TRANSCRIPT ONLY]

Certainly for a pre-market chemical generally, unless it's been registered for a long time elsewhere in another part of the world, there won't be anything in the public literature on that particular compound. So for a re-evaluation context we'll take a look at the published literature, any epidemiological evidence that might be out there, as well as the toxicity studies that we have on hand. [DRAFT TRANSCRIPT ONLY]

M. Sather: So if you're looking, obviously, then, at the lifetime of rats and mice of 18 months to two years, that's considerably less than in humans — correct? [DRAFT TRANSCRIPT ONLY]

[1035]

C. Moase: Correct. And that's the life span of those particular lab animals. For any known human carcinogen, whatever the chemical might be — I'm not speaking directly to pesticides — the animal models that have been used have shown to be positive for anything that's known to be carcinogenic to humans as well. So they are well understood predictors of potential human toxicity, and those are the models that are well worked out and used for toxicity testing. [DRAFT TRANSCRIPT ONLY]

Does that clarify it? [DRAFT TRANSCRIPT ONLY]

M. Sather: I think so. But, speaker, I didn't hear all of what you said. My hearing is not the best either, at this end. We are having some transmission problems, but I think I heard most of what you said. [DRAFT TRANSCRIPT ONLY]

B. Bennett (Chair): Michael, would you like all or part of the answer repeated? [DRAFT TRANSCRIPT ONLY]

M. Sather: No, Chair. I think that's good. [DRAFT TRANSCRIPT ONLY]

B. Bennett (Chair): Okay. Michael, did you have any other questions you wanted to ask right now? [DRAFT TRANSCRIPT ONLY]

M. Sather: No. [DRAFT TRANSCRIPT ONLY]

S. Fraser: I don't want to dwell on the precautionary principle. But I must say that I see our role as a committee in assessing the precautionary principle may be somewhat different than the, I think, quite confusing definition that we see in the act. I think that's probably the case for the jurisdictions, the other provinces that have taken their own cosmetic pesticide regulations — put them into place. I think they're looking at sort of a higher standard. [DRAFT TRANSCRIPT ONLY]

I guess I've got to say we've heard a lot of submissions, yours included. Some of them refute other submissions, and we've had that through the whole time of our session here. [DRAFT TRANSCRIPT ONLY]

I would like to refer to the Ontario College of Family Physicians and their association. They looked at hundreds of studies and found that there was very strong evidence that pesticides caused birth defects, infertility, neurological diseases such as Parkinson's disease, and a number of cancers — also, specifically, childhood cancers, including leukemia, lymphoma and brain tumours — which increased with typical home and garden use of herbicides and pesticides. [DRAFT TRANSCRIPT ONLY]

We do get that from, certainly, professionals in health care, and we've heard that from others that have dealt with endocrine disorders, with evidence showing very small amounts of these deleterious substances can have an effect there. [DRAFT TRANSCRIPT ONLY]

Again, as the body that sort of adjudicates these things, how do you reconcile the precautionary principle as you've got it, when there are hundreds, if not thousands, of studies that certainly link detrimental health effects to humans? I guess that's the question. [DRAFT TRANSCRIPT ONLY]

L. Hanson: I'll try to begin on that. Essentially, what you're referring to, in both your reference to the OCFP report and other published studies, are epidemiological studies themselves. Those are the studies you would find in the open public literature. [DRAFT TRANSCRIPT ONLY]

These are certainly studies that we are aware of. Certainly, our scientists in our evaluation sectors — particularly on the re-evaluation side, which Dr. Moase referred to — look specifically for information that is available in the public literature as far as epidemiological reports for products that we have registered in Canada, or other products around the world that we should be concerned with. [DRAFT TRANSCRIPT ONLY]

I think it is important to note that, first of all, yes, we are aware of those studies. We are aware, certainly, of the studies that the OCFP report referred to. It's our job to look at those studies. [DRAFT TRANSCRIPT ONLY]

It's also our job to determine how those studies can be used in our overall process in terms of information as to where to look. Particularly in the re-evaluation side, if we have an epidemiological report that is pointing towards a possible effect, we need to be able to use that study in conjunction with our toxicological studies that we have as our database to determine: is that effect, first of all, biologically plausible? Can it happen? That's the reason why we have such an extensive toxicology database that is required in Canada. [DRAFT TRANSCRIPT ONLY]

Unfortunately, that information — the tox database itself — is not directly available to outside groups, although they can request to look at that information now through a process we refer to as the reading room. So that data is available. [DRAFT TRANSCRIPT ONLY]

[1040]

But generally, those are all of the studies that we touched on here previously. The previous listing of studies — the short-term tox, the acute, the

long-term — are the studies that can tell us: is the effect that the epidemiological reports are describing...? Is it possible that it could be occurring? We need to be able to build this in into our re-evaluation in the process. [DRAFT TRANSCRIPT ONLY]

So that really, I guess, gives you a bit of a summary on how we use the epidemiological study reports themselves. I think Dr. Moase possibly might want to add to that. Her directorate certainly is the group that makes extensive use of those reports, particularly on the re-evaluation side of the equation. [DRAFT TRANSCRIPT ONLY]

C. Moase: Right, and I think it's important to keep in mind, too, that the epidemiologic studies are just one component of the information that we look at. Epidemiology studies, by nature, look for associations. They don't necessarily point to causation. They're looking for a potential link between a disease and a specific association to something, either environmental or another aspect. So when we look at epidemiology studies, we also take into consideration the toxicity studies, as Lindsay was mentioning, about: what are the potential hazards associated with that chemical and can we interrelate those two components? [DRAFT TRANSCRIPT ONLY]

One thing that I did want to bring up — I don't know if this is the point to bring it up — is a large epidemiology study that's going on the States that we've been keeping a close watch on. I just wondered if the committee was aware of the agricultural health study that is ongoing in the U.S. where it's looking at occupational exposure to pesticides. [DRAFT TRANSCRIPT ONLY]

B. Bennett (Chair): I'm aware of it, and I think the materials are contained within the 9,000-plus submissions that we've received. I actually have something on it here. Would you like to comment on it? [DRAFT TRANSCRIPT ONLY]

C. Moase: Would I like to comment on it? [DRAFT TRANSCRIPT ONLY]

B. Bennett (Chair): You raised it. Would you like to say something about it? [DRAFT TRANSCRIPT ONLY]

C. Moase: Yes. First of all, I just wanted to know whether the committee was aware of that study, because that is a very large epidemiology study. As I said, it's been ongoing since about the mid-90s. There are reports coming out on it continually, and we have actually taken some of those reports and analyzed them for specific effects as well. [DRAFT TRANSCRIPT ONLY]

I would encourage you to look at some of the fact sheet information on those studies which points to what the outcomes are of those studies. I'll just pull it up in front of me here. [DRAFT TRANSCRIPT ONLY]

In general, at a very high level, one of the points that the authors indicate is that people at this point in the ag health study have lower cancer risks than the general population. These are certified applicators, farmers and their spouses. It's upwards of 90,000 people that they're looking at. [DRAFT TRANSCRIPT ONLY]

These are some of the conclusions that they're coming out with at this point. Some of the associations they have found.... They are few and far between with specific cancers, and they also go as far as saying some of those indeed could be by chance or that some of them are very preliminary findings and they have to pursue these further just to get more additional data. [DRAFT TRANSCRIPT ONLY]

So far, the findings are quite positive in terms of low cancer risks to that population group, which has a higher exposure apparently because they work with the pesticides on a daily basis. [DRAFT TRANSCRIPT ONLY]

B. Bennett (Chair): We don't have a very good connection today. I caught pretty much all of what you were saying. [DRAFT TRANSCRIPT ONLY]

I think one of the things we'd like you to do, in addition to the questions we sent you, is to perhaps send us the sort of brief summary that you just gave us on how this study is working and what's been discovered so far. [DRAFT TRANSCRIPT ONLY]

Can I just confirm with you? I have — I have no idea where I got it from — a PowerPoint presentation that was done by Health Canada entitled *Update on Findings from the Ongoing Agricultural Health Study Federal-Provincial-Territorial Committee Meeting, Winnipeg, Manitoba, September 29, 2009*. [DRAFT TRANSCRIPT ONLY]

[1045]

I don't know whether we got that from you folks or where we got it. Is that the study you're referring to? [DRAFT TRANSCRIPT ONLY]

C. Moase: Yes. That would have been our presentation from PMRA to the FPT. [DRAFT TRANSCRIPT ONLY]

B. Bennett (Chair): Okay. It sounds like a study that we should pay maybe a little closer attention to. So if there's anything.... You know, if you could provide us with a summary of the findings.... [DRAFT TRANSCRIPT ONLY]

C. Moase: Sure. I'll provide you with the link as well as a summary of the.... This two-page fact sheet that I've got with me is sort of a very high-level summary, but it'll give you an idea of some of the outcomes of that. It's a very significant epidemiology study, and it's a huge epidemiology study because it involves upwards of 90,000 people — and again, to those who would have occupational exposures to pesticides. [DRAFT TRANSCRIPT ONLY]

B. Bennett (Chair): I'm going to go back to Scott here in a second, but somebody, one of you, said, "toxology shows whether it can happen," and it's an interesting statement. So from a layperson's point of view — and we're all laypersons here — in terms of comparing toxology with epidemiology, it sounds like toxology will determine whether the findings of an epidemiological study can actually happen from a chemical analysis. Does that make any sense? [DRAFT TRANSCRIPT ONLY]

C. Moase: Yes. We look at the toxicology studies to determine what those hazards potentially are, from various doses of a chemical. When we're looking at toxicology studies, we're looking at all kinds of parameters. We're looking at all the organs. We're looking for tumour development. We're looking for precursor lesions to cancer. We're looking not just for cancer. We're looking at reproductive effects. [DRAFT TRANSCRIPT ONLY]

There are biochemical analyses of various enzymes and clinical parameters within the animal. We're looking across a whole host of different toxicology parameters to see what's being tweaked by a particular chemical. So we try to pull all that together and look at that profile, that toxicology profile, and compare that to findings from epidemiology studies to see what lines up. [DRAFT TRANSCRIPT ONLY]

B. Bennett (Chair): Are you able, or is anyone able, to help the committee understand the difference between epidemiology and toxicology? [DRAFT TRANSCRIPT ONLY]

C. Moase: A toxicology study is done at varying dose levels with a specific chemical. The whole purpose of a toxicology study is to find out what potential hazards or adverse effects could result from a chemical at what particular doses. Also equally important is to identify where there are no toxic effects — so at the lower dose levels — and also what the nature of those effects is. So it's a very prescribed study. [DRAFT TRANSCRIPT ONLY]

We look at a whole variety of toxicology tests — different durations of exposure, from a single exposure, which is an acute exposure, to repeated dosings over a few weeks to a few months to a few years in the case of the studies that we were talking about earlier, the long-term studies. [DRAFT TRANSCRIPT ONLY]

We're looking at a whole variety of toxicity studies. We're looking at different routes of exposure. We're looking at exposure not only by the oral route but also through the skin and by inhalation and comparing the findings that occur as a result of those different routes and durations of exposure. [DRAFT TRANSCRIPT ONLY]

Conversely, an epidemiology study is a population study where a segment of the population is assessed for disease, if you will, and trying to define what particular parameters might be linked to a specific disease. There are inherent limitations in that type of study, so we try to.... [DRAFT TRANSCRIPT ONLY]

B. Bennett (Chair): I'm sorry. There are inherent what? [DRAFT TRANSCRIPT ONLY]

C. Moase: Limitations with an epidemiology study. As I mentioned before, they're not a causal type of study as is a toxicology study. You're really trying to narrow down, in an epidemiology study, what might be associated with a specific disease, but you're not nailing it on the head unless you've got some exposure information there to help you interpret that particular disease outcome as well. Does that help? [DRAFT TRANSCRIPT ONLY] [1050]

S. Fraser: Okay. Yeah. Thanks. I'll just follow through with my thread here, although I've got a lot more questions, I guess, from your comments. There are no definitive ways of testing the effects on humans because.... I guess this is a question. You've already said that you've been doing testing on rats and mice — two-year lifespan. It's quite limiting there as far as potential impacts on human beings. [DRAFT TRANSCRIPT ONLY]

This study coming out of the States.... It's coming out of the States, so, again, this is after the fact. Out of the States, what we learned was that of the nearly 3,000 high-production-volume chemicals, 75 percent lack even the most basic toxicity tests. Of the 140 registered pesticides — this is the EPA, so the States — which the EPA considers to be neurotoxic, the majority have not been tested for developmental neurotoxicity. [DRAFT TRANSCRIPT ONLY]

Again, I would suggest that this is a specific sort of testing that you'd want to do regarding humans, but you can't expose humans knowingly to things in any kind of a controlled way. Again, there are lots of gaps here. [DRAFT TRANSCRIPT ONLY]

Then I would refer to, certainly, in the University of Cannes.... I don't know if you're familiar with their substantive work on glyphosate — Roundup, if you will. Their work suggests that human placenta cells, which are what they specifically work with, were very sensitive to Roundup — at concentrations lower than typical use, even. They suggest that this could explain the higher levels of premature births and miscarriages associated with women farmers in the U.S. using glyphosate. [DRAFT TRANSCRIPT ONLY]

There is certainly evidence there from respected scientific institutions and universities that is already in place. Of course, Monsanto was fined for false advertising around the safety of their product — in this case, glyphosate, or Roundup — and that goes back probably ten years. [DRAFT TRANSCRIPT ONLY]

Again, the precautionary principle — you're not able to test humans specifically. There are rafts of material that we've received — and I'm sure it's just the tip of the iceberg — suggesting in the only way possible, which is by the potential that exposure may be linked to things like these endocrine disruptions.

Certainly, specific studies show that placenta cells are specifically sensitive and could be adversely affected by small amounts of pesticide. There is all of that out there. [DRAFT TRANSCRIPT ONLY]

Citing the current work being done in the United States doesn't give me any comfort, because there is a substantial body of evidence to say that there are risks. We're just adjudicating the issues around cosmetic pesticides. So if you are using Roundup on your lawn to make it greener, it's not that you're making your lawn healthier even. All you're doing is you're killing the other stuff. It's not making the soil healthier. You're just killing stuff that's not grass. [DRAFT TRANSCRIPT ONLY]

Of course, the studies out of the university in Pittsburgh and others — again, not stated by Monsanto, the makers of Roundup.... This stuff is lethal on things like amphibians — frogs, salamanders, that sort of thing — even in small amounts. That you can test in the lab. [DRAFT TRANSCRIPT ONLY]

So I guess it's a whole raft of comments, and I don't really have a specific question, except.... The government's interpretation of the precautionary principle is woefully lacking, in my opinion. [DRAFT TRANSCRIPT ONLY]

C. Moase: If I can just comment or make a clarification on the ag health study, because you said that it's ongoing. It's ongoing, yes, but there have been numerous studies already published from that huge study. It's been ongoing since 1994. There has been a whole series of papers — 30 or 40 papers, at least — that have come out with their findings as they work through the studies. So just a clarification on that, in case I wasn't clear the first time. [DRAFT TRANSCRIPT ONLY] [1055]

From a neurotoxicity standpoint, you mentioned developmental neurotoxicity studies. Yes, that is one of the types of toxicity studies that can be required for pesticides. That's not the only type of neurotoxicity study that is required. We also require acute and sub-chronic neurotoxicity studies for those products that may be neurotoxic. [DRAFT TRANSCRIPT ONLY]

We also require developmental toxicity studies in rabbits, in rats. Sometimes we get them in mice as well, so we have a variety of species. We're able to look at neurotoxic effects from a variety of angles and in a variety of studies, so it's not necessarily that one study will tell you everything. It's really important to look across the database that we have. [DRAFT TRANSCRIPT ONLY]

B. Bennett (Chair): Can I just get you to clarify? This has been raised by a couple of different members. The precautionary principle, as I understand it, is actually defined in the legislation. It states: "Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent adverse health impacts or environmental degradation." [DRAFT TRANSCRIPT ONLY]

I've done some research on this, and it seems to me that that's the original language from — and I don't know if I'll get the city right — Rio de Janeiro, the conference there in 1998. So in fact, that is exactly verbatim, the precautionary principle as it was established at that time. Is that not correct? [DRAFT TRANSCRIPT ONLY]

J. Flint: It's fairly close. There might be one or two words different, but that's pretty close to the exact wording. It's also the wording that's been incorporated into the Canadian Environmental Protection Act, the Pest Control Products Act. There are a couple of other pieces of federal legislation that use this accepted definition of the precautionary principle. [DRAFT TRANSCRIPT ONLY]

B. Bennett (Chair): And the legislation in section 20.(1)(b) specifically requires the minister to consider that precautionary principle. You know, I may not understand this, but it seems to me that the precautionary principle is actually built

into the legislation. What you seem to be saying is that actually that standard is surpassed in the evaluations that you do. [DRAFT TRANSCRIPT ONLY]

J. Flint: That is correct. For example, if you were to register a new pest control product, in order to make a final decision under the Pest Control Products Act, you have to have reasonable certainty that no harm will occur to human health, the environment or future generations from following the conditions of the use of the product. That's the standard that's applied for a full regulatory decision. [DRAFT TRANSCRIPT ONLY]

The precautionary principle, which is included in section 20, is: once a product has been registered, 15 years after the registration we are doing a re-evaluation.... Or if a special review is requested and we're looking at a particular aspect of the product, if there is a study, if there is some scientific evidence that suggests that there is a threat of serious or irreversible damage and we don't have the full scientific certainty that says that that is going to happen, we need to look and say: "Okay. Do we need to take precautionary measures in advance of finishing our re-evaluation or special review?" [DRAFT TRANSCRIPT ONLY]

We can take steps to amend a registration, to cancel a registration prior to finishing our decision, with the idea being that at the end you would then look.... You would complete your re-evaluation. You would complete your decision to the point where you have full scientific certainty. You would request the studies that are required to give you adequate confidence in what it is you're.... [DRAFT TRANSCRIPT ONLY]

B. Bennett (Chair): I'm going to try this on you in layman's language. In the preregistration stage, when you are evaluating risk or threats, the standard is considerably higher than serious or irreversible damage. But when you get to the post-registration stage and you get into re-evaluation, you've got this precautionary principle there to be applied, if necessary. [DRAFT TRANSCRIPT ONLY]

J. Flint: Only during the course of the re-evaluation or special review. When you come to a final decision at the end of a re-evaluation or special review, you have to apply that same level of a reasonable certainty of no harm to occur. [DRAFT TRANSCRIPT ONLY]

This is just as you're looking at new evidence that may have come up — publicly available studies that may have been produced since the registration of the product. You want to be able to take all that into consideration, and if the scientists feel that there is a threat of serious or irreversible harm, which is more than just no harm, then there is the ability to make a decision prior to completing, prior to collecting all the scientific evidence, prior to making your final decision and to take action right away. [DRAFT TRANSCRIPT ONLY]

[1100]

So we can cancel the registration, complete the re-evaluation or special review and then reinstate the product after all the science has been evaluated. [DRAFT TRANSCRIPT ONLY]

B. Bennett (Chair): I'm not sure if Scott Fraser has more questions for now. Okay, we'll come back to you if you have some others. [DRAFT TRANSCRIPT ONLY]

J. Slater: Just further to Scott's questions, we had a report that farmers live longer than they should, considering they have all these chemicals on their farms, etc. The recent studies that we've seen on pesticides and neurotoxicity point to the links between in utero and early development exposure. [DRAFT TRANSCRIPT ONLY]

Have we done a study on farmers' kids or grandkids on ADHD, ADD, autism — those kinds of things? The research is out there on the people that have

been farming for 30, 40 years, and they use Roundup and all kinds of other chemicals that have been condemned since. Canada has approved them and then taken them off the market. [DRAFT TRANSCRIPT ONLY]

With some of these new findings on neurotoxicity, does Health Canada intend to increase the requirements on some of these chemicals and make sure that people are more qualified to spread these chemicals on farms and out in the public? [DRAFT TRANSCRIPT ONLY]

C. Moase: In terms of data requirements, first of all.... I think there are two parts to that question. There were the data requirements and then the qualification to use those chemicals... [DRAFT TRANSCRIPT ONLY]

J. Slater: Yeah. [DRAFT TRANSCRIPT ONLY]

C. Moase: ...if I hear that correctly. As I was mentioning before, there are data requirements that specifically look at neurotoxic potential for pesticides. There are the acute studies. There are repeat-dose, short-term studies, and there's the developmental neurotox study. [DRAFT TRANSCRIPT ONLY]

The developmental neurotox study is, relative to the rest of the toxicity studies, a newer study. But it's been in place for, roughly, about the last ten years or so. Relative to other toxicity studies which have been in place since the '60s or possibly before in some cases, that is a newer study. [DRAFT TRANSCRIPT ONLY]

Just as an aside, it's important to note that the protocols that we have for these studies do get updated on a regular basis to include more parameters as science evolves — for example, additional parameters that might look at endocrine or additional parameters that might refine the neurotox aspects and so on. Those are sort of an evergreen type of protocols that we update. So yes, there are protocols that do look at neurotoxic potential for pesticides. [DRAFT TRANSCRIPT ONLY]

In terms of what studies have been done in the Canadian population. I'm not sure if you're familiar with the Canadian health measures survey that was just released in August of 2010, I believe — last year. We're 2012 now. Sorry. It's called the Canadian health measures survey. [DRAFT TRANSCRIPT ONLY]

In that survey there were blood and urine samples taken from a cross section of the Canadian population to establish a baseline for certain chemicals, including specific pesticides like 2,4-D, like organophosphates and pyrethroids. Those results were released in August of 2010. So we're able to use some of that data to compare to some of the studies that have been released in the public literature — for example, from a highly agricultural-intense community that I think you were referring to, where there some associations with ADHD. [DRAFT TRANSCRIPT ONLY]

In that particular study, anyway, they were looking at a population in California with a highly intense agricultural area. The study from the Canadian health measures survey indicated that levels in the Canadian population were up to 50 percent lower than that California population. [DRAFT TRANSCRIPT ONLY]

I guess a roundabout way of answering your question is yes, we do. We are collecting data. We are collecting specific data to try to put into context some of these other studies that are appearing in the literature to help us determine whether we need to take more regulatory action or what have you — whatever the case may be. [DRAFT TRANSCRIPT ONLY]

J. Slater: Okay. [DRAFT TRANSCRIPT ONLY]

C. Moase: I can also point you to that link and our more fulsome response, if you're not familiar with the health measures survey. [DRAFT TRANSCRIPT ONLY] [1105]

J. Slater: Yeah. I'll look it up. [DRAFT TRANSCRIPT ONLY]

M. Sather: In one of your responses it's written that the PMRA seeks to minimize incidents of non-compliance by imposing clear label direction requirements and by implementing compliance programs that may involve monitoring and enforcement. [DRAFT TRANSCRIPT ONLY]

I just wanted to ask: what monitoring and enforcement have you done? [DRAFT TRANSCRIPT ONLY]

L. Hanson: We can certainly provide you with specific programs which have been carried out by our compliance directorate through their regional offices. Each year they do have specific programs which they carry out. These are specific programs to look at defined areas of the marketplace where they may be doing actual monitoring but also to look at how that product is being used and whether or not label directions are being followed. [DRAFT TRANSCRIPT ONLY]

Typically, it's a targeted process. The compliance regional offices also do act on complaints that we may receive as well. But typically, we're looking at a planned-out process for market surveillance each year. [DRAFT TRANSCRIPT ONLY]

M. Sather: It says here — and you repeated the word — that they may be done. Can you tell me, though, specifically, of enforcement that's been done on the ground — let's say in the last year, then — in a specific area? Who did it? Who were the targets? [DRAFT TRANSCRIPT ONLY]

L. Hanson: I can certainly go to our compliance directorate and get that information and supply that to the committee in our response. Certainly, it is public record — any of the enforcement actions that take place and also the specific programs that were carried out through the year. [DRAFT TRANSCRIPT ONLY]

I don't have those in front of me. I apologize for that, but I can certainly obtain that information for the committee. [DRAFT TRANSCRIPT ONLY]

J. Flint: Maybe I could add, just for further clarification, that the compliance directorate does about 30 to 40 targeted inspection programs a year. They may choose, for example, a particular crop area. [DRAFT TRANSCRIPT ONLY]

They may choose blueberry growers, and then they would target across the country, looking at targeted growers. They would do a selection of blueberry growers. They would do inspections, go on farms, take samples, bring them back to the lab, analyze them, look for the appropriate use of the product. Were the correct products used? Were they used appropriately? Interview the farmer. Take samples, as I said. [DRAFT TRANSCRIPT ONLY]

Every year we target, I believe, 30 to 40 individual programs. That would be doing inspections. There are also, as Lindsay mentioned, investigations. If we get reports of misuse, those are investigated by our regional staff as well, who would go out and investigate reports of misuse. [DRAFT TRANSCRIPT ONLY]

They also work quite closely with the provincial enforcement officers. They would have agreements with most of the provinces to work collaboratively with them so that the inspection program is expanded that way as well. [DRAFT TRANSCRIPT ONLY]

M. Sather: I read that the labels on a pesticide container are a legal document. With regard, then, to lawn and garden use, have you specific enforcement in that sector? You mentioned blueberry growers and the like, but what about the area that we're looking at? [DRAFT TRANSCRIPT ONLY]

J. Flint: I would have to confer with the compliance directorate to see what they've done. I know they've done some marketplace as far as sales of domestic products. I don't know what, if any, they have done as far as inspections on

domestic use of products by homeowners. [DRAFT TRANSCRIPT ONLY]

L. Hanson: We have, certainly, educational programs with regard to the use of domestic products — how to read the label directions. We certainly do a lot of work with that in raising the importance of the label for domestic products.

[DRAFT TRANSCRIPT ONLY]

[1110]

There is also a segment, of course, in the lawn care industry that does use commercial products, that being the lawn and landscape industry. They have certainly had programs in the past where our compliance division has had one of those programs for targeted compliance activities. It did apply to the use of those products in the lawn and landscape. Those would have been commercial products versus the domestic products which homeowners use. [DRAFT TRANSCRIPT ONLY]

M. Sather: So by and large, then, it sounds like it's safe to say that if you buy a can of pesticide at the local garden shop and you misuse it, you don't follow the application, you may not be abiding by a law, but there's really no one out there that's going to enforce proper compliance — any compliance — by the homeowner that's using these — unless, perhaps, as you said, if you have a complaint. [DRAFT TRANSCRIPT ONLY]

I don't know about that, but by and large, it sounds pretty unregulated — maybe completely unregulated. [DRAFT TRANSCRIPT ONLY]

I know you say it's safe to use it and you can spray it in your shorts and all that. But by and large, I'm sure there are, you would agree, some toxic levels and there can be misuse of these products. So you don't really know, then, how much misuse there is, do you? [DRAFT TRANSCRIPT ONLY]

L. Hanson: Certainly, as we've talked about throughout my last presentation and probably throughout these answers, you've seen several references to the label. That's basically what we'll always come back to. Those label directions are there for a reason. That was the basis for the assessment. That's how the products are expected to be used in the marketplace. [DRAFT TRANSCRIPT ONLY]

Certainly, with a domestic product situation, yes, they would be susceptible to the Pest Control Products Act themselves. If we received a complaint, they would have to be investigated. In terms of targeted compliance programs for the use of products in and around the home, typically, no. But again, on a complaint basis, yes, we could certainly investigate those actions in and around the home.

[DRAFT TRANSCRIPT ONLY]

Dr. Moase has also raised the point of incident reporting, which is also a good point. We do have a regulation which dictates that any incident, whether human health or environmental, is reported back to the registrant. It's a legal requirement that that is reported to us, and we do compile that data here at the agency and also look to see if there is any sort of trending that is occurring with respect to the use of a particular product. [DRAFT TRANSCRIPT ONLY]

B. Bennett (Chair): Just to follow up on Michael's questions, I'm curious about this as well. In your answer to question 8 you state that the PMRA expects a higher degree of compliance for products registered in commercial and restricted classes, and typically, users are provincially certified growers or certified applicators. So certified applicators, I assume, would include the lawn care folks that have a licence to put this stuff on. [DRAFT TRANSCRIPT ONLY]

Then higher up in the answer you also say that PMRA risk assessments do not assume that homeowners have the same level of training as professional applications. So I'm kind of curious. When the consumer takes a jug of whatever it is — Killex or Roundup or whatever the brand name might be — off the shelf and

goes home and applies it, there seems to be an implicit acknowledgment that they may in fact not do everything that they're supposed to do. [DRAFT TRANSCRIPT ONLY]

They may wear shorts and sandals and a T-shirt. They may not get the mix right. It may say a certain parts per million, and they may put double or triple or quadruple that amount in there. When you're doing your preregistration assessments, how do you deal with that unknown? [DRAFT TRANSCRIPT ONLY]

L. Hanson: What you're talking about is really the use of that product and exposure that might be occurring with, in this case, a domestic product. And we'll speak of domestic products specifically here. [DRAFT TRANSCRIPT ONLY]

[1115]

You'll notice with a label for a domestic pest control product that you won't find any specific requirements for what we refer to as personal protective equipment. That's for the very reason that you described — that we don't place that onus on the homeowner that he is going to suit up with all of the equipment that you might see a commercial pesticide applicator use. So this is indeed factored into the risk assessment process and the exposure assessment that we carry out. [DRAFT TRANSCRIPT ONLY]

Generally, you would find, with the domestic products, that a majority of them are in a ready-to-use format. In terms of their overall toxicity — you know, in terms of their overall hazard — typically, the hazard of those products would be lower as compared to a commercial product. For that reason, we don't have a requirement for the homeowner to take extra precautions that you might see with some of the commercial products. [DRAFT TRANSCRIPT ONLY]

In looking back at domestic products, a lot of them are in ready-to-use format. There are some concentrated products, as well, but a smaller amount. [DRAFT TRANSCRIPT ONLY]

I don't know, Connie, if you want to comment on how that is used in the exposure assessment. [DRAFT TRANSCRIPT ONLY]

C. Moase: Well, the exposure assessment. Again, we could provide some more details of this in our written response, but they're some of the conservative assumptions that go into estimating how much of that product the homeowner, in this case, would be using. [DRAFT TRANSCRIPT ONLY]

So when we say "while wearing shorts or a short-sleeved shirt," that speaks to the amount of dermal exposure or amount of bare skin. The homeowner may splash that product on their arm, for example. How much would then be absorbed through their skin? We take all of those parameters into consideration in coming up with the level of exposure that we would expect when a homeowner was using this product. [DRAFT TRANSCRIPT ONLY]

Lindsay mentioned that typically, there is no personal protective equipment specified on a domestic label. On occasion you will see gloves, for example, but again, the risk assessment is done without the expectation that that person is wearing gloves. So the gloves are there as a personal hygiene aspect, but from a risk assessment point of view, that's not included in the risk assessment. It's more of a worst-case scenario that we consider when we're compiling the level of exposure that the homeowner will get. [DRAFT TRANSCRIPT ONLY]

Just to follow up on more information that's in the response, we do a separate risk assessment for toddlers, for children. For example, toddlers have that wonderful hand-to-mouth behaviour. [DRAFT TRANSCRIPT ONLY]

We have information which we call hand-press information. We know that toddlers often have sticky hands and that they're crawling on surfaces, and stuff gets stuck to their hands. So we have scenarios that estimate how much transfer is from a hand, a sticky hand, into their mouth. All of those inputs go into determining how much exposure a toddler would get from a specific scenario,

whether it's a lawn-and-turf scenario or crawling around on a deck. [DRAFT TRANSCRIPT ONLY]

B. Bennett (Chair): All of those comments about the process apply to both the concentrated product, which is still available to the public here in British Columbia, and the stuff that you buy that's already mixed with water. [DRAFT TRANSCRIPT ONLY]

C. Moase: It would apply to any product that's going into the domestic stream as well as the commercial stream. There's a risk assessment for every product type, for every product. [DRAFT TRANSCRIPT ONLY]

B. Bennett (Chair): Okay, I got you. Thank you. [DRAFT TRANSCRIPT ONLY]

R. Fleming (Deputy Chair): I want to go back to the precautionary principle discussion as well, because I think there were some points where some of our witnesses touched upon the difference we've been discussing this morning, really, between the precautionary principle and the precautionary approach, which I think Dr. Delorme rightly pointed out in one of his answers is significant. Although only one word separates them, the operating definition is quite distinct. [DRAFT TRANSCRIPT ONLY] [1120]

I want to do that because I think it's important for the committee to have clear testimony that in fact the precautionary principle is not the operating guideline of the PMRA and Health Canada in how it reaches conclusions on the safety of products. That's not the decision-making matrix for this agency. [DRAFT TRANSCRIPT ONLY]

So I'll maybe ask for an additional clarifying comment on this distinction. I think that Dr. Moase, when she was discussing epidemiology in one of her earlier responses, described it as a scientific approach that is looking for an association, not a causation, between chemical products and negative health impacts. I think that eliminated, maybe, the distinction that we're looking for here at the committee. [DRAFT TRANSCRIPT ONLY]

The precautionary principle is looking for associations that pose a plausible risk — not an absolute certainty or a conclusion but something that is suspected. When you look at the studies from epidemiologists and others that have been presented to this committee over several months, numbering in the hundreds, that's exactly what they're talking about. [DRAFT TRANSCRIPT ONLY]

That's exactly what Ontario, Quebec and now four other provinces based their ban on: an interpretation and an adoption by policy-makers of the precautionary principle in legislation, which is something that.... If I could ask our witnesses to state clearly whether that is in fact the overarching operating principle and legislated mandate of your agency. [DRAFT TRANSCRIPT ONLY]

L. Hanson: I guess what I'll do is make a comment, and I'll have Mr. Flint reiterate what the Pest Control Products Act refers to. But I think, through all of this, what's important to recognize.... [DRAFT TRANSCRIPT ONLY]

We'll certainly look to provide some clarification in our written responses as well. I think an important point here is to point out that we don't look at anything in isolation. That's a big issue that you may have come across in receiving a lot of these reports, a lot of these studies, a lot of these publications. You're right. You're looking at, specifically, epidemiological reports in isolation. [DRAFT TRANSCRIPT ONLY]

We also look at those reports. But as I talked about, we also look at the toxicology database that we do have. You talked about the fact that you've received hundreds, if not thousands, of studies. We have literally tens of thousands

of studies in our database with respect to these pest control products. Particularly when we are doing our re-evaluation, we have to, under the act, consider any of the available public information that is out there, the epidemiological papers that you referred to. Certainly, our scientists are aware of those and have to, again, factor those into our decisions. [DRAFT TRANSCRIPT ONLY]

Again, I just want to reiterate. It's important that we don't consider any of these studies themselves in isolation but that we look at, basically, a weight-of-evidence approach in considering all of that information before us. [DRAFT TRANSCRIPT ONLY]

It is a bit of a disadvantage, certainly, for individuals external to the agency. They do not have direct access to the toxicology studies that we do have here in order to make a determination of biological plausibility. Under the act, they can access those studies after a product has been registered and look at those studies, if they wish, in what we refer to as a reading room. But again, it is important to point out that we do not look at any of those studies themselves in isolation. [DRAFT TRANSCRIPT ONLY]

Jason, did you just want to comment again on the precautionary principle? [DRAFT TRANSCRIPT ONLY]

J. Flint: Sure, I can do that. [DRAFT TRANSCRIPT ONLY]

You asked about the mandate in our act. Well, the primary objective is to prevent unacceptable risks to people and the environment in the use of pest control products. The legislation says we have to take a science-based approach in doing that, and it defines "acceptable risk." [DRAFT TRANSCRIPT ONLY]

It says: "For the purposes of this Act, the health or environmental risks of a pest control product are acceptable if there is reasonable certainty that no harm to human health, future generations or the environment will result from exposure to or use of the product, taking into account its conditions or proposed conditions of registration." [DRAFT TRANSCRIPT ONLY]

[1125]

That level of certainty that's required, that level of no harm that's required, we feel, exceeds what's required under the definition of precautionary principle as adopted from Rio, which talks about there being risk of serious or irreversible harm. [DRAFT TRANSCRIPT ONLY]

I'll read that one. "Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent adverse health impacts or environmental degradation." That is the level of protection that we used for making our decision that there should be a reasonable certainty of no harm. [DRAFT TRANSCRIPT ONLY]

B. Bennett (Chair): I have to tell you that we had great difficulty hearing the full answer. It goes in and out. That's what it sounds like from this end. [DRAFT TRANSCRIPT ONLY]

J. Flint: We have microphones on the ceiling here. That's the challenge. [DRAFT TRANSCRIPT ONLY]

B. Bennett (Chair): In any case, we'll have the *Hansard* record after this, and we'll get your written responses to our questions as well. [DRAFT TRANSCRIPT ONLY]

Rob Fleming has some more. [DRAFT TRANSCRIPT ONLY]

R. Fleming (Deputy Chair): Just picking up on some of the answers I could decipher there, the last comment in particular, which was the affirmation again that the precautionary principle informs the legislation. The definition around cost-effective and other things, which is not standard and is not lifted from

the Rio declaration, provides maybe some room for interpretation here. Another commonly attributed description to the precautionary principle is the no-regrets principle — another way of explaining it. [DRAFT TRANSCRIPT ONLY]

That is not, in my understanding, the way that Health Canada makes its decisions and recommendations on some of these products. If it did, as we heard from previous testimony, Health Canada would not have made mistakes where it has pulled products that it once certified as safe from the market, from the shelves in stores that Canadians access regularly. As we heard previously, that has happened with dozens and dozens of products. I would make that suggestion and invite comment. [DRAFT TRANSCRIPT ONLY]

What I think are often held up as examples of use of the precautionary principle by governments and policy-makers are the steps that countries — like Sweden and Holland and Germany and, indeed, now six provinces in Canada and some states in the U.S. — have taken where products that you, Health Canada, certify as safe to use are restricted and banned from certain areas. [DRAFT TRANSCRIPT ONLY]

There are U.S. jurisdictions that have laws that prohibit products that in Canada can be used virtually anywhere. You cannot use them, in certain U.S. states, where there are playgrounds and other public areas where children may be exposed. That, to me, is an example of other jurisdictions creating laws based on the precautionary principle, whereas Canada at the federal level does not do so. [DRAFT TRANSCRIPT ONLY]

Again, I think the definition was quite apt from Dr. Delorme — that what we in fact use here is best described as the precautionary approach. So there is consideration of harm. There is obviously a thorough risk assessment. There is review of scientific literature that is supplied by industry. [DRAFT TRANSCRIPT ONLY] [1130]

That's what informs the list of pesticides that are available in Canada and your advice as an agency to political decision-makers. [DRAFT TRANSCRIPT ONLY]

B. Bennett (Chair): Response? [DRAFT TRANSCRIPT ONLY]

J. Flint: I guess there's a lot to respond to there. [DRAFT TRANSCRIPT ONLY]

You talked about removing products from the market. Pesticides are actually one of the more stringently regulated products out there. The fact that we have modern legislation requires that product decisions be reviewed every 15 years, on a cyclical basis, to see if they continue to meet scientific standards, evolving science, so that changes can be made. [DRAFT TRANSCRIPT ONLY]

Now, some of the products removed from the market are not necessarily removed because of health or environmental risks. Registrants can remove their products from the market during re-evaluation, simply because they don't wish to maintain all of the products just because of the cost of generating all of the data that we require. [DRAFT TRANSCRIPT ONLY]

We require a significant amount of data to support the regulatory decisions that we make prior to registration, and we often ask for significant data on older products, when it comes time for re-evaluation, to ensure that we have a level of comfort with the decision that was made. [DRAFT TRANSCRIPT ONLY]

I believe that five or six years ago we were looking at making all of our records electronic. We estimated that just proprietary studies that are submitted to us, which we keep on file, amounted to about 23 million pages of scientific studies that are used to support the decisions that we make on pesticides, which is fairly significant. [DRAFT TRANSCRIPT ONLY]

A lot of those studies, as I said.... We will get modern studies, as Dr. Moase indicated, as science evolves, as new studies come along, as protocols change and get updated. We request updated scientific information be provided to

us to continue to support.... [DRAFT TRANSCRIPT ONLY]

B. Bennett (Chair): Try not to move so much. Sorry. [DRAFT TRANSCRIPT ONLY]

J. Flint: We'll do it again. [DRAFT TRANSCRIPT ONLY]

We do what we can to continue to make sure that we have the most up-to-date database and decisions. [DRAFT TRANSCRIPT ONLY]

So yes, there can be changes. For a number of the products that we put through re-evaluation, we will change label directions somewhat. We will make sure that they're consistent with new requirements for personal protective equipment, for example, in commercial products to make sure that the products are up to date and nothing was overlooked or nothing has changed since the last time a decision was made. [DRAFT TRANSCRIPT ONLY]

B. Bennett (Chair): Anybody else from Ottawa on that one? [DRAFT TRANSCRIPT ONLY]

Rob, do you want follow up on that? [DRAFT TRANSCRIPT ONLY]

R. Fleming (Deputy Chair): I actually want to move on to a related topic around review triggers. [DRAFT TRANSCRIPT ONLY]

The gentleman just mentioned the 15-year cyclical basis of product review. I wanted to ask him if it's in fact simply a calendarized review that informs the priorities for which products are looked at and reviewed or whether there are other factors at play in his organization. [DRAFT TRANSCRIPT ONLY]

We have received, in one of your answers in response to a written question about the International Agency for Research on Cancer, a description of how your agency reacts when some of the chemicals have been tested and the research submitted to your agency shows a correlation between a particular pesticide and cancer in laboratory animals but they're then deemed by the research to not pose a cancer risk to humans. Now, that obviously would be treated more seriously, I would think, than laboratory research submitted to your agency that shows no causation of cancer in animals and none in humans as well. [DRAFT TRANSCRIPT ONLY]

Maybe if you could illuminate for me how many products are sold that have shown cancer causation in animals but not humans and whether those products receive more oversight, more regularized review than others that are perhaps deemed a lower risk. [DRAFT TRANSCRIPT ONLY]

I'm just trying to understand that for myself — how you, again, make priorities on which products to review. Surely it's not just on the basis of when 15 years comes and goes. [DRAFT TRANSCRIPT ONLY]

[1135]

J. Flint: There's a requirement in the act that it be not more than 15 years. So a re-evaluation can take place sooner if there is some reason to trigger it. A re-evaluation also looks at all aspects of the product. It looks at the environment, the health, the value and assesses all of those things. [DRAFT TRANSCRIPT ONLY]

If there was something that triggered — for example, a study or determination of a potential risk.... A special review could be triggered which looked at just that aspect of the product. If cancer was the particular trigger that you were referring to, if there was a study that suggested there was a cancer risk that we had not previously identified and it needed to be assessed, we could conduct.... The act permits a special review to be conducted at any time. [DRAFT TRANSCRIPT ONLY]

Also, if you have other OECD countries that remove all uses of a pest control product for health or environmental reasons, that would trigger a review from the PMRA of that particular product to see if those particular conditions

were germane to the decision of registering the product here in Canada, and a change could be made there. [DRAFT TRANSCRIPT ONLY]

Also, information provided by the provinces to us could be used to trigger such a review. So long as there's a scientific basis for us to look at it, if there's a reason for us to go back and open up a file and review a decision that was made previously, we can do that in a period less than 15 years. But the legislation indicates that no more than 15 years will pass before we initiate a review of a product. [DRAFT TRANSCRIPT ONLY]

R. Fleming (Deputy Chair): Thank you for that response. I was also going to add your list. Is it fair to add the courts in this country as one of the things that might trigger a review? I know that you're now being required to review chemicals that may pose a risk to amphibian life and ecosystem biodiversity, on the basis of a court decision which Health Canada intervened and opposed. [DRAFT TRANSCRIPT ONLY]

J. Flint: The court decision in question was.... Any person can request that the PMRA conduct a special review, and you need to provide scientific evidence to support your request. In this particular case, we had denied the request. In the case you're thinking of, we denied a person's request to conduct a special review of a particular active ingredient, based on the original 29-page submission that was provided to us. [DRAFT TRANSCRIPT ONLY]

That was appealed, and they narrowed it down to one particular aspect where we had.... The documentation provided to the court did not indicate that a particular risk had been addressed, and we've been asked to go back and look at that one particular risk and determine if a special review is required. We are currently in the process of making that decision to determine if a special review is required for that particular risk that was identified. [DRAFT TRANSCRIPT ONLY]

C. Moase: If I could just follow up on one other point about distinguishing between hazard and risk. You pointed out that there are a number of chemicals that are labelled as carcinogens, whether they be pesticide or whatever the case may be. I think it's important to note that it's not just the hazard component. [DRAFT TRANSCRIPT ONLY]

We go beyond the hazard identification into putting that information into the risk assessment, because it's not just identifying whether a chemical has carcinogenic potential or not. It's then identifying the level of exposure, the potency of that carcinogenic activity, the length of exposure that a person's going to have and so on. So that is all encompassed into the risk assessment. [DRAFT TRANSCRIPT ONLY]

That is done for not just whether or not there's cancer potential but whether there's reproductive toxicity, whether there's liver toxicity, whether there are effects on body weight, and so on. All of those are elements that go into the risk assessment component. [DRAFT TRANSCRIPT ONLY]

B. Bennett (Chair): Okay. Rob, is that good for now? [DRAFT TRANSCRIPT ONLY]

R. Fleming (Deputy Chair): I have several more questions, Chair. But if other members wish to.... [DRAFT TRANSCRIPT ONLY]

B. Bennett (Chair): Okay. Well, we'll switch over to John Slater, and I don't have anyone after John. I've got a couple eventually. There's some more. We've got lots. We'll get back to you. [DRAFT TRANSCRIPT ONLY]

[1140]

J. Slater: On this subject.... You know, sometimes we have incidents that

happen after a product's registration. I look over the last ten, 15 years, 20 years even. DDT was eliminated about 25, 30 years. You know heptachlor, toxaphene, chlordane, Diazinon. In certain instances CFIA said: "No. Not allowed to use it anymore." Guthion is probably the latest one that's affected British Columbia.

[DRAFT TRANSCRIPT ONLY]

Those are all organophosphates. How do you treat organophosphates that are used on our food product differently than...? I'll use ureabor and quintozene, which are purely cosmetic, for golf courses, for.... Ureabor was a great product that killed every weed in the area for a year. How do you treat those any differently? [DRAFT TRANSCRIPT ONLY]

P. Delorme: I think one of the things that we've tried to impress upon you is that science changes over time. So the fact that there are chemicals no longer on the market reflects the fact that we're trying to keep up with what's going on and make sure that our assessments are modern and they meet modern standards for acceptability, that the data that is used, that we have access to, is modern — up to modern standards and whatnot. [DRAFT TRANSCRIPT ONLY]

It's continually evolving as our science knowledge evolves. As our methods for assessment evolve, our decisions evolve as well. Nothing stays static. [DRAFT TRANSCRIPT ONLY]

In the case of DDT, I think you can look at DDT as being one of the chemicals that probably resulted in having a modern science-based risk assessment for pesticides. Prior to DDT there weren't really any environmental evaluations done. It was with that product that we saw Rachel Carson's book, and we saw the birth of a modern environmental risk assessment. It's been evolving ever since. [DRAFT TRANSCRIPT ONLY]

C. Moase: The chemicals that you're referring to, as you say, were discontinued or not registered like 20, 30 years ago. So it's quite a time difference between those versus the current re-evaluation chemicals, which we were speaking about earlier, where there has actually been more changing some of the label statements and changing some of the personal protective equipment. There's a large difference between an outright discontinuation of the entire product versus changing some of the label statements based on newer standards. [DRAFT TRANSCRIPT ONLY]

P. Delorme: I think that another important thing to recognize is the fact that, as Connie mentioned earlier, there's hazard, which is basically the toxicity, and then there's risk, which is the combination of hazard with the potential for exposure. That's a fundamental concept in what we do. We look at the toxicological database, but we then compare it against what the likely exposure is going to be in the environment through whatever activities humans are doing, or animals in the case of the environment. [DRAFT TRANSCRIPT ONLY]

C. Moase: One challenge we do have with all the information that does go out publicly, that's in the public media, is saying: "This chemical causes neurotoxicity, reproductive effects and so on." At certain doses that may be the case, but it has to be put into context with the much lower levels of exposure that are considered acceptable for registration of a given pesticide. So you need to keep in mind what that level of exposure is, not just the hazard potential of a high dose of a given chemical, whether it be a pesticide or any other chemical given, in an animal toxicity study under experimental conditions, every day of that animal's life. [DRAFT TRANSCRIPT ONLY]

It all has to be put into context with the level of exposure that humans are expected to get, whether it's through their diet, whether it's through using it in a

domestic situation, whether it's on the golf course and so on. So all of that is the contextual piece that's often missing in a lot of the public information that is out there. [DRAFT TRANSCRIPT ONLY]

J. Slater: A comment was made that, you know, there are certain chemicals that are available in Canada that you can't buy in the States. But the contrary is true. The EPA approves certain chemicals in the United States that aren't allowed up here any more. [DRAFT TRANSCRIPT ONLY]

Can you comment on science based in Canada, science based in the U.S.? Is it anecdotal? Is it data that we've received from health care officials? How do you make your determination on what it does do — whether it's rats or mice or humans or whatever? Can you comment on that? [DRAFT TRANSCRIPT ONLY]

[1145]

C. Moase: The risk assessment principles are essentially the same in the U.S. and Canada. I mean, we do a lot of work-sharing and joint reviews with our partner, the EPA. That said, there are different legislative aspects that we take into consideration when we do a Canadian risk assessment, if you will, versus the U.S. risk assessment. There are different considerations under the Pest Control Products Act that we apply that are different in the States. [DRAFT TRANSCRIPT ONLY]

For example, we apply an additional safety factor, which we call our PCPA factor — which is an additional ten on top of the ten-by-ten safety factor, so a 1,000-fold safety factor. That's strictly a Canadian-legislated aspect for occupational workers, for example, and for children, for the vulnerable population. So that may be the source of some difference. [DRAFT TRANSCRIPT ONLY]

There may also be differences in use patterns between the two countries, which will dictate whether or not it's registered for a particular use. As we mentioned earlier, for each and every specific use there is a risk assessment for that specific use. It's not just: "Yes, you can use this pesticide for whatever use you may want." It comes down to the use pattern and the different legislations that may apply, that are layered on top of the fundamental risk assessment. [DRAFT TRANSCRIPT ONLY]

J. Slater: That makes sense. Also, when you deregulate a chemical — and I'll use the greenhouse industry as an example — you give it a temporary registration and say, "Well, you've got to find something else within 18 months or 24 months" or whatever it is. How much do you guys get involved with the chemical companies to replace the quitozene? I mean, there's a new product out there to take care of snow mould on the golf courses. You obviously told the golf courses: "You can't use quitozene after 2011." [DRAFT TRANSCRIPT ONLY]

How does that work? If we do have chemicals that we're looking to extinguish in Canada or in certain provinces or wherever, how do we get kind of a lower-toxic chemical back into the market to take care of some of these health risks? [DRAFT TRANSCRIPT ONLY]

P. Delorme: Part of the considerations and re-evaluation are: what other products are available for those particular uses? That's certainly a consideration. We're always encouraging registrants to come in with new products, especially when we've identified an area where we know a product is going to disappear that may be necessary for a certain use. [DRAFT TRANSCRIPT ONLY]

One of the other things that the agency does through its re-evaluation program is develop transition strategies. So if you had a product that has a particularly large use, where you know there could be impact on agriculture through its removal, you would want to be prepared and make sure that you have other products that are either registered or in the pipeline to make sure that there are going to be replacements there. [DRAFT TRANSCRIPT ONLY]

In certain cases, we have extended the use of products longer than we anticipated because no other products are available for those particular uses, even though we found that the risks aren't acceptable. That doesn't happen very often, but it is a fact, and the legislation does allow for that in certain cases. I think we are aware of that. We do take that into consideration when we're making our decisions. It's not always easy, because it's up to the registrants to come forward with products. [DRAFT TRANSCRIPT ONLY]

M. Sather: We've had a lot of discourse about the.... I guess deregistration is the word for a pesticide, in any event, that was approved for use but is either no longer approved at all or is approved at different dosages than it previously was. That is the case, then? There are some chemicals that you have deregistered in this manner? [DRAFT TRANSCRIPT ONLY]

C. Moase: That is correct. [DRAFT TRANSCRIPT ONLY]

[1150]

M. Sather: I think that speaks to why some health professionals and members of the public are talking about a precautionary principle. You know, mistakes are made or new information comes to light, and it says that a product that was formerly approved as safe is no longer considered safe. So they're saying: "Why take the risk if we're talking about having a nicer-looking lawn or the best roses on the block?" I think that's the point of this. Obviously, you either made some mistakes or, more likely, some new information came to light that caused you to re-evaluate. So there is uncertainty there, of course. That's to be expected. [DRAFT TRANSCRIPT ONLY]

That is, I think, the point of why much of the public is calling for a ban on the cosmetic use of pesticides. I don't know if.... I gathered from the material I read that you're not in favour of such a ban, but maybe I'll ask you outright whether you're in favour of a cosmetic ban or not. [DRAFT TRANSCRIPT ONLY]

L. Hanson: I don't think you would have read anywhere in our materials that we have taken any sort of position on what you referred to as cosmetic pesticides. I think in some of our responses, certainly, we have defined or tried to indicate that we actually do not define "cosmetic pesticide." That term itself seems to carry its own connotation in terms of, maybe, its subjectivity. [DRAFT TRANSCRIPT ONLY]

When we register a product, the registrant comes in, and he has proposed uses for that product on its label. We are required under the act to look at those specific use patterns to determine if that product can be used safely. We do that through looking at the toxicology data and the exposure data in order for us to determine if that risk is going to be acceptable. So I don't think you would see any of our material where we are talking about taking a position on how these products are being used in the urban environment. If a product, again, comes to us for use in the domestic market, we will look at it for that specific use and make a determination if it's safe to use when used according to the label. [DRAFT TRANSCRIPT ONLY]

M. Sather: I have other questions, Chair, but if there are others.... Are we taking a...? [DRAFT TRANSCRIPT ONLY]

B. Bennett (Chair): Well, I'll tell you what we can do. We can maybe do one question each and just keep going around and try to get through as many of the questions as we can. [DRAFT TRANSCRIPT ONLY]

Just out of respect for the folks in Ottawa, do you need a five- or ten-minute break or anything, or do you want to carry on? [DRAFT TRANSCRIPT ONLY]

C. Moase: We can carry on. [DRAFT TRANSCRIPT ONLY]

B. Bennett (Chair): Okay. [DRAFT TRANSCRIPT ONLY]

[1155]

L. Hanson: We've just made a note here that certainly we do have information that we can include on our re-evaluation program. I don't know if that was in any of the previous answers, but we do have some statistical numbers based on the re-evaluation program which we are currently under that will show the number of products that have been discontinued, the number that have continued registration and those that have had to have changes made to their current labels. [DRAFT TRANSCRIPT ONLY]

B. Bennett (Chair): I think we're going to change our approach here a little bit. We're going to allow one question per member. We're just going to go around here and see if we can get through all of them. So we're switching from Michael Sather to Scott Fraser. [DRAFT TRANSCRIPT ONLY]

S. Fraser: Thank you very much. I had a couple of questions, but a new one came up, so I'm going to throw it in first this time around. It is based on the response to John Slater's last set of questioning around, essentially, deregulating of products, removing them from the market whether or not they've been determined in subsequent studies or in a review to be unsafe for health or for whatever other reasons. [DRAFT TRANSCRIPT ONLY]

If I'm not mistaken, the response I heard was that that decision might be affected by whether or not there are viable alternatives either available or in the pipe. That actually raises some concerns to me. I am certainly mindful of the economic implications of removing a pesticide because it has been found unsafe. But removing it regardless, because it could have implications, if there isn't a viable alternative.... I mean, you're supposed to be looking at health outcomes, and I know you are. [DRAFT TRANSCRIPT ONLY]

So did I get that right — that decision? If subsequent studies show that something should be removed from the market.... On top of considering the precautionary principle, you'll consider the market implications for the company, for the industry, for the sector, based on if there is another viable alternative. [DRAFT TRANSCRIPT ONLY]

How would that in any way affect a decision to deregulate? [DRAFT TRANSCRIPT ONLY]

P. Delorme: I think part of it is the timing, and some of it is the nature of the effects — okay? There are cases where it would be clear if it would be off the market as soon as possible. In other cases, depending on the risks that are identified, it may take some time to transition something off market. [DRAFT TRANSCRIPT ONLY]

C. Moase: It's not a situation of whether or not to deregister something. It is a question of the schedule for phasing it out. So there is a lot of consideration in terms of how quickly that can be done from a realistic point of view. [DRAFT TRANSCRIPT ONLY]

S. Fraser: Just to finish off, for clarity. If new information has come to light that shows there is a health risk to the public from exposure to a certain substance — a certain pesticide, herbicide — there might be a decision to continue that exposure until some viable alternative by some company might be produced? I hope I don't have that right. [DRAFT TRANSCRIPT ONLY]

L. Hanson: Certainly, what we've seen with the re-evaluation program....

If we have identified a risk — a health risk or an environmental risk — that we consider is serious and what we refer to as an imminent threat, certainly the authority exists under the act for us to move very quickly to remove something from the marketplace. [DRAFT TRANSCRIPT ONLY]

I think what we're talking about here is where we might have identified that there is a lesser risk, whether it be to the environment or human health, that we are looking to mitigate. In some instances we are looking for other products to come to the marketplace. Depending on what that risk looks like, we typically have what is referred to as a phase-out program. [DRAFT TRANSCRIPT ONLY]

Again, if there was something imminent, whether it be health or environmental, a product can be removed right away. But more often what you do see is a phase-out sort of approach. Quite often you'll see a publication under the evaluation where it will refer to the last date of retail sale, being typically the last day of a calendar year. That will be followed then by a last day of use of that product, usually the following year. [DRAFT TRANSCRIPT ONLY]

[1200]

That's usually to allow for the kind of orderly phase-out of that product, but that's still not to say that we can't remove something immediately from the marketplace. [DRAFT TRANSCRIPT ONLY]

B. Bennett (Chair): Scott, were you able to hear that well enough? Any part of it that you want repeated? [DRAFT TRANSCRIPT ONLY]

S. Fraser: I'm getting better at interpreting, Chair. [DRAFT TRANSCRIPT ONLY]

But just so that you know, it's a very jerky type of conversation from that side. The response to the question was intermittent at best. I guess I'll look forward to seeing the *Hansard*, because I think if we tried that again, we might just end up with the same result. [DRAFT TRANSCRIPT ONLY]

I think I got the gist of it, Chair. [DRAFT TRANSCRIPT ONLY]

L. Hanson: I can certainly discuss a specific example that we have — combination products. These are the fertilizer and pesticide combination products where we have a phase-out of the use of those products. I believe the last date of retail sale for those products is the end of 2012. Certainly, we have identified certain risks with those products. They tend to be, in those cases, on the value side of the equation, in that the product was not meeting our standards for best practices with respect to lawn care, in terms of weed control. That's just an example of the type of phase-out program that we can have. [DRAFT TRANSCRIPT ONLY]

B. Bennett (Chair): Okay. I think that when you submit the answers to the questions that we provided you, it would be useful to get that explanation of how you deal with the phase-out process. I think what I heard was that if the risk is significant enough you can yank the product immediately, but you assess the risk of phasing it out as opposed to just yanking it. I think you should explain that in a paragraph or two, if you don't mind. [DRAFT TRANSCRIPT ONLY]

L. Hanson: Certainly. [DRAFT TRANSCRIPT ONLY]

R. Fleming (Deputy Chair): I'm going to ask one of the questions that was submitted to you last week, but maybe just try, if the signal is clear, and get something on the record today. That was about something that's taken off your website that reads: "The PMRA laboratory scientists evaluate the product chemistry data that companies must provide as part of the submissions for registering any pest control product." [DRAFT TRANSCRIPT ONLY]

The question I want to ask is one, I think, that probably comes up a lot and you are used to answering. That is to ask Health Canada if they rely on and require

industry to supply the data. How does your agency manage the real or perceived conflicts of interest for this scientific evidence? In other words, how do you deal with...? [DRAFT TRANSCRIPT ONLY]

Maybe there are some real-life examples where there could be, even though it would be horrible and criminal to do so, cases where studies that have results that do not support the registration of the product — which are done by the industry that hopes to market and sell and make money commercially off the product — might be suppressed, versus the studies that show a non-correlation or the safety that your agency would be checking the validity of — that those ones go forward. [DRAFT TRANSCRIPT ONLY]

I'm not saying that I know this to true, but because the independence of the studies is not there — it's an industry-supplied model that you operate under — how do you manage the perceived and perhaps real conflicts of interest? [DRAFT TRANSCRIPT ONLY]

L. Hanson: I guess there are a number of points, to begin on that. Again, this goes back.... If you referred to the presentation that I did last October in describing the numbers of toxicology studies, for example, that are required to register a product in Canada, there are well over 200 toxicology studies, types of studies that are required to register a product in Canada. Certainly, the larger registrants have their own laboratories where those studies are conducted. Many of the studies themselves are conducted by other third-party laboratories. [DRAFT TRANSCRIPT ONLY]

[1205]

I think a key component of looking at that data is that, first of all, that data is required under our legislation. They have to meet specific data requirements. Those studies are required to follow OECD guidelines. These are the guidelines that are used around the world in terms of looking at that specific data set. [DRAFT TRANSCRIPT ONLY]

When those studies come in, certainly it is the job of our evaluators to act as the peer reviewers. The studies are required to come in with all of the raw data. If you recall, I showed you a picture of how large a particular study is — thousands of pages of data that are required to register a product. Our evaluators do act, certainly, as the peer reviewer of that data. [DRAFT TRANSCRIPT ONLY]

Within those studies themselves, again, there are certainly good laboratory practices, better follow-up and quality assurance programs. Those labs, as well, are audited — looked at to make sure that they are following those programs. [DRAFT TRANSCRIPT ONLY]

You've probably heard of the millions of dollars that are spent to conduct particular toxicology tests. The recordkeeping is really extraordinary in terms of the detail that is required to conduct a toxicology test. Again, that information must be supplied to us. So really, when we talk about studies that are required at the PMRA, again some of them are conducted by those large companies, and some are conducted by third-party laboratories. [DRAFT TRANSCRIPT ONLY]

I can also tell you that those laboratories, particularly with the larger companies, also are doing work in the pharmaceutical world. Those types of studies are typically the same types of studies that are conducted for human pharmaceutical drugs as well. [DRAFT TRANSCRIPT ONLY]

B. Bennett (Chair): Satisfied with that, Rob, or do you want to...? [DRAFT TRANSCRIPT ONLY]

R. Fleming (Deputy Chair): Well, just, I think, the part that Mr. Hanson didn't touch on is around testing bias and the intrusion, potentially, of testing bias to infiltrate the research that is submitted to Health Canada. Are there any examples where this has been uncovered, either in products that you have retested

and withdrawn from the market or in other circumstances? [DRAFT TRANSCRIPT ONLY]

L. Hanson: Certainly, it's important to emphasize that, again, the companies must submit all of the data in terms of all of the raw data, those many volumes of data that I referred to. It's the job of our evaluators, both on the environmental toxicology side and the human health assessment side, to actually look at that data, to do the cross-reference checks, to assess that data to make a determination. Is that chemical having an effect in terms of elucidating the toxicology profile of that chemical? That's really the job of our scientists here at the agency, some 350 scientists that we have on staff. [DRAFT TRANSCRIPT ONLY]

P. Delorme: I think it's also important to understand that the majority of the testing that's done, whether it's fate or toxicology, is done under internationally agreed-to protocols, either through the OECD protocols or through EPA protocols. These are protocols that have been developed by groups of scientists who have knowledge and expertise in particular areas. The companies follow these protocols and submit the data, and then the job of the scientists that work here is to look at those and undertake a review to make sure that they're scientifically sound. [DRAFT TRANSCRIPT ONLY]

A lot of the studies are done under what is called GLP, which is good laboratory practice, which is basically a.... I don't know the best way to describe it. [DRAFT TRANSCRIPT ONLY]

Interjection.

P. Delorme: It's a certification process — that's correct — where basically you should be able to follow the path of any sample that's taken through all the analysis that is done on it. [DRAFT TRANSCRIPT ONLY]

As a company goes through and does a study, the study director and all the staff involved are expected to note down when it's handled, how it's handled, what's done to it, etc. That's included as part of the information that we get, and the study directors sign off that the study's been conducted under GLP. GLP certification is something that an individual lab would have, and they can lose it if they fail audits. [DRAFT TRANSCRIPT ONLY]

[1210]

So there are a number of different things that come in here. You know, in terms of study bias, I'm not really sure what you're trying to get at there. [DRAFT TRANSCRIPT ONLY]

The other thing to note is that we get the raw data from the studies as well, and our scientific staff who do the evaluations look at that and make sure that it makes sense. I mean, these are people that are trained in these various areas, and they can look at the data and determine whether or not there's something amiss. And we do reject studies at times. [DRAFT TRANSCRIPT ONLY]

B. Bennett (Chair): We can come back to you, Rob, hopefully. We're just going to go through the rotation here. [DRAFT TRANSCRIPT ONLY]

I'm going to just use my question time here to ask you: when you answer the question...? On the new set of questions that we sent you, there's a question — it's No. 20 — on the precautionary principle. When you answer that, can you flesh out the difference between...? [DRAFT TRANSCRIPT ONLY]

What I think you suggested earlier, one of you, was a "precautionary approach." There seems to be some difference of view on the difference between a precautionary approach and how you establish the assessment of risk in the preregistration analysis versus the application of the precautionary principle. [DRAFT TRANSCRIPT ONLY]

It also relates to the difference between epidemiology, which goes to

associations, and toxicology, which goes to causation. If I understand it, the suggestion has been that you've got associations being revealed by epidemiological studies — not all of them, but there are some for sure — and the suggestion, I think, is that if you applied the precautionary principle to what those studies show, you would actually limit or terminate the use of some pesticides.

[DRAFT TRANSCRIPT ONLY]

If you could give us a page on how that all kind of settles out, I think it would be helpful to the committee. Is that a good enough description of what I'm looking for? [DRAFT TRANSCRIPT ONLY]

L. Hanson: Yeah, that's fine. [DRAFT TRANSCRIPT ONLY]

B. Bennett (Chair): Okay. [DRAFT TRANSCRIPT ONLY]

J. Yap: Speaking of studies, first of all, I want to acknowledge, in an earlier line of questioning, that Lindsay, you very skilfully and respectfully sidestepped the question that was asked of you, whether you support a ban of cosmetic pesticides, which I appreciate. [DRAFT TRANSCRIPT ONLY]

But I do want to ask you.... The fact is that some provinces have introduced bans of some sort, targeted at cosmetic — so-called cosmetic — pesticides. I'm wondering if you're aware of studies that may have been done since those bans were introduced provincially in different provinces. So the question is: what studies might be out there since the introduction of these provincial bans that have looked at the impacts of these bans — i.e., on environment and/or human health? What studies have been done since these bans have been introduced?

[DRAFT TRANSCRIPT ONLY]

L. Hanson: I'm not aware of any human health studies, and I don't know if my colleagues have seen any, that would come from provinces where they have enabled some legislation with respect to urban-use products. I have seen a reference to.... I believe it's in Ontario that the Ministry of Environment has some studies regarding looking at detections of commonly used herbicides, I believe, in downstream water bodies. I don't have the details of that study, but certainly, I believe it's available. [DRAFT TRANSCRIPT ONLY]

J. Yap: So that would be the environmental impact, specifically waterways — that Ontario study? [DRAFT TRANSCRIPT ONLY]

L. Hanson: Yes. [DRAFT TRANSCRIPT ONLY]

J. Yap: Okay. [DRAFT TRANSCRIPT ONLY]

P. Delorme: It's not impacts. It looks at concentrations pre- and post-ban. They had some study data from back in the early turn of the century — 2000 and.... I forget exactly the years. They've then gone back and looked post-ban in the last two years of their.... [DRAFT TRANSCRIPT ONLY]

[1215]

There is a report on the Ontario website that basically looks at the changes in the concentrations in water pre- and post-ban. [DRAFT TRANSCRIPT ONLY]

J. Yap: So merely the presence, the concentration levels of those chemicals.... Okay. [DRAFT TRANSCRIPT ONLY]

P. Delorme: Yes, exactly. [DRAFT TRANSCRIPT ONLY]

M. Coell: First off, I'd like to say thank you to our guests today. I've very much appreciated, while I'm getting up to speed on some of the issues that the committee has been dealing with, your comments today. You obviously have,

between the four of you, a few lifetimes of experience. [DRAFT TRANSCRIPT ONLY]

A number of provinces have made changes in the use of pesticides. I was quite pleased with the creation of this committee that would allow public, scientific and stakeholder advice to come to the Legislature. I wonder whether the provinces that had made changes in the past had sought your advice, either individually or of Health Canada as a whole, in their decision-making process.

[DRAFT TRANSCRIPT ONLY]

L. Hanson: In the decision-making process, I guess the closest I would come to that would be.... We do have a federal-provincial-territorial working group on pest management and pesticides that includes the members here from the agency, as well as counterparts at the provincial regulatory level. That group meets, usually, by teleconference, and then they also have a yearly face-to-face meeting, to discuss regulatory activities with regard to pesticides across Canada. But in terms of our direct involvement with a province where they're taking action with respect to urban-use products, we recognize that that authority for the province to take that action exists under the constitution, and that's recognized by the PMRA. [DRAFT TRANSCRIPT ONLY]

M. Coell: I guess my question was: was there a formal process by the other provinces? When they were making those changes, did they use you as a resource or not? [DRAFT TRANSCRIPT ONLY]

L. Hanson: I would say, generally, no. To use us as a resource.... Certainly they have communication with colleagues here at the agency. With regard to registration of a product, they can access our public labels database, like anyone from the general public can. We certainly do have relationships with the provinces in terms of regulatory officials. We do a lot of work with respect to education, certification and training, with the provinces, in how we look at how these products are being used. But in terms of direct comment on provincial actions or legislation, no. [DRAFT TRANSCRIPT ONLY]

M. Coell: Okay. Thank you very much. [DRAFT TRANSCRIPT ONLY]

B. Bennett (Chair): We're going to just continue to go through the rotation. I'll ask the member if you have a question. If you don't, just pass and I'll go to the next member. [DRAFT TRANSCRIPT ONLY]

M. Sather: Going back to question 11 of the first set of questions that you responded to, with reference to industry-sponsored work in laboratories, it says that the laboratories are subject to independent audits to ensure their reliability. I wanted to ask you: how many of these audits have been done in the last year, and what body or individual did the audit? [DRAFT TRANSCRIPT ONLY]

L. Hanson: We're just discussing here. That is a separate body that conducts those audits, so I don't have any numbers in front of me. I could endeavour, certainly, to find out that information and supply that to the committee.

[DRAFT TRANSCRIPT ONLY]

M. Sather: Do you believe that there would have been any audits done in the past year? [DRAFT TRANSCRIPT ONLY]

L. Hanson: Certainly, yes. [DRAFT TRANSCRIPT ONLY]

[1220]

C. Moase: Our compliance group gets information at the international level, even, in terms of lab auditing and if there were issues that may have arisen. So we can look for that information for you. [DRAFT TRANSCRIPT ONLY]

M. Sather: It was said that it's an independent group, I believe, that does these audits. Could you explain more on who that's composed of? [DRAFT TRANSCRIPT ONLY]

L. Hanson: I'm sorry. I don't have that information, but certainly, we can find that answer for you. [DRAFT TRANSCRIPT ONLY]

M. Sather: Okay. [DRAFT TRANSCRIPT ONLY]

S. Fraser: I'm back again. Before I begin, John Yap had asked the question about if there are any before-and-after studies done on areas that had brought in some form of restriction. I'd like to cite one in New York City. [DRAFT TRANSCRIPT ONLY]

They banned the use of pesticides, and 2001 is when they began enforcing that. They looked specifically at birth rates. The study was actually in 2004, so it left some time for the pesticide use enforcement to get into place. They looked at birth weight and exposure to pesticides. [DRAFT TRANSCRIPT ONLY]

They found that babies born before the ban was enforced had higher levels of pesticides — they measured that through the umbilical cord, by the way — and they had lower birth weights. Babies born after the ban had substantially lower concentrations of the pesticides in their umbilical cords and had no depression of fetal growth. So there have been, certainly, before-and-after studies that we've been presented with as a committee. That's just one, just for your information. [DRAFT TRANSCRIPT ONLY]

Going back a step to the issue around how Health Canada deals with studies that are done by the actual industry, which is the requirement. Even if it's a third-party lab, it's commissioned, presumably, and paid for by the company involved. It's not paid for by the taxpayer. I'm going to assume that for now unless somebody is going to say something otherwise. [DRAFT TRANSCRIPT ONLY]

You cited that there are over 300 scientists that sort of review these things to help make sure that they're kept objective and that there's an independent body that actually looks at the labs involved, if they're third-party labs. [DRAFT TRANSCRIPT ONLY]

I'd like to cite again — and I mentioned this earlier. I go back to.... The issue actually took place in Europe about ten years ago. The claims made by the company producing Roundup, specific claims, included that the product was biodegradable and that it left the soil "clean after use". [DRAFT TRANSCRIPT ONLY]

They were fined for that — the European Union, I believe, and Monsanto, their French distributor, was fined thousands and thousands of euros. Actually, Roundup's main ingredient is classed as dangerous for the environment and toxic for aquatic animals. Again, I cited that already in the University of Pittsburgh, but this was by the European Union. So the defendants were indeed fined. [DRAFT TRANSCRIPT ONLY]

They'd made, obviously, claims about their product — the claims were not accurate, certainly — and had no scientific basis to make those claims. That's what the court found. [DRAFT TRANSCRIPT ONLY]

Did Health Canada scientists...? I'm assuming they did not uncover the falseness of these claims, because it was found through a court in Europe. But same product. So I guess the question is: how did Health Canada's 300-plus scientists fail to uncover quite a blatant misrepresentation of a product? [DRAFT TRANSCRIPT ONLY]

L. Hanson: I'm certainly not familiar with the specifics of the technical product or the study which you're referring to. I don't know if anyone on our panel is. If you could forward that information to us, we could address it specifically in

our response to you. I don't have any direct information on that. [DRAFT TRANSCRIPT ONLY]

[1225]

Typically, that's the sort of information, though, that would be addressed in our re-evaluation process. If there was something specific like that that required immediate action for a product like that from an OECD country, that is certainly the type of information that we look to avail ourselves of to use in our evaluation.

[DRAFT TRANSCRIPT ONLY]

P. Delorme: I think one of the things that's not clear in this case is whether or not those claims were made on products in Canada — right? Our agency does have policies with respect to making claims about pesticides that are publicly available. So that's a little bit separate from the risk assessment per se. That falls into advertising. [DRAFT TRANSCRIPT ONLY]

B. Bennett (Chair): We'll get Scott to formulate a question on this with enough contextual information to allow you to know where this occurred and so forth, and we'll send that to you right away. [DRAFT TRANSCRIPT ONLY]

L. Hanson: That's great. [DRAFT TRANSCRIPT ONLY]

R. Fleming (Deputy Chair): I wanted to ask about Health Canada being able to expand its scope of research to include situations where there are cumulative pesticides and chemicals at risk to children, to expectant mothers and to human health. [DRAFT TRANSCRIPT ONLY]

Right now your research, as I've heard it described, and your role as an agency are limited to looking at products tested in a laboratory situation, retested in some cases, in the manner that you've described. But in the real world, there can be a number of means through which exposure can occur for children. [DRAFT TRANSCRIPT ONLY]

If you look at the way that pesticides may get into a neighbour's yard or to which some exposure may occur, there are situations that are not covered off in the "use as directed" label warnings that you provide, and they often involve more than one type of chemical ingredient, pesticide ingredient. [DRAFT TRANSCRIPT ONLY]

I'm wondering if your agency has contemplated these additional risks, where there's the presence of more than one pesticide in a combined exposure, and whether you have tried to do any research or look at doing a risk evaluation of those types of situations. [DRAFT TRANSCRIPT ONLY]

C. Moase: I'll speak to the biomonitoring study that I touched on earlier in the discussion, where there is follow-up with.... That's the Canadian health measures survey that was released in August of 2010, where they were looking at levels, within a cross-section of the Canadian population, of specific chemicals, including pesticides or pesticide metabolites, so including 2,4-D, organophosphate metabolites and pyrethroid metabolites. [DRAFT TRANSCRIPT ONLY]

The outcome of those results showed that in the case of 2,4-D, the levels there were essentially negligible, and with the organophosphates and pyrethroids, the levels were on par or lower than levels reported in other international jurisdictions. But again, those are baseline levels. It's the first time that that type of monitoring data has been done for Canadians specifically. [DRAFT TRANSCRIPT ONLY]

This is being done by another branch within Health Canada, and they are currently into their third cycle of collecting data so that we can more fully interpret the trend in those levels. So that will help to speak to one of your issues raised about real world exposures, if you will. [DRAFT TRANSCRIPT ONLY]

[1230]

You were getting at the topic of mixtures. Mixtures is not specifically a pesticide-specific problem, if you will, because as soon as a pesticide is put into

the environment, it becomes a separate mixture. It becomes a mixture, whether it's with soil, on leaves, in water and so on. So it becomes a more complex question.

[DRAFT TRANSCRIPT ONLY]

At the registration level, when there is a mixture of pesticides or the formulated product that is to be registered, there is a specific subset of data that is on that product, and that informs some of the label statements that are on that particular product. [DRAFT TRANSCRIPT ONLY]

From a broader level, in terms of mixtures, there is still methodology being developed in terms of how to look at the broader story, the broader understanding of how mixtures interact within the environment, whether it's within your bathtub and the shampoo that goes down the drain versus those other household products versus agricultural products and other chemicals within the environment. [DRAFT TRANSCRIPT ONLY]

Your question is certainly raised by a number of groups. It's an area that's currently being investigated because of its complexity in determining which mixture you test and how you best address that. [DRAFT TRANSCRIPT ONLY]

B. Bennett (Chair): Rob, do want to just clarify something there? [DRAFT TRANSCRIPT ONLY]

R. Fleming (Deputy Chair): Yeah, I would. It's a related question, Chair, if you'll indulge me. [DRAFT TRANSCRIPT ONLY]

One of the things we heard that the provincial government does here in British Columbia to protect the health of users applying pesticides in a cosmetic situation, a home setting, is a requirement by law that the vendor, the point of sale, the retail outlet, educate the consumer before they use it, before they purchase the product, on how it should be safely used. That was a reform and a requirement, a regulation that was brought in to hopefully increase the rate of compliance and safe use, according to the label instructions that your agency oversees and provides. [DRAFT TRANSCRIPT ONLY]

We heard from the province that they literally have no idea how that is followed, that regulation. We've heard from others who have testified here and even members of the committee here in a candid fashion that when they're at the local big-box store, they rarely, if ever, see employees qualified to do that. The suggestion is that there could be a very high level of non-compliance to that particular regulation. [DRAFT TRANSCRIPT ONLY]

So I wanted to ask you about your responsibility as a federal agency to the label warnings that you provide consumers on compliance levels. I think that most people would concede that these label warnings are very complicated, in some cases ten or 12 pages long, and would present a considerable difficulty to somebody whose first language is not English — and in combination with eyesight. Perhaps reading glasses of a certain prescription strength.... [DRAFT TRANSCRIPT ONLY]

It has been suggested, I think, by many people, when you look at some of the label instructions that your agency provides, that the consumer have knowledge, for example, of the soil condition of their lawn, where the water table is in relation to their property, also looking at climatic conditions and exposure to sun, therefore deducing breakdown levels. There are a number of fairly stringent requirements, and that's not even including personal protective equipment, the PPE that somebody there described earlier. [DRAFT TRANSCRIPT ONLY]

There are a lot of requirements that go into the assumption that your agency uses. The use is directed to give the assurance of safety that you give. So it seems to me that there would be quite an onus upon your agency or some part of the federal government to determine how frequently Canadians comply with all of the

qualifications that you provide on that written warning label. [DRAFT TRANSCRIPT ONLY]

[1235]

Do you have any idea — and have you done an audit, a focus group, a survey to determine — what compliance and level of knowledge that Canadians have about the products that they use? [DRAFT TRANSCRIPT ONLY]

L. Hanson: Actually, we have done some specific focus group testing, I believe, back in 2007. I would have to check that date. It was with regards to domestic product labels. We have since spent quite a bit of time on looking at plain language for, particularly, domestic products, recognizing that we aren't looking at having the complex use directions. [DRAFT TRANSCRIPT ONLY]

We want to have ease of understanding of any safety precautions — again reiterating that typically for domestic products we aren't looking at having additional personal protective equipment because of the type of product that we're talking about. [DRAFT TRANSCRIPT ONLY]

Lots of work that's been done around domestic product labels, again, has to do with plain language and the ease of use because, certainly, as we reiterate through most of our communication to you that a label is a legal document that we want people to follow, we have to have it in a format that the people can follow easily. So yes, we have done some focus group testing with regards to those. [DRAFT TRANSCRIPT ONLY]

You did allude to a specific product that was very specific in terms of the type of knowledge that might be required to use that product. Certainly, that particular of product is the exception. The majority of the domestic products are designed with a label that has very straightforward use directions, whether it be a ready-to-use product or, if that product does require mixing, that the concentration.... Again, it also has to convey any of the safety precautions that go along with that product. [DRAFT TRANSCRIPT ONLY]

B. Bennett (Chair): Thank you. I have a question, but before I ask my question, I think I'd like to just say that I want to support the line of questioning that the Deputy Chair just was involved in. I think our committee will be looking for ways that we can improve the system overall. When I say "the system," I mean the combination of the federal jurisdiction and provincial jurisdiction. [DRAFT TRANSCRIPT ONLY]

You'll notice that we asked you a really loaded question. Our question 22 was.... Essentially, we're just asking you to use your experience in all of this to perhaps make some suggestions to us about how we might be able to improve the process. Again, by "the process," I'm actually referring both to what you do and what we do provincially. [DRAFT TRANSCRIPT ONLY]

I'm not sure whether.... I know what it's like, sort of, to be a public servant. I've worked with public servants for about 11 years, and I know that it's difficult sometimes to do what we're asking you. I can give you my private e-mail if that would help. But seriously, I really do hope that you can dig into your experience with all of these difficult questions and maybe give us some suggestions on what we might be able to do here provincially with our own process that could strengthen the protection that's there. I'll leave that with you. [DRAFT TRANSCRIPT ONLY]

I want to focus on something that is, I think, critical to our committee and to the public, and that is the suggested link between pesticides and cancer. Most of the groups that have submitted to us and who testified in person — not all, but most — are asking for a ban of pesticides used in what our terms of reference refer to as a cosmetic context. So I think it's fair to assume that that means the householder, the person who buys the pesticides at the local garden store or the

big-box store or, in some cases, hires a licensed applicator to put the Killex on or to use the Roundup. [DRAFT TRANSCRIPT ONLY]

In one of your answers — it was actually question 5 that you answered — that I have in front of me, you state that Canada, the European Union, the U.S. Environmental Protection Agency, New Zealand and the World Health Organization do not classify 2,4-D as a human carcinogen. [DRAFT TRANSCRIPT ONLY] [1240]

I have heard it said that 2,4-D is perhaps one of the most studied chemicals ever, and it certainly sounds like would be the case. [DRAFT TRANSCRIPT ONLY]

What I'm curious about is the statement where you say that the International Agency for Research on Cancer is the only international regulatory organization that has not revisited the issue of 2,4-D in its entirety. I accept that as a statement of fact, but I'm wondering how you square that with the quotation below from the IARC. [DRAFT TRANSCRIPT ONLY]

It's a 2007 report, so maybe it has changed, but they're essentially saying that there are very few currently available pesticides that are established experimental carcinogens and that none is an established human carcinogen. "Studies in humans have failed to provide convincing evidence of an increased risk, even in heavily exposed groups." That's a quotation from a 2007 report published by the IARC. [DRAFT TRANSCRIPT ONLY]

One, are you aware or do you know whether their position has changed? Two, what is the relationship between that statement and the fact that they have not revisited the issue of 2,4-D in its entirety? [DRAFT TRANSCRIPT ONLY]

C. Moase: In terms of the IARC position, we're not aware that it has changed. It is what it is in terms of where they placed the classification in their tables that you've referred to. It would really be speculation at this point as to why they haven't revisited it. [DRAFT TRANSCRIPT ONLY]

I can state that the IARC classification applies to the class of chlorophenoxy herbicides. That includes one particular herbicide, 2,4,5-T, which was highly contaminated with dioxins and which has been removed from the market since early '80s, late '70s, somewhere in that era. [DRAFT TRANSCRIPT ONLY]

B. Bennett (Chair): That's the one that you hear people talking about, Agent Orange and how that's related to pesticides that are currently used? [DRAFT TRANSCRIPT ONLY]

C. Moase: It's one of the aspects. But 2,4,5-T is a more highly contaminated chlorophenoxy herbicide. Again, because IARC puts the entire class of chlorophenoxy herbicides into that group of — what is it? — possible human carcinogens.... That's one potential explanation. I can't really speculate beyond that for the organization. [DRAFT TRANSCRIPT ONLY]

B. Bennett (Chair): It's confusing to a layperson like myself to have a statement from the International Agency for Research on Cancer to say that none of these pesticides is an established human carcinogen but then have other groups coming forward to the committee that are saying that in fact they are carcinogens and are associated with various kinds of cancer. I know it's not your job to sort that out for us, but do you have any thoughts on that? [DRAFT TRANSCRIPT ONLY]

C. Moase: Well I think the key words there in the quotation is "currently available pesticides." A number of the contaminants, if you will, on the IARC list are formerly registered pesticides. Again, DDT is on one of those lists, and 2,4,5-T is under the chlorophenoxyes. Again, those are not currently registered pesticides. It's speculation on my part, but to me, I would cue in on the "currently available" aspect. [DRAFT TRANSCRIPT ONLY]

B. Bennett (Chair): Okay. What that suggests to me is that some of the epidemiological studies that have noted associations are studying chemicals that aren't even in use, currently, in pesticides. [DRAFT TRANSCRIPT ONLY]

C. Moase: That's correct. [DRAFT TRANSCRIPT ONLY]

B. Bennett (Chair): Okay, we'll move on. [DRAFT TRANSCRIPT ONLY]
John, do you have any questions? [DRAFT TRANSCRIPT ONLY]

J. Slater: No, I'm good now. [DRAFT TRANSCRIPT ONLY]

B. Bennett (Chair): Okay. [DRAFT TRANSCRIPT ONLY] [1245]

J. Slater: One thing, Chair. We're going to get the answers to these 22 questions in writing? [DRAFT TRANSCRIPT ONLY]

B. Bennett (Chair): Yes we are, and a few more. [DRAFT TRANSCRIPT ONLY]

M. Sather: I'd just like to ask the committee members if you would approve of or allow your toddler grandchild or child to play on their hands and knees on a lawn that had been sprayed with Killex. [DRAFT TRANSCRIPT ONLY]

L. Hanson: I guess we tend to not go into the speculative types of scenarios that you've described. [DRAFT TRANSCRIPT ONLY]

I think for products you're talking about today, for urban-use products, those products certainly carry a label where the product can be used safely. As we've talked about, we have carried out an assessment which looks at the specific exposure scenario which you describe. Based on the way that that product is designed to be used and the fact that we have looked at that exposure scenario, the scenario which you've described, I would be comfortable with it. [DRAFT TRANSCRIPT ONLY]

M. Sather: And other members of the committee? [DRAFT TRANSCRIPT ONLY]

C. Moase: Just to build on Lindsay's comment, the exposure scenario also included a toddler picking something up and putting it in their mouth. So that exposure scenario was covered off as well. That's considered under "incidental." It's not something that you would certainly approve. It's considering the toddler hand-to-mouth exposure scenario, and that was shown to be acceptable. Does that help put it into context? [DRAFT TRANSCRIPT ONLY]

B. Bennett (Chair): I was going to ask you if you have children, but Michael beat me to the punch. I can only speak for myself, but I appreciate the fact and trust entirely that you take your jobs very, very seriously and that the health of Canadians is your foremost concern. [DRAFT TRANSCRIPT ONLY]

Scott, do you have any more questions? [DRAFT TRANSCRIPT ONLY]

S. Fraser: Thanks to the group assembled in Ottawa for having so much patience with us. I'm going to assume that the incidence of children on recently sprayed grass putting stuff in their mouths wasn't a controlled study. Hopefully.... [DRAFT TRANSCRIPT ONLY]

C. Moase: Can I just clarify that that's based on empirical data? It's on exposure-estimated data. It's not based on an actual toddler doing that activity but on the estimated exposure based on that scenario. So no, there were no toddlers involved in that study. Please don't misunderstand that. [DRAFT TRANSCRIPT ONLY]

S. Fraser: Fair enough. That's good clarification. [DRAFT TRANSCRIPT ONLY]

There have been well over a hundred studies cited to us, as committee members, that have linked pesticide exposure to both adult and childhood diseases, cancerous and non-cancerous. There's quite a list of them that we have from various groups — doctors, Cancer Society and others — independent groups.

[DRAFT TRANSCRIPT ONLY]

Again, going back to our role in this committee, we're looking at just cosmetic use, as the Chair clearly pointed out just a little while ago. From my point of view, I see the cosmetic use of pesticides as an unnecessary use of pesticides.

[DRAFT TRANSCRIPT ONLY]

We're not talking about the industry here. We're not talking about food production. We're not talking about.... This is about the use of these substances in areas, generally, with the highest human concentration — in cities, in towns. And it's largely, because of its cosmetic definition, an aesthetic thing. The greener grass, the perfect rose were mentioned. So these are not necessary.

[DRAFT TRANSCRIPT ONLY]

[1250]

I suppose when we're trying to do the precautionary principle, for me at least, we're dealing with a use of deleterious substances. Nobody wants to drink this stuff. It has toxic effects on humans, on the environment, on amphibians and other creatures too. And it's unnecessary in the use we're talking about. We're not talking about specifics of invasives that are dangerous to human health. We're not talking about industry. We're not talking about agriculture. We're talking about cosmetic use.

[DRAFT TRANSCRIPT ONLY]

For me, the compelling arguments from the Cancer Society, from doctors, from people that have been studying endocrine disruptions and finding links.... The precautionary principle for me would say: "We don't need to use this stuff in this application." And that would be the appropriate use of the precautionary principle. If it's not necessary and there are risks potentially there, then we should not. That's where I'm leaning. I haven't got anything from Health Canada that would dissuade me from that position at all.

[DRAFT TRANSCRIPT ONLY]

Again, the question came back: "What do you think about a ban on pesticides provincially?" We've already seen that throughout the country. So if B.C. were to embark on such a thing for the unnecessary use of poisons in our environment that we all live in, would you not agree that that would be a good application of the precautionary principle?

[DRAFT TRANSCRIPT ONLY]

L. Hanson: Again, it comes back to the way that we assess the products here at the agency. I talked about how the registrant comes forward with a proposed product with a proposed use label. A determination of whether an individual thinks that the use of that product is necessary or not can be an individual's choice. Our job is to make sure that if they do use that product, it can be used safely. So we have to consider all of those end points, which you've brought up today, in terms of looking at: are there any possible impacts on showing end points such as cancer, showing end points such as an effect on endocrine disruption?

[DRAFT TRANSCRIPT ONLY]

It doesn't matter how that product is being used. We have to be sure from a risk assessment point of view that that product can be used in the way that it's described on the label and that it can be used safely. We're not looking at, specifically: is that product being used in the urban environment for particular weed control? Some individuals would consider weed control a necessity to them, but that typically goes by an individual's personal values.

[DRAFT TRANSCRIPT ONLY]

We're looking at a label, basically, from the way that it's described and that it's supposed to be used. When it comes to us it has to have a proposed use. Certainly we aren't registering products that don't have a specific use pattern. They come in. It's a registration for weed control, it's a registration for insect control,

and it has to be able to.... We haven't talked a lot about efficacy today, but certainly that product also has to have the ability to do what it says on the label because we don't want to, from our standpoint, introduce additional chemicals to the environment when it's not actually doing what it says it's supposed to do.

[DRAFT TRANSCRIPT ONLY]

Again, it comes down to, maybe, an individual's choice, depending, I guess, on the jurisdiction they're living in. We have to be sure, at the federal level, that if that product is available to be used that when it's used according to the label it can be used safely. [DRAFT TRANSCRIPT ONLY]

J. Flint: I mean, if I could add to that, the legislation is based in federal criminal law powers. It's a fairly strong piece of legislation, as far as our ability to enforce, and there is the blanket prohibition on the use of a pesticide unless it is registered by Health Canada, unless the minister grants registration to it. Prior to doing that, the minister has to be satisfied that the health and environmental risks are acceptable, that the product has value and that it does what it is supposed to do with respect to the control of the pests. [DRAFT TRANSCRIPT ONLY]

[1255]

If a registrant comes to us and says, "I have a product. I would like to have it registered," the information they are required by me to show is that their product has acceptable risks for human health and the environment, that it meets the requirement of value and that it's going to do what it's supposed to do to control this pest. [DRAFT TRANSCRIPT ONLY]

We cannot use federal criminal law powers to prevent that product from entering the market. The minister has an obligation to register a product if it meets those criteria, as in the risks are acceptable, and it shall not result in harm to human health or the environment or future generations when the product is used according to the proposed directions. [DRAFT TRANSCRIPT ONLY]

B. Bennett (Chair): Do you have a follow-up, Scott? [DRAFT TRANSCRIPT ONLY]

S. Fraser: Just a follow-up — it's not a separate question — just on that. Where I'm certainly still not clear, and I'm still diverging from you in Ottawa, is acceptable risk. There is evidence of risk. You can challenge that, I suppose, because you can't ethically test people — kids, in vitro. You can't test people; you can only come close — right? So you have to look at trends, and I've certainly been looking at that with the evidence I've been given. [DRAFT TRANSCRIPT ONLY]

But the acceptable risk, for me, doesn't apply if the use is unnecessary, if it's cosmetic use — not for invasives, not for.... You have to balance that equation. If the use is unnecessary use.... I mean, I hear the argument: "Well, for somebody with a perfect lawn, it might be necessary." It is not. There has to be a reasoned approach to that. [DRAFT TRANSCRIPT ONLY]

It's not necessary, in almost all cases, to use cosmetic pesticides. We've seen a number of jurisdictions that have imposed that, and there have not been any big problems with that that I've been made aware of. We have seen evidence that it has actually had health benefits, and I cited just one of those studies done in New York City. I'm just going to leave it with that. [DRAFT TRANSCRIPT ONLY]

Unnecessary use is the thing. It's not necessary, so acceptable risk.... That equation is unbalanced because the one side.... It's about taking risks for unnecessary reasons. [DRAFT TRANSCRIPT ONLY]

B. Bennett (Chair): Anyone in Ottawa have a burning desire to speak to that? [DRAFT TRANSCRIPT ONLY]

J. Flint: If I could put a final comment on that. The risk assessment that's

done here is not a balance of risk and benefit. We don't look at the benefit of using a product and say: "Does the benefit outweigh the risk?" It's strictly: are the risks acceptable, irrelevant of the benefit? Are the risks of this product, used as directed...? Would the risks be acceptable? [DRAFT TRANSCRIPT ONLY]

It's not trying to balance off social benefits against the health or environmental risks. It's supposed to just simply be the risks of the product. Are the risks of the product, health and environment, acceptable? Is the value — as in, does it do what it says — acceptable, irrespective of if there is benefit to using the product? It's not in our mandate to assess benefit or to make any sort of determination, benefit versus risk. It's strictly: is the risk acceptable? [DRAFT TRANSCRIPT ONLY]

R. Fleming (Deputy Chair): I want to ask the representatives here about formulants, the non-pesticidal components of the products that you certify as safe for use, which have various levels of toxicity associated with them. These help the pesticide. They're kind of the delivery agent, if you will, for the defoliant to get to the plant or the weed and help with its absorption and solubility. [DRAFT TRANSCRIPT ONLY]

It's been suggested that.... Well, I guess it's a two-part question. The first I would ask is whether the PRMA evaluates the formulant, especially in terms of how it breaks down in the environment. [DRAFT TRANSCRIPT ONLY]

[1300]

Also, there has been some criticism, I think, of the PRMA that because industry considers the formulant component of their pesticides to be proprietary information that that has restricted the public disclosure and transparency of what components there are of the formulant. [DRAFT TRANSCRIPT ONLY]

I'm just wondering if you could comment on those two aspects of the question. Are you evaluating all the aspects of the formulant, including its ability to break down in the environment? And also, the criticism — if you could respond to it — about the lack of disclosure to the public about what the chemical ingredients of the formulants are that Canadians are able to gain knowledge of and be aware of. [DRAFT TRANSCRIPT ONLY]

L. Hanson: Certainly it is necessary to clarify that, yes, the agency is completely aware of the components of a pest control product, that being the active ingredient and the formulants which you have described. It's a requirement of registration that we have a specification form which shows, in its entirety, the components of that pesticide. [DRAFT TRANSCRIPT ONLY]

Our toxicology evaluators do look at the formulants, then, which are listed on that specification form for an end-use product. We actually have a set of toxicity studies that are required to be conducted with the formulated product itself. [DRAFT TRANSCRIPT ONLY]

One of the other parts you talked about.... Yes, the information with respect to the formulants is considered confidential business information by the agency, so typically that information is not available on the pesticide label. If you saw a pesticide label in front of you which showed the active ingredient, the list of formulants that are in the product are considered confidential business information by the agency. But there is certainly a misunderstanding, then, that that means that we are not aware of what those ingredients are. That is certainly not the case. Again, it is a requirement under our data requirements that we know exactly what is in those products. [DRAFT TRANSCRIPT ONLY]

In terms of the breakdown of those formulants in the environment, perhaps I'll let Peter address that. [DRAFT TRANSCRIPT ONLY]

P. Delorme: I think one of the things that's important to understand is that the formulants in the commercial end-use products are very often chemicals that

are in commerce for other products as well, or on their own. So they're used by other industries, and they would be covered under CEPA, the Canadian Environmental Protection Act. [DRAFT TRANSCRIPT ONLY]

As Lindsay indicated, we do get data on any of the product in terms of toxicity, so we can take them into account. There are a number of cases where it's evident that it's the formulant that is really causing the concern, and appropriate mitigation measures can then be put on labels to deal with those cases. [DRAFT TRANSCRIPT ONLY]

I think that there are a number of things there where it's... There are mechanisms whereby these chemicals are looked at by the government, not necessarily by PMRA. Certainly we have identified a number of cases where it is the formulant which is potentially causing the effects, and we take it into account in the risk assessment, both for the environment and from a human health perspective. [DRAFT TRANSCRIPT ONLY]

B. Bennett (Chair): Rob, do you want to clarify anything? [DRAFT TRANSCRIPT ONLY]

R. Fleming (Deputy Chair): No. I might ask one other question that's similar to the discussion we were having earlier about the International Agency for Research on Cancer and the other regulatory bodies here and in Europe and in North America. [DRAFT TRANSCRIPT ONLY]

Part of your written response that you supplied to the committee — and thank you very much for it — to question 5.... I go back to quoting in the first paragraph about some situations where there is evidence of cancer in laboratory animals but not evidence of a risk of cancer in humans. We talked about this a little bit before. [DRAFT TRANSCRIPT ONLY]

When you have this situation, you then.... The risk assessment "considers how the cancer develops in laboratory animals in all potential exposures, e.g. food, water, workplace, that may occur over a lifetime." [DRAFT TRANSCRIPT ONLY]

[1305]

I'm wondering if you could explain the extrapolation you do between the controlled laboratory results and then what apparently are external variables that may explain away the linkage between something that is carcinogenic to animals but has been concluded not to be to humans. That's one question. [DRAFT TRANSCRIPT ONLY]

Related to that, though, is about, I guess.... You know, we're going back to this discussion we've had all day here about the precautionary principle. I think the International Agency for Research on Cancer, as you've presented the history of their warnings and classifications about pesticide classes.... The reason they haven't moved off the position is that they have, admittedly, not uncovered and established human carcinogens in some of the products that Health Canada deems to be safe to Canadians when they use them as directed. [DRAFT TRANSCRIPT ONLY]

That is really the highest burden of proof that can be asked, and if we're talking about the precautionary principle, again, we're going back to associations, risks and some evidence — generally speaking, a volume of quantitative evidence. [DRAFT TRANSCRIPT ONLY]

Is that an accurate characterization of the position? You've sort of alluded to it here in your response, although not entirely giving their version of why they still qualify the warnings that they do on pesticide ingredients. [DRAFT TRANSCRIPT ONLY]

C. Moase: I'll address the first part of your question, which comes back to the hazard versus the risk aspects of it. The IARC and the NTP tables — their hazard identification tables.... They've identified a potential hazard for these various chemicals in these lists. Just because a chemical has that hazard potential

does not mean that in each and every case it will cause cancer in any individual. What the risk assessment does is then put that hazard and exposure context piece together under the use pattern that the chemical is in in order to determine what the risk picture looks like. [DRAFT TRANSCRIPT ONLY]

I'm going to read you a paragraph from the American Cancer Society because they put it better, probably, than I can. This sort of precedes the lists of the IARC and the NTP chemicals that we were asked to look at. [DRAFT TRANSCRIPT ONLY]

Again, it kind of repeats what I've just said, but it says: [DRAFT TRANSCRIPT ONLY]

"Carcinogens do not cause cancer in every case, all of the time. Substances labelled as carcinogens may have different levels of cancer-causing potential. Some may cause cancer only after prolonged, high levels of exposure. And for any particular person, the risk of developing cancer depends on many factors, including how they are exposed to the carcinogen, the length and intensity of the exposure and the person's genetic makeup."

So the length and intensity of exposure — that's the exposure assessment. That's the characterization of exposure for a particular use pattern of a pesticide. How they are exposed, the duration of exposure, how many times that product is applied in a given year — all of those are inputs into the empirical formula that we use to determine whether there is a cancer risk or not. [DRAFT TRANSCRIPT ONLY]

It may have cancer potential in an animal model. We then take that data from the animal toxicity studies.... Again, there is a series of studies, a series of doses over various dose levels. We have information indicating whether or not there are tumours at various dose levels. We input all of that data into a formula to determine what the level of risk would be for that particular outcome. [DRAFT TRANSCRIPT ONLY]

R. Fleming (Deputy Chair): Thank you for that answer. So in other words, some of the products that Health Canada registers have a cancer hazard but have not been proven to have a cancer risk. [DRAFT TRANSCRIPT ONLY]

C. Moase: The risks are acceptable. Correct. [DRAFT TRANSCRIPT ONLY]

R. Fleming (Deputy Chair): The risks are acceptable. But the hazard is there. [DRAFT TRANSCRIPT ONLY] [1310]

C. Moase: Yes. They fall within our acceptable risk level for cancer, which is a one-in-a-million risk level — so in other words, its negligible contribution to background levels. That's our bar — the one-in-a-million risk level. It's an empirical calculation of all the data from the animal toxicity studies. [DRAFT TRANSCRIPT ONLY]

B. Bennett (Chair): Okay. Thank you very much. I've got one, hopefully, quick one here. [DRAFT TRANSCRIPT ONLY]

People that have presented to us — and I think probably all of us laypeople here on the committee — assume that synthetic chemicals always bring a higher risk than so-called natural chemicals. I notice even our own provincial integrated pest management system requires the applicator to consider alternative ways to approach a pest, and I think we all support that. But the provinces that have instituted bans have also promoted the idea that we should not be using synthetic chemicals and that we should be going more to the so-called natural chemicals. [DRAFT TRANSCRIPT ONLY]

I would appreciate some advice for the committee about whether that kind

of black-and-white distinction is really safe for us to adopt or whether we should be aware of something in regards to the so-called natural chemicals as we develop our recommendations. [DRAFT TRANSCRIPT ONLY]

L. Hanson: Certainly, there are many, many examples of where naturally occurring chemicals are as toxic or more toxic than many synthetic chemicals. So it's really impossible to make that distinction between naturally occurring and synthetic. From a toxicologist's point of view, it's necessary to elucidate: what is the tox profile of that chemical? Typically, the mammalian species does not differentiate between chemicals, whether they come from a synthetic source or a naturally occurring source. [DRAFT TRANSCRIPT ONLY]

That said, there are other types of products that have become available, based on, I guess, more natural sources. We do have a program here at the agency to look at those products. We refer to them as non-conventional pesticides. However, the very reason that we have a system in place to look at them is to ensure or to acknowledge, as well, that naturally occurring chemicals themselves can carry the same impacts or greater impacts as a synthetic chemical. From our standpoint, we look at all of these chemicals with the same lens. [DRAFT TRANSCRIPT ONLY]

B. Bennett (Chair): I guess the bottom line for us is that in terms of our recommendations any substance that we would recommend the public use should be approved or registered by Health Canada. [DRAFT TRANSCRIPT ONLY]

L. Hanson: That's correct. [DRAFT TRANSCRIPT ONLY]

B. Bennett (Chair): Okay. I think we're done. All of the committee members really want to thank the four of you for the time that you spent with us this afternoon. To me, personally, it's astonishing that other provinces haven't availed themselves of the opportunity to interview officials from Health Canada, like yourselves, before establishing their policies. We're all very grateful for the opportunity that we've had to do that. You've helped us enormously, and again, we appreciate it. [DRAFT TRANSCRIPT ONLY]

We are also well aware of the work that we have asked you to do in terms of following up with answers to our questions. We appreciate that you're not done with us yet, but we do thank you for your time today. [DRAFT TRANSCRIPT ONLY]

L. Hanson: You're welcome. [DRAFT TRANSCRIPT ONLY]

B. Bennett (Chair): I think we're finished with this portion of our meeting, and I'm going to entertain a motion to go in camera. Thanks again. [DRAFT TRANSCRIPT ONLY]

Can I get a motion to go in camera to discuss scheduling? [DRAFT TRANSCRIPT ONLY]

J. Yap: So moved. [DRAFT TRANSCRIPT ONLY]

Motion approved.

The committee continued in camera from 1:15 p.m. to 1:44 p.m.

[B. Bennett in the chair.]

B. Bennett (Chair): Motion to adjourn? [DRAFT TRANSCRIPT ONLY]

Motion approved.

The committee adjourned at 1:44 p.m.

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