

Transcript of Proceedings

Issued subject to correction upon revision.

THE HONOURABLE JUSTICE C HOLMES, Commissioner

MR JAMES O'SULLIVAN AC, Deputy Commissioner

MR PHILLIP CUMMINS, Deputy Commissioner

MR P CALLAGHAN SC, Counsel Assisting

MS E WILSON, Counsel Assisting

IN THE MATTER OF THE COMMISSIONS OF INQUIRY ACT 1950

COMMISSIONS OF INQUIRY ORDER (No. 1) 2011

QUEENSLAND FLOODS COMMISSION OF INQUIRY

BRISBANE

..DATE 16/05/2011

..DAY 22

THE COMMISSION RESUMED AT 10.01 A.M.

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COMMISSIONER: Yes, Mr Callaghan?

MR CALLAGHAN: It might be best if we took a fresh round of appearances, Madam Commissioner.

COMMISSIONER: Oh, I suppose so.

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MR CALLAGHAN: I'm Callaghan, initials P J of Senior Counsel, with my learned friend Ms Wilson. We appear as Counsel Assisting.

COMMISSIONER: Mr O'Donnell.

MR O'DONNELL: For Seqwater, O'Donnell QC, with my learned friend Mr Pomeranke, instructed by Allens Arthur Robinson.

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COMMISSIONER: Mr Ambrose?

MR AMBROSE: For SunWater, with Mr Liam Dollar, instructed by Holding Redlich.

COMMISSIONER: Thank you. Mr Dunning?

MR DUNNING: May it please the Commission, my name is Dunning, I appear with my learned friend Mr Porter for the Brisbane City Council.

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COMMISSIONER: Mr Murdoch?

MR MURDOCH: If the Commission pleases, instructed by Gallagher Legal for the Mid-Brisbane River Irrigators Incorporated.

COMMISSIONER: Thank you. Mr MacSporran?

MR MacSPORRAN: If it pleases the Commission, I appear for the State, with my learned friends Mr Rolls and Mr Brasch.

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COMMISSIONER: Ms McLeod?

MS McLEOD: If the Commission pleases, I appear with my learned friend, Ms O'Gorman, for the Commonwealth, instructed by the Attorney-General's Department.

COMMISSIONER: Thank you. Have we got anybody else? Oh, Mr Rangiah, sorry, I didn't see you.

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MR RANGIAH: For the Fernvale Residents, instructed by Morris Blackburn.

COMMISSIONER: Thanks, Mr Rangiah. Yes, Mr Callaghan?

MR CALLAGHAN: I call John Bradley.

JOHN NEVILLE BRADLEY, ON AFFIRMATION, EXAMINED:

MR CALLAGHAN: Could you tell the Commission your full name and occupation, please?-- John Neville Bradley. I'm the Director-General of the Department of Environment and Resource Management.

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Mr Bradley, you have prepared a 15 page statement dated 4 April 2011; is that correct?-- Correct.

And I see you have a folder there. Is that your copy of the statement?-- Yeah, it's a folder including one of the statements I've provided the Commission.

All right, I'll get one shown to you. The statement has a number of attachments, that's correct?-- I think I have a copy of all my statements, if you just refer me to which one-----

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I'll just show you the one I'm going to tender. That's a copy of the statement you prepared and attachments; is that right?-- Sure.

Yes, I tender those.

COMMISSIONER: Exhibit 390.

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ADMITTED AND MARKED "EXHIBIT 390"

MR CALLAGHAN: Mr Bradley, can I start with just some basic principles. First of all, can you tell us who actually owns Wivenhoe Dam?-- Wivenhoe Dam is owned by Seqwater, and that is its trading name. It's a statutory authority, which is then owned by the State of Queensland.

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Right. As a statutory authority, it's created by a statute and its functions and powers are confined by statute; is that correct?-- Yes.

So, does your Department exercise any control over a statutory authority like that?-- My Department intersects with a statutory authority like that through a number of different heads of power under legislation. So, we have a relationship with an authority like Seqwater under the Water Act in terms of water entitlements under the Water Safety - Water Supply, Safety and Reliability Act in relation to issues around dam safety, et cetera.

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That's right. Your functions intersect at various points where various statutes give you special powers, for example?--

In the context of an explicit head of power under the legislation, yes.

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Yes. But you don't actually direct any of the business of Seqwater; is that correct?-- I don't have an involvement in the day-to-day operations of Seqwater.

All right. As for who actually - or as for who decides what happens to the water in the dam, there's quite a complex set of arrangements involving policy and water security and so on. I won't quiz you on all of that. But as you've already alluded to, you have important statutory functions because you are the Chief Executive for the purposes of the Water Supply Act and the Water Act; is that correct?-- Correct.

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You, of course, though, work for the Minister? That's a "yes"?-- I report to the Minister, yes.

And you have large staff working for you?-- Correct.

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Although you were given a number of those powers as Chief Executive, you are empowered to delegate some of those responsibilities as well?-- That's correct.

And I want to first just investigate the concept of your - or the extent of your responsibility after a delegation has issued. For example, if I take you to paragraph 33 of your statement, where you refer to attachment JNB8, you refer to the fact that you delegated the preparation of the Moreton Resources Operation Plan to your Deputy Director-General?-- That's correct.

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Once you've delegated something like that, do you, as Director-General, have any responsibility for the manner in which the delegation is exercised?-- It's - the way I would characterise it is that once a power is delegated under legislation, then the powers that would otherwise be exercised by the Chief Executives can be exercised in full and without practical limitation by the officer to which they've been delegated, and that does not mean that the Chief Executive no longer has an ability to exercise the same function under the legislation, unless that's explicitly indicated. That's not the case. So, you may have underneath statutory delegations a number of recognised officers that are able to exercise the same function.

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All right. So, you can still exercise it - exercise the function that you've delegated?-- Correct.

But what I'm interested in is whether there's any overarching responsibility residing in you as to the manner in which the delegated power is being exercised if someone else is exercising it?-- I would say that it's my overarching responsibility in relation to the functioning of the agency as a whole to make sure that it meets its - achieves its objectives and it discharges its statutory functions appropriately. So, being in the position of delegating a statutory function to another officer in the Department, I

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would say that I still retain the responsibility as the Chief Executive of the agency to make sure that such delegations are administered effectively.

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COMMISSIONER: Mr Callaghan, just before you go on, I think Mr Bradley was looking in vain for water, so would you just get him a glass?-- Thank you.

Thanks, Mr Dollar.

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MR CALLAGHAN: Have you got - someone has provided that. Thank you?-- I've got it.

Was the effect of that answer then that you still retain some responsibility to ensure that the delegation was being administered effectively?-- Yes.

All right. And to be administered effectively, presumably it would have to be administered in a way which was consistent with any relevant policies of the Government?-- Correct.

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One set of powers which you're authorised to delegate is the power to approve and require amendment of the flood mitigation manuals?-- That's correct.

Is that right? And as I think you'd agree, power must be exercised within the ambit of Departmental Policy?-- That's correct.

So, there must be some guidance - some sort of framework which directs the manner in which the power is to be exercised?-- The way I'd describe it is that where a Government policy exists or a Government policy exists, that should provide guidance to the way in which the delegation is administered. The guidance for the officer responsible comes from the primary legislation, subordinate legislation that exists or departmental policy. So, it may be that there is no specific departmental policy in relation to some aspects of statutory functions that need to be administered.

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Well, in relation to the power that we're talking about, though, I'd suggest there may well be such a policy and - just excuse me. There may well be some guidance, and it's contained in a document which is titled "DS 5.1 Flood Mitigation For a Dam". You're familiar with that document?-- I am.

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I'll show you a copy of the document?-- Thank you.

I think you've already acknowledged you're familiar with the document?-- Correct.

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You would have seen it after it was prepared and approved of it, no doubt?-- Yes, correct. I'm aware that it was finalised last year.

Yes, all right. I tender that document.

COMMISSIONER: Exhibit 391.

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ADMITTED AND MARKED "EXHIBIT 391"

MR CALLAGHAN: Just for the purposes of the record, part of this document has already been tendered as Exhibit 49, but that was an incomplete version and this is a complete version of the document. The first thing we notice about the document, Mr Bradley, is that it's a careful and, I'd suggest, prescriptive document. If you go to page 4, for example, Step 1 actually prescribes the need to stamp the covering letter; do you agree with that?-- Correct.

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Step 2 requires the action officer to conduct a detailed assessment of the Flood Mitigation Manual, having regard to the matters outlined in any relevant guidelines, and the things which follow. It goes on to refer to Attachment C - we'll refer to Attachment C in a moment - but apart from anything contained in this document, the DS 5.1, are there any other relevant guidelines for this purpose?-- To the best of my knowledge there aren't relevant guidelines produced by the department which advise an officer in the assessment of a flood mitigation manual.

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All right. So, this document is the code, if you like?-- It is currently.

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Yes. It says to go to Attachment C, so if we go to Attachment C and to the heading, "Information for Action Officers", we read that, "The aim of the Flood Mitigation Manual is to give the dam owner indemnity for flood release operations if they are conducted in accordance with the provisions of the approved manual", and so on. The first thing we notice is that the aim of a flood mitigation manual is not specified to be the mitigation of floods, it is to give the dam owner indemnity. Is that an accurate reflection of the policy of your Department?-- I wouldn't suggest that it is, and, indeed, I think that elsewhere in the document - and, if you bear with me, I think I may be able to locate it - it makes clear that that isn't the overarching rationale for a flood mitigation manual. Page 3 of 13, it quotes in the explanatory note to the bill and it says that, "A dam nominated in the regulation will be a dam which is constructed for the purposes of flood mitigation. A flood Mitigation Manual ensures that such dams make controlled releases of water for flood mitigation purposes in accordance with pre-agreed conditions.", and, indeed-----

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So, just turning up that page, can you tell me which paragraph on page 3?-- Sorry, page 3.

Yes, and which paragraph did you start with?-- Paragraph 3.

Thank you. Sorry, can we pick up on that paragraph? "A Flood

Mitigation Manual ensures that such dams make controlled releases of water for flood mitigation purposes in accordance with pre-agreed conditions."?-- Yes.

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What are the pre-agreed conditions that are being discussed there?-- I think my interpretation of that is that the mitigation manual is making explicit the conditions on which controlled releases will occur, and that therefore is the documentation of the set of operating strategies that are intended to manage the dam as it seeks to mitigate flood risk and perform that role which is the function of the dam.

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Sorry, I'm not sure I follow. What are the pre-agreed conditions?-- Well, as I said, the pre-agreed conditions, as I interpret that guidance in the explanatory note, are basically saying that there will be, in advance of a flood event, specified conditions or scenarios identified - operating practice identified - which is then reflected in the manual, so that there is some advance analysis of the issue and some previously determined definition of the operating strategy by which the dam will be operating in the event of a flood.

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And how does that happen?-- How does what happen, sorry?

How is that strategy determined? How are those pre-agreed conditions settled?-- Well, they're settled in the form of a Flood Mitigation Manual. I think my officer, Peter Allen, who is a forthcoming witness to the Inquiry, has addressed this - the history of the manual and its development in his statement fairly explicitly.

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All right?-- And that's been a process that has had some form, I gather, since 1980. So-----

The pre-agreed conditions are the process by which the manual itself is settled?-- My interpretation of this clause is that the pre-agreed conditions are the documentation of the flood operating - or the operating practices which are going to occur in a flood event, and that that's documented in the manual.

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All right. In any case, that paragraph says what the manual is meant to ensure, but it's ensuring it for the purposes, according to the words of Attachment C, of providing the dam owner with indemnity for flood release operations. That's the fairly explicit wording on page 1 of 8 in Attachment C, isn't it?-- I understand your interpretation of page 1 of 8, and I'm not sure if the wording there could have been better expressed in this document, but it certainly shouldn't be taken to imply that the sole aim of the manual is to give the dam owner indemnity for flood release operations and, indeed, the rest of this document, including the checklist of Attachment C, goes through quite a number of details, the factors which should be considered, which go far beyond the extent of the indemnity provided to the dam owner.

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All right. We will go through the rest of the document,

because the second thing that can be noted in the paragraph which I've already referred to is that, "It's realised it is sometimes necessary to place people at risk for the overall benefit of the community." That's the sentence which follows the one we've been talking about. Do you have that?-- I have that. 1

And that is a proposition which is readily enough understood, but where do we find the learning as to how that balance is to be struck - that balance between putting some people at risk and the overall benefit of the community?-- I suggest to you that in practice we have found that learning through the process of the reviews that have occurred after significant flood events. There have been a number of these reviews undertaken, led by the dam owner and operator and Seqwater and its predecessors, and they've involved input from relevant stakeholders, including local governments and my Department and its predecessors in the past, which have been focused on trying to make sure that the learnings of a flood event are incorporated and taken into account in terms of future flood preparation. 10 20

So, it has been struck in the process of reviewing the manual following flood events?-- I'm sorry, can you repeat the question? I missed it.

The balance between the need to place some people at risk and the overall benefit of the community is struck during the process of the manual being revised; is that right?-- Correct. 30

And did you have an understanding as to the actual input into that process by which the risk to some people has been assessed?-- I have a general understanding of it. It's not an area in which I'm professionally qualified or directly involved, but I have a reasonable understanding of the balance of issues in terms of the explicitness of damage curves that are produced, the involvement of multiple stakeholders in the review that's occurred after past flood events and the way in which Seqwater tries to bring those issues together. 40

And that's something that you would expect your delegate to assess when approving the manual?-- I would expect my delegate to assess the compliance of the manual with the legislative requirements, and I think the checklist that's provided here in this document that you've put in front of me in Attachment C is a documentation of what has been Departmental practice, I'm advised, for some period of time in the process of considering other reviews and it's fairly explicit about the issues that should be considered, including the flood mitigation objectives under the manual. 50

The checklist begins on page 3 of 8 in Attachment C; is that right?-- That's what I'm referring to.

What's there speaks for itself. The objectives of the manual - in that checklist on page 3 of 8, it's got a field which requires the person checking the manual to address whether it

has covered flood mitigation objectives, and there are four bullet points. This is point 4 on page 3, you see that?-- Okay.

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Are you aware as to the source of those objectives?-- My understanding is that these objectives listed here are a reflection of the kind of flood mitigation objectives that are common in those dams that have flood mitigation roles, and in some ways reflect the principles in the existing flood mitigation manual that's used for the Wivenhoe-Somerset system.

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Well, they reflect them perfectly. They are pretty well a transcription of them, and what I'm wondering is whether it came - they came to be in the manual as a result of Government policy or whether they came to be in the Government policy because they reflected what the manual was already doing?-- I think the short answer to that is that - and I'd have to say that my knowledge of this is not comprehensive - I haven't been involved in the detailed preparation of either the manual or this document - but to the best of my knowledge, the manual that is currently in use by Seqwater for Wivenhoe and Somerset is the most recent iteration of a document that extends back to 1980 and that there has been some process whereby there has been a documentation over time and improvement over time after detailed hydrological studies that have occurred in the 1990s that Peter Allen can speak to further, but there's been a process over time of refining that manual. This document that we've provided - the Department's document, prepared by Peter Allen - is intended to provide a guideline for a process by which a flood mitigation manual should be assessed and it's been prepared and finalised in 2010. So, by definition, the work around the preparation of a manual has occurred before there has been an explicit regulatory process for assessing the manual that goes to this level of detail, but it is one of the reasons why this document was prepared, so as to provide specific guidance to officers about how it should be assessed, recognising that some of the people that have been involved in flood mitigation manual, both at the operational entity and also in my Department, in the regulatory role, have long histories and therefore have a lot of experience, but there's a need to make sure that we have got documentation that makes that transparent, but also provides for new officers to take up the role at the time.

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I might take this up with Mr Allen. You - would you agree that the - that at the very least the wording on page 1 of 8 in attachment C at the first two lines of the paragraph under Information for Action Officers, that the wording of that is unfortunate?-- My response to that would be that the document as a whole makes very clear what the process should be by which a manual is assessed and for it to be a satisfactory manual. As I said earlier, it needs to have addressed the direction of operations, flood mitigation objectives, flood monitoring and forecasting, communications and the review of an event and operations during the flood event, emergency flood operations, an amendment since the previous manual and consultation. So there is a fairly explicit step by step process by which a manual will be determined satisfactory that goes beyond providing and indemnity to the owner of the dam.

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So the wording is not unfortunate?-- As I say, I don't think that wording fully reflects all of the objectives of the manual.

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One place we might look to discern government policy as to flood risks and so on is a report which was prepared, I think last year, the Queensland Government Flood Risk Activities Report. Are you aware of that document?-- There are a number of documents prepared with similar titles. If you have a copy of it there I would be happy to confirm it is the one I am thinking of. Yes, sure.

You are familiar with that one?-- Yes.

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Can you just tell us a bit about that document, how it came into existence?-- This is a document that was the finalisation, or it was a draft report attached to this document, but it was the outworking of an extended process of discussion among various government agencies about the way in which the Queensland Government approached matters to do with flood risk management. The document recognises that there are a range of different responsibilities for the Queensland Government in relation to flood risk preparation, planning, operational responses, technical information and that even within my own department alone there is a diverse number of areas in the department that contribute to those kind of functions. So this document, this document resulted from a process whereby my department, working with the Department of Community Safety and other government departments, including the now Department of Local Government and Planning, coordinated a process of workshops to try and identify where the government's activities touched on flood risk management and to try and identify any areas for improvement or better coordination across government, recognising that flood risk does, by definition, touch on so many different portfolios.

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All right, I tender that.

COMMISSIONER: Exhibit 392.

ADMITTED AND MARKED "EXHIBIT 392"

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MR CALLAGHAN: The copy you are looking at is covered by a briefing note to the Executive Management Group, is that correct?-- That is correct.

There is a section of "Background". The first bullet point there notes that, "Flood risk management in Queensland is a complex matter. The roles and responsibilities related to managing floods are shared across the State agencies with complex governance arrangements. This has resulted in lack of ownership at the State government level." Is that correct?-- That is what is states.

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By way of preamble to the background and the rest of the document?-- That's the opening paragraph from the background section.

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All right. Look, the document speaks for itself but as a general proposition I suggest to you that it notes as to dams that the dams are heavily regulated. That's just as a general proposition. I am not - perhaps I can cut this short. There is not a lot of attention given in that document to dam management; would you agree with that? That wasn't really part of the-----?-- I think that's probably fair comment.

-----the objective of that. It noted that dams are regulated-----?-- Yes.

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-----pursuant to a different regulatory framework?-- Correct.

And the amendment or the review of that framework wasn't really part of this exercise?-- Yes, I think that reflects the fact the exercise was about trying to document all the areas where activity was being undertaken and the regulation of dams was fairly transparent and well understood.

All right. It would seem that when the Water Act was passed there was express contemplation given to the proposition that someone in your position could get advice before approving a manual of the kind with which we are concerned; you are aware of that?-- I am.

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Specifically section 371(4) of the Water Supply Act provides for the existence of an advisory council; you were aware of that provision?-- I am aware of that.

When did you become aware of that provision?-- I can't recall the precise date. It is a provision related to a Flood Mitigation Manual that has been in the legislation as far as I know since I took up the role in 2009. So I can't recall the precise date.

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Well, in the latest revision of the manual which, as we know, the approval - the responsibility for approving it was delegated to Mr Allen?-- Correct.

He approved it on the 22nd of January 2010?-- Correct.

Did you take any direct interest in that process at all?-- I can't recall having any discussion with Mr Allen in which we discussed his considerations or likely decision in relation to that approval of the manual in 2010.

Mr Allen has volunteered, I think, in his statement that the general consultation processes involved in its preparation indicated that the manual had the support of Queensland Government agencies, the Brisbane City Council, the Ipswich and Somerset Councils. Are you aware of the consultation process of which he is speaking?-- I am. I'm aware that both Mr Allen and Seqwater has placed some store on that issue in relation to their past reviews and explicitly Mr Allen was of a view for that reason there wasn't a need to convene an advisory committee of the kind you referred to.

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Did he tell you that?-- I beg your pardon?

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Did he tell you there was no need to convene an advisory committee?-- My understanding is he makes it explicit in his statement. I might be incorrect on that but that is the impression I've gained.

That would have been stated to you sometime prior to its approval, obviously?-- No, sorry, that comment is something I have become aware of since.

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Since then, okay. All right. I suppose what I am asking at the moment when he speaks about the proposed manual having the support of Queensland Government agencies as well as those councils I mentioned, which Queensland Government agencies would you understand him to be speaking about?-- I think that is a question best directed to Mr Allen. I know that my agency is involved in that process but I couldn't say for sure. I think it also involves the Department of Community Safety but I don't want to lead you astray.

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All right. Sticking with the process by which the current version of the manual was approved, you know of a Mr Guppy, who works for you?-- Yeah, I know of him.

Works in your department. Were you aware that he had expressed some opinions about the adequacy of the current version of the manual prior to its approval?-- No.

You had no knowledge of that?-- No.

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No knowledge of the fact that he had expressed a view about the need to amend certain things which were not amended?-- No.

If such a thing did happen would there be any system in place in your department for such a thing being drawn to your attention?-- When - if such a what?

The situation where someone in your department is required to approve a manual which is being submitted to your department by Seqwater and there is some feedback that goes back to your department to Seqwater saying, "No, there is a few things here that should be amended," but Seqwater didn't adopt some of those recommendations and the manual was approved anyway. Is that the sort of thing which ought to be drawn to your attention?-- Well, it is difficult to comment on that without seeing the specifics of what you are referring to in relation to Mr Guppy's feedback.

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Well, we can do that. As a general comment - if you are happy for me to comment while you are producing that. We - there would be a range of issues that could be considered within the department. It is not always the case that every officer shares the same view on issues that have to be assessed, obviously. The key issue is the decision maker in this role has sufficient information in front of them and has satisfied themselves about the appropriate decision to be made. Now, I am not aware that - of any circumstances where Mr Guppy has provided advice about something that was inappropriately ignored by Mr Allen. That would be a matter for-----

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No, I am not suggesting anything was inappropriately ignored by Mr Allen and I am not suggesting necessarily that anything inappropriate occurred. It is simply this: as part of the process of approving the manual?-- Yes.

Mr Guppy, I think, made suggestions to Mr Allen and those suggestions were forwarded to Seqwater but not adopted in the version of the manual which was ultimately approved and I am asking you about how that squares or your lack of knowledge of that process squares with your overarching responsibility to ensure the delegation is being exercised appropriately?-- And I guess I would not see necessarily a difference of view within a work team being the kind of thing that needs to be elevated to the Director-General of a department with 5,600 staff.

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All right?-- Provided that the officer that's involved in making that decision within their statutory functions has given appropriate consideration to the issues. That's covered by the delegation, in my view.

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That's all I wanted to clarify, thank you. We know that in October of last year thought was given to lowering the level of Wivenhoe, North Pine and, for that matter, Leslie Harrison dams; that is correct?-- I recall that Mr Robertson asked for advice on this matter from the Seqwater Grid Manager.

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You refer to that in paragraph 13 of your statement, I believe?-- That is correct.

You reference Exhibit JNB9, that is the briefing note to the Minister which you approved; is that correct?-- Yes.

You have that?-- I have a briefing note. I gather I endorsed

it but may not have signed it. I can't recall the circumstances but I think I may have been travelling.

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Sorry, I missed the last part of what you said?-- I am sorry, the point I am making is I cannot see my signature on the briefing note but it is my understanding I endorsed that briefing note prior to it being finalised. I certainly initiated the brief note and asked for it to be prepared.

With the briefing note there are some attachments. The page after briefing note is attachment two "draft only". "Seqwater water grid prepares for the summer big wet."?-- I see that.

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See that? What is that?-- It is a draft press release which was attached to the briefing note that was put forward for the Minister to consider should he wish to indicate that the State was reviewing these issues prior to the wet season.

Well, it was more than an indication of review, though. If you look at the second last paragraph it says that, "Our analysis indicates that lowering the combined storage level of grid 12 storages to 95 per cent of capacity presents a low risk of adversely affecting regional or subregional water security." So there is at least the anticipation of a decision being made in that press release, is that right?-- I think it was provided on the basis that the Minister may wish to consider that approach. There was some evaluation at that time going into whether or not a reduction in that operating level should occur to minimise disruption to traffic, and road and bridge disruptions.

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Who drafted that press release?-- I am not aware of who the author of the press release was. It is possible given that the briefing note was put together by my department in consultation with the Seqwater Grid Manager, that that was drafted, in fact, by Seqwater Grid Manager and looking at it, it is probably more likely that was the case.

Is that supported by reference to the other attachments which are some draft letters prepared for Mr Allen to sign and for the Minister to sign? Would they, too, have been prepared by someone on behalf of the Grid Water Manager?-- What I understand is in relation to these issues that it is the Office of Water Supply Regulator that would have prepared attachment 3 and attachment 4 or attachment 3 in terms of both the letter from Mr Allen and the Minister, recognising that they were primarily their areas of responsibility but the draft press release is more likely to have been prepared by the Seqwater Grid Manager. Indeed, Mr Allen may be able to clarify that for you.

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The point being, I suppose, these things are being drafted by people who don't actually work in your department; is that correct?-- Some aspects of the material put in front of the Minister which go to issues around the analysis of the operation of the grid would be prepared by officers outside my department.

Then put under the cover of the briefing note and given to the Minister for his approval?-- In this case.

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It is clear enough that at this stage the Minister himself hadn't actually addressed this issue to the extent that he could at that stage have said anything like that which appears in the second last paragraph of attachment two?-- Sorry, could you clarify your question?

See the second last paragraph in attachment 2?-- Yes.

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The Minister couldn't have possibly have actually announced any such thing at that time; is that correct.

MR O'DONNELL: Well, that is hard for Mr Bradley to speculate as to what the Minister might or might not have known.

MR CALLAGHAN: The Minister had no basis-----

COMMISSIONER: I think it is a question about a state of affairs rather than a state of knowledge.

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MR CALLAGHAN: The Minister had no basis on which he could have made that announcement as at that time; is that right?-- If you are referring to the second last paragraph of attachment two, it is a paragraph that begins, "While we have all been focused on water security," are you referring to the single last paragraph on page 1, the attachment?

MR CALLAGHAN: Yes, the photograph I referred you to before, "We have analysed water security for South-east Queensland," and so on, "Our analysis indicates that lowering the level," and so on?-- Yes, so that was advice that was being provided by the Water Grid Manager at that time about his view around a drawdown to 95 per cent but, as you would note, the press release in that form was not issued.

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Quite. But, my question is directed to the issue as to whether there had been any analysis at that time?-- My understanding is that Seqwater had a view at that time that is reflected in the second last paragraph at page 1 of that attachment two.

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Where do you get that understanding from?-- From my memory of discussions at the time about their view about the extent of water security in South-East Queensland immediately prior to this wet season recognising that at 95 per cent there was - they were talking about, at that stage, a fairly small reduction in the operating level of the storage.

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With whom were those discussions held?-- My memory of is that there was informal discussion between Seqwater Grid Manager and Seqwater around that time about the fact there was some concern coming from impacted people downstream of the dam who were seeing fairly frequent interruptions to road closures as a result of dam releases recognising that once the dam exceeds 100 per cent then it has to be brought down - back down to 100 per cent of the full supply level within seven days. That

clear requirement in the manual was creating fairly frequent-----

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Sorry to interrupt you. I understand all that. The question is directed to this issue. As at 25 October-----?-- Yes.

-----someone had at least prepared a paragraph indicating that there had been an analysis which yielded the figure 95 per cent. Now, I thought you said that you had some discussions at that time which confirmed that was your understanding also?-- Yes, what I am saying to you is that my understanding was that Seqwater Grid Manager-----

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No, I am asking who the discussions with were?-- With Seqwater Grid Manager.

With whom specifically?-- I, think from memory, it would have been Barry Dennien the CEO -----

Right?-- ----- or Dan Spiller, the Director of Operations.

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Right. At that stage either Mr Spiller or Mr Dennien suggested the figure of 95 per cent in conversations with you?-- In conversations with me, Mr Spiller or Mr Dennien indicated that a small draw down, for instance, like 95 per cent may have been appropriate to minimise the disruption to roads from frequent releases from the dam.

All right. Well, the process was kicked off with the letter to Mr Humphries dated 25 October 2010; is that right?-- That is my understanding.

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Apart from the press release had anything else actually been prepared in order to give effect to that which was going to be announced in the press release? That is to say, once you got the approval, if you got it, how was it going to - how was the decision to drawdown the dams going to be affected?-- I don't think the regulatory implementation of it had yet been resolved at that stage. The Minister's letter to Mr Humphries was asking for advice on the matter.

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Well, was anything done towards resolving the regulatory issues?-- In short, no. As I said just now, I don't think there had been any resolution of the regulatory measures that would be taken implemented.

I understand they weren't resolved but was anything set in train to resolve them? Did you have a plan?-- No, in giving that the Minister had asked for advice as to whether or not there was any merit in considering the proposal, there was not at that stage any drafting occurring in relation to changes to Flood Mitigation Manual or the Resources Operation Plan which would have been required if there was going to be a variation to the full supply level.

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All right. So, did you turn your mind then to the need to amend the Resource Operation Plan?-- No.

Well, had you to wait for advice from the Water Grid Manager, is that your point? That you were waiting for a response?-- At this stage the Minister was asking for advice on the matter and we hadn't moved to look at the most effective means of implementing it. Of course, it wasn't yet clear that there was going to be any change undertaken.

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No, was advice sought from anyone else about the merits or otherwise of a drawdown in the dams?-- As I recall, there was advice that the - the Minister sought the advice from the Seqwater Water Grid Manager. The Seqwater Water Grid Manager took advice in providing the response to the Minister from Seqwater and also from the Queensland Water Commission.

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Well, the Water Grid Manager controls the rights to water in Queensland in broad terms, is that-----?-- It has a jurisdiction that only relates to a defined area of South-East Queensland.

Sorry?-- In that area it operates under a system operating plan. I can elaborate if you want.

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We can follow that. I will put it this way: Is flood mitigation or dam safety any part of the Water Grid Manager's responsibility?-- Not in an operational sense, no.

Not at all?-- No. Only to the extent that it is - it has a role which is a communications role representing all of the grid entities as a single face, if you like, for public communications which is why you would have seen it commenting on some dam matters including in relation to dam releases and flood mitigation in the past, but also obviously it is the contractual counterpart in Seqwater which has responsibility of flood mitigation.

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Your department also has responsibilities for flood mitigation and dam safety, don't you?-- My department's responsibility is for the dam safety, Office of Water Supply Regulator and dam safety function, yes.

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Do you have any responsibility for flood mitigation?-- We approve the Flood Mitigation Manual.

Is that all?-- That's the - that is the primary focus for the department in relation to those storages that have a Flood Mitigation Manual but as per the audit report you are referring to earlier, there are a range of ways my department attempts to assist flood mitigation to things like providing hydrological support to the BOM etc, the Bureau of Meteorology.

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All right. Let's put it this way, the Water Grid Manager would be very concerned if there was not enough water in the dam; you would agree with that?-- They have concerned if the dam wasn't able to supply-----

Yes?-- -----what they were relying on yes.

Whereas your Director of Dam Safety, who is in your department, is someone who would be concerned if there was too much water in the dam?-- He would have concern if the structural integrity of the dam was under threat.

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That's right. If anyone is going to say yes to a reduction in full supply level it is going to be the Director of Dam Safety rather than the Water Grid Manager; you would agree with that?-- No, I wouldn't.

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No?-- That's the reason why the advice was sought from the Water Grid Manager and indeed, I think both the - much of the expert commentary that has come to the Commission is focussed on the fact that these decisions inevitably involve trade offs between flood mitigation and water supply.

That is right and where was the information about flood mitigation going to come from?-- In this case from Seqwater.

So it was their responsibility to let the Water Grid Manager know whatever had to be known so the trade-off between dam security and water supply could be made?-- Correct.

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Okay. We know that the grid manager wrote back on the 24th of December. I think that is in Exhibit JNB 10, a letter of 24 December from the Water Grid Manager to the Minister - 11, I'm sorry, informing him that there was no in principle problem with Wivenhoe and Somerset being drawn down to 95 per cent and North Pine to 97.5 per cent; is that right?-- That is correct.

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But we also know, following evidence from the Minister, that on the 13th of December 2010, he met with the Water Grid Manager - and, in fact, with the Board of the Water Grid Manager. Now, were you at that meeting?-- No.

The Minister says, in effect, that on that date, he received advice which eventually came in the form of the letter on the 24th. Were you aware of that?-- That he received that advice at that time?

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On the 13th, yes?-- I can't recall. I know it's in my statement that I was having a similar discussion with Dan Spiller in early December where he was indicating the likely tenor of the advice, but I can't recall if I had a second-hand understanding of the Minister's discussion with the SEQ Water Grid Manager at that time.

Well, we'll come to your conversation with Mr Spiller in a moment. Perhaps let me come at it this way: when did you first know that the Minister had made the decision not to go ahead with the proposal to draw down the dams?-- My understanding is that the advice that the Minister was receiving, which was formalised on the 24th of December, by early to mid-December it was clear that SEQ Water Grid Manager and Seqwater were not going to be recommending a very significant-----

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My question is when you first knew of the Minister's decision?-- Well, it's difficult, because there was not an explicit documented decision. By the time Seqwater's advice - SEQ Water Grid Manager's advice was received on the 24th, there was already a fairly strong series of inflows into the storage and the dam was then operating-----

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I understand all of that?-- Fine.

How would it be that such a decision would not be recorded in a documentary form?-- Because by the time the advice was received from SEQ Water Grid Manager, the events of that wet season had overtaken the consideration of a pre-emptive drawdown-----

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But the Minister made the decision 10 days earlier. The Minister had made his decision, had he not?-- Had he not made which decision, I'm sorry?

The decision not to proceed with this plan? Did he not make that decision on the 13th after his meeting with the Water Grid Manager?-- Well, to the extent that that decision was made by the Minister on that day, you will be relying on his testimony on that matter rather than mine. The Minister sought advice from the SEQ Water Grid Manager on this matter. It is not something that I was involved with, personally, in the Minister's decision-making process at that time. It may be that that was - that that was the Minister's decision time-frame, but you will have to rely on his testimony on that matter rather than mine.

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Well, is the answer - is it the case that he never actually communicated that decision to you - that you got the response on the 24th in writing, which was, in effect, "You can go ahead with it.", but the decision had been made not to do that and events overtook - sorry, that no decision was, in fact, made, to your knowledge, not to do that?-- Sorry, there are a couple of different scenarios there. There's small drawdowns and there's a significant drawdown addressed in the advice of the 24th of December. Which option are you referring to?

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Well, the advice on the 24th of December was that there was no in-principle objection to the drawdown to 95 per cent of Wivenhoe and Somerset?-- Yes.

Are you talking about the significant drawdown that occurred earlier this year?-- I was referring to - I guess I was discussing both of them. It wasn't clear to me which one-----

No, we'll get to that one in the fullness of time?-- If we can just focus on the 95 per cent one-----

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Yeah, I'm trying to?-- I'm sorry. My understanding of that issue is that the SEQ Water Grid Manager, as you've covered initially, had a view that there may be scope to consider a drawdown to 95 per cent, which would be for the purposes of minimising road disruptions. It wouldn't be for the purposes of significant flood mitigation benefit in terms of downstream urban areas-----

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We understand all of the rights and wrongs of the decision itself. All I'm trying to work out is how these things get recorded, how the process actually works when decisions on water security and flood mitigation are being made, and I'm trying to establish when you, as Director-General-----?-- Yes.

-----knew of the Minister's decision that this procedure would not be pursued - this procedure that was being discussed between October and December?-- Yes, and, I'm sorry, without knowing fully his testimony, I'm not aware that the Minister actively made a decision, because I'm not aware that the Minister received formal advice in relation to that 95 per cent option from the Water Grid Manager. I'm not able to answer your question.

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Okay. So, you never knew that the Minister had actually made a decision?-- Well-----

You got that advice on the 24th and then events overtook it?-- As I said, the rainfall events in December overtook the likely consideration of that option.

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I think that's answered my question. We do have to address, though, the speed at which a process like this is conducted, and this was not a long-term policy issue. If it was going to happen, it had to happen in the wet season?-- Yes.

At best, it would seem the query as to whether or not such a thing could be done was kicked off on the 25th of October, and, at best, for the Minister at least, it would be the 13th of December before a decision of sorts was apparently made. You've referred - and refer in your statement at paragraph 39 - to a conversation with Mr Spiller, and we'll return to that in a moment, but it would seem that there was no query - or you tell me - was there any query in the whole of November as to how this proposal was progressing?-- The advice was sought from the SEQ Water Grid Manager, so you would need to - I'm providing you with my perspective on that as someone ancillary to the provision of the advice to the Minister, in that the advice was being provided - or requested from the SEQ Water Grid Manager Chair to the Minister. So, I can't give you anything other than my personal understanding of what progress updates were provided, but my understanding - the first time I received a clear indication of where the advice was likely to be heading was in that period in the first half of December that I referred to in my statement.

All right. So, that's what I'm getting at. There's nothing done by your Department for the whole of November in terms of chasing this thing up?-- My Department wasn't requested to provide the advice.

No, but you're the only one that could do anything with it once you got it, weren't you?-- And that's the issue, that a proposal had to come forward, recommending that there was a course of action that was going to require some regulatory issue to be addressed. That's the point at which my Department would become involved.

That's the point at which you could do something about it, but, I mean, you might have got to a point we'll address. Is this entirely a matter for these regulatory authorities. It is not a matter for the Department as to whether or not this should have happened?-- The principal source of advice - and I think other submissions and testimony make this clear - the principle source of advice on these matters was to come from the operational entities-----

I understand where the advice was coming from, but who was going to make the decision?-- Well, in this case the Minister had requested advice about whether or not this was required to be undertaken. If there had been a recommendation from Seqwater, then there are - I probably addressed it in my statement - there are a couple of things that need to be addressed. If it is a change to the full supply level that will be required to administer that change - whether it was to 95 per cent or some other level - then that was going to need to be reflected in an amendment to the Flood Mitigation Manual, but also an amendment to the provisions whereby the ROP provides for full supply level.

And that's your decision?-- It would require a proposal to come forward that there was a flood mitigation reason to do it.

That's right, but it would ultimately be your decision?-- I
prepare the amendments to the ROP.

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Well, you-----?-- Correct. I'm agreeing with you. Sorry,
I'm just trying to-----

All right. And the point being that it was a decision which
you were going to have to make, or the Minister at least, and
nothing was done to follow through and see whether anything
was going to be provided before the end of the wet season -
that is to say, nothing done during the month of November?--
As I understood it, the request had been put in train that
Seqwater and the Water Grid Manager were actively preparing
the advice to the Minister. The request had been made to
those agencies that were going to be replying directly to the
Minister, as they did on the 24th. So, my Department wasn't
responsible for undertaking the analysis. I tried to stay
abreast of it and can recall that discussions occurred in
early December on the matter.

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How did you stay abreast of it during November?-- I wasn't
aware of - as you'd appreciate - the range of responsibilities
for me personally in my role. I wasn't aware of any issues
which arose or became problematic in November. I'm simply
confirming that the first discussion I had in relation to
progress and the likely outcome of that assessment was in that
discussion with Mr Spiller in early December.

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Well, let's turn to that. That's at paragraph 39 of your
statement; is that right?-- Correct.

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And his suggestion was that there was unlikely to be a
recommended strategy; is that right?-- The statement says
that Mr Spiller indicated Seqwater's current analysis
indicated that pre-emptive releases were unlikely to be a
recommended strategy.

That's right. But the letter you actually received
in December was that there was no in-principle objection to
it. Where does that leave the decision as at the 24th
of December? You've got some oral advice that there's
unlikely to be a recommended strategy, but a written advice
saying there's no in-principle objection to it?-- The
statement in my - sorry, the comments in my statement at
paragraph 39 particularly focused around the issue of
pre-emptive drawdown of the storage in relation to the
significant release - bringing it down to a level of 75 per
cent or something of that order - so, a major contribution to
flood risk mitigation, rather than a minor drawdown which
would remove the nuisance impacts of road closures.

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I understand. Is there any record of that conversation with
Mr Spiller?-- Not at my end. I don't know if Mr Spiller has
got any record.

Did you communicate the effect of that conversation to the
Minister?-- I'm in fairly constant discussions with the
Minister and his office. I can't recall whether I gave that

indication to him or his office during that period of time.

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Well, as you say, events may well have overtaken the whole process by the time a response - any response was received and we know what occurred in January. I just wanted to ask you a couple of questions about the operations of the Flood Operation Centre. You were aware that it's staffed by Flood Operations engineers?-- I am.

And you have a role in the staffing of that centre; that is to say, I mean - I'm not trying to test your knowledge of the manual, but the manual provides, I think in 2 point - have you got a copy of the manual?-- Not with me.

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I'll place a copy in front of you. Exhibit 21?-- Thanks.

2.6. There are various references there to the Chief Executive. That's you, for these purposes; is that right?-- Ah, yes.

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Okay. And a member of your staff - that is to say, Mr Ruffini - is one of the Flood Operations engineers; is that correct?-- That's correct.

Do you know the means by which it is arranged that he is a Flood Operations engineer by which his services are made available by your Department for those purposes?-- When you refer to the means, what are you-----

Is there some contract between DERM and Seqwater or some arrangement in place or some understanding as to how he goes and works there?-- I'm not familiar with the detail of that.

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All right. Coming back to your statement and the question of the drawing down of the dams, we know now, of course, that the level of the lake at Wivenhoe was drawn down to 75 per cent, and that decision was announced on the 13th of February 2011; is that right?-- I don't have the date in front of me, but that's broadly correct, yep.

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All right. The conclusion was - or the opinion was that such a drawdown could have appreciable flood mitigation benefits; is that correct?-- Correct.

It was actually put into effect by an amendment to the Moreton Resource Operations Plan, which was approved by you on the 17th of February?-- That's correct.

I would like to look at the process by which this decision was made. There was a meeting that the Minister attended with Seqwater on the 31st of January 2011. To be fair, I don't think you were at that meeting, but did you have knowledge of it?-- Look, I'm sorry, I may have knowledge of some aspects of it. I can't recall, based on the date, any particular meeting.

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Do you recall any discussion at or around this time - discussion as between yourself and the Minister - as to who

should take the lead on communications on this issue - whether it should be his office - that is to say, your office or Seqwater or the Grid Manager? Do you recall it being discussed who should be the one to take the lead on communications?-- When you say "communications", are you talking about internal communications or public communication or-----.

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I think public communications?-- So, public communications, and about the issue of a drawdown to 75 per cent?

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Yes?-- I can't recall any discussion with the Minister about who should take the lead on that issue. There were a range of discussions through this period, including immediately prior to the joint press conference between the Minister and Mr Borrows where they announced the proposed drawdown, when I was involved in some discussions in preparing for that press conference, but I can't recall discussing with the Minister about who should take the lead.

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All right. Moving then to the 1st of February, and I could probably take you to paragraph 54(b) of your statement. You refer to a teleconference which you describe as a very brief meeting where Seqwater provided an update on the likely timing of its modelling analysis; is that right?-- That's right.

Mr Allen was also present at this meeting; do you recall?-- It was via teleconference, so I can't be sure, but I assume that your records are correct.

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All right. Do you recall there being a difference of opinion at this meeting as to what the manual required, or what could be done pursuant to the manual?-- I recall there being some discussion about what ability the manual provided for in relation to the discretion of flood engineers, but more particularly I remember there being a discussion about whether or not there should be - if the full supply was going to be altered, whether or not that would be done as part of the manual or the ROP or both.

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Yes, and there was a difference of opinion as to that issue as between yourself and others; is that correct?-- I'm not sure that I would describe it as a difference of opinion. I think that there was - there was a discussion where I was trying to clarify what the procedure would be. I think, ultimately, we ended up confirming that it would need to be amended in both.

All right. Just excuse me for one moment.

COMMISSIONER: And was the manual actually amended at that time?-- No, the manual wasn't amended. We ended up implementing the drawdown to 75 per cent through creating the ability under the ROP for an interim program to be lodged, and so the drawdown to 75 per cent wasn't an alteration to the full supply level, but was an agreed interim supply - security level, I think, was the phrase given to it in the interim program.

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It is just that I thought you said that you had agreed that it would need to be amended as to both?-- Yes, sorry, what I was saying was that in a regulatory sense, if the full supply level was to be altered, then it is nominated in both the Flood Mitigation Manual and in the Resources Operation Plan, so both would need to be amended if the full supply was going to be amended.

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All right. But that's not how it happened?-- No.

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MR CALLAGHAN: I might at this stage tender the statement of Mr Borrowes with attachments. It is tendered in CD form. There's a copy here.

COMMISSIONER: That will be Exhibit 393.

ADMITTED AND MARKED "EXHIBIT 393"

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MR CALLAGHAN: Can I ask you to turn to PB17? These are said to be some notes of the conversation at this meeting on the 1st of February 2011, prepared by Mr Pruss, I think. You've seen these notes before?-- I have.

Do you accept that they're a record of the conversation on the 1st of February?-- Without endorsing them verbatim, I accept the reflection of the general discussion.

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All right. They record you making queries about how full supply level was set and how the manual can be changed, things like that. I'm looking at the second page of those notes. Were you making inquiries along those lines at this meeting?-- Yes.

Okay. There was a note also made by Mr Allen about this conversation, I believe. I'll just suggest to you that in the course of this - in the course of this meeting, Mr Allen - or it was said, at least, by someone from Seqwater that they saw their role as an advice role and not a recommendation role for preferred policy adoption; do you recall that difference of opinion being expressed at that meeting, or at least that opinion being expressed at that meeting by someone from Seqwater?-- I do.

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You do?-- I do.

Your view was different; is that fair?-- My view was that Seqwater should provide advice in relation to any change in full supply level. If there was to be any consideration of that matter, that that was an issue which, as a dam owner and operator, with - a dual function dam, where it has a function in relation to water supply and flood mitigation - that the owner and operator should have a perspective on that and be in a position to provide advice, and, finally, also I recognised, too, that the Flood Mitigation Manual is approved by the

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regulator after being prepared and submitted by the dam owner and operator, so to the extent that it addresses flood risk and flood risk mitigation, it seemed appropriate to me that the owner and operator of the dam should have a view on that.

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I'm not sure I follow that last bit. Because they prepare the manual, they should be in a position to advise on full supply level; is that what it comes down to?-- Effectively, that as the owner and operator of the dam, they prepare a manual which addresses how the dam is going to be operated to mitigate flood risk. One of the issues which obviously is directly related to the flood mitigation is the full supply level, and the legislation creates a framework in which they submit variations to the manual to the regulator, so therefore they have to have a view about the contents of the manual, and a lot of those contents includes the full supply level itself.

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You see that as a Seqwater responsibility - the determination of where full supply level should sit?-- I thought it was a responsibility for Seqwater to have a view on that. There are clearly more security implications that come from that, so I'd also expect that the Queensland Water Commission, as the water supply planner, if you like, for South-East Queensland should have a view on that, too; but from a flood risk mitigation perspective, I would expect that the dam owner and operator would have advice to provide.

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Right. There was a further meeting on the 8th of February to which you refer at paragraph 54(d) of your statement. You have just two lines there. Is that the extent of your recollection of that meeting?-- It is. I mean, I can recall a discussion about the broad approach for establishing an interim program. We were trying to find a way to address any change to the operating level of the storage on a temporary basis, which is where this suggestion of an interim program came from, and my staff were briefing me on that.

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Did you retain any note or record of this meeting?-- No.

Madam Commissioner, I'll be a while yet. Would that be a convenient time?

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COMMISSIONER: We'll come back at quarter to.

THE COMMISSION ADJOURNED AT 11.29 A.M.

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THE COMMISSION RESUMED AT 11.45 A.M.

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JOHN NEVILLE BRADLEY, CONTINUING EXAMINATION:

MR CALLAGHAN: I was asking you about the meeting on the 8th of February to which you refer in paragraph 54D of your statement. You have the two lines there and no other record of the meeting so far as we are aware, is that right?-- That is correct.

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Could I ask you to take a look at Exhibit JB21 - PB, sorry, PB 21 which is in attachment to Mr Bradley's statement - Burrows, sorry, page 199, if that helps?-- Thank you.

Do you have that?-- I do.

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You have seen that document before?-- No, I haven't - I can't recall this one as clearly as the other but I am happy to work through it.

Well, all right. It, again, purports to be a set of notes taken of that meeting but you haven't seen it before?-- I am aware that there were a series of meeting notes tabled now as part of the statement of Mr Burrows. I only became aware of it through the release - public release of these so I am not personally closely familiar with this set of meeting notes. They weren't shared with us immediately after the meeting, if you like.

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No, I understand that, I was wondering whether anyone had shown them to you recently, that's all?-- I am sure they are in one of the set of materials I have been given, because there are copies of statements. All I am saying to you is that if you find me unfamiliar with the detail of them before we start, that's why.

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I probably in fairness to you should give you the opportunity to read it and tell me whether there is anything in there you disagree with as a record?-- Sure, would you like me to read the three pages of the notes?

Madam Commissioner, I think it is going to be simpler to do that seeing he hasn't seen it yet. We would like to give him the opportunity to read it, if that is okay.

COMMISSIONER: Certainly.

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MR CALLAGHAN: I might just have a seat?-- Thanks.

Read that? First of all, is there anything in there that you take exception to, anything you identify as being an inaccurate record of the proceedings?-- Look, I can't say for sure that I can endorse every comment as being an accurate record of proceedings. I think some of the tone in places is

subjective on the part of the author of the minutes but generally in terms of the direction of the discussion I think it is fairly appropriate. 1

Well, you speak of tone. I agree with you that it is a document that does have a tone to it. For example, at page 200, which is the second page of the notes, third paragraph down starting "JB stated that from DERM's point of view he could not comprehend how an owner and operator can't come to a corporate position on FSL." Does one detect an element of, I don't know, perhaps frustration on your part that Seqwater weren't giving you the information you required?-- I think during this discussion I was reflecting an urgency and an urgent need to try to resolve these issues as quickly as possible and to get clear advice from Seqwater as quickly as possible. 10

All right. In that same part or that same paragraph you say you, "Could not comprehend how they couldn't come to a corporate positions on FSL as required by the statutory report under the manual. What are you referring to there?-- Well, these are someone else's minutes of the conversation so I am not sure if I did express it verbatim in that way, but what I was indicating was that, as I said to you earlier today, that as the owner and operator of the storage, they are operating a storage that provides both the water supply and the flood mitigation function and that it seemed to me appropriate that they would have a corporate view on that and that indeed, if there was to be any alteration to the flood mitigation principles that are already in the procedures in the manual, that they would have to be addressing that as part of their real view of the flood event as required by the manual. Now, what Seqwater have ended up doing is providing a way forward in relation to - not the review of the flood event but a process to look at further work in this area. 20 30

We will come to that, thanks. What I am interested in is whether you regarded the manual as something which required Seqwater to have a corporate position on FSL?-- What I was saying in that meeting was, and I have to say, too, as a preface to this, that my comments in that meeting were based on the information that I had before me at the time in relation - I was trying to understand the regulatory framework as it was perceived by Seqwater and my own staff in some of these discussions but it is fair to say that I was trying to confirm that a review of the flood event was going to require an assessment about the extent to which there should be a re-examination of full supply level and Seqwater was to be a reviewer of that flood event and therefore should offer a view. 40 50

Not only should it identify the need for a reconsideration of the level but it should identify the level. Was that your position?-- I thought that it should have a view on both. It may not be that one could be completed within the six weeks time frame that is provided for under the manual but I thought it should have a way forward on both, as the owner of the dam.

I think you implicitly acknowledged at least what seems to be reflected in these minutes was that at this stage you really didn't know how the regulations worked; is that correct?-- What I am saying to you is that at this stage there was clear provision for a review of the flood event in the Flood Mitigation Manual but that was explicit. That full supply level was defined within the manual and that there was provision for the owner and operator of the storage to undertake that review. I was asserting a view that those issues should be considered and any need to change full supply levels should be considered in that review. I note that Seqwater's review report as submitted to the Commission has provided a process which would seek to address the benefits or otherwise of any change in full supply level over time.

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But you, for example, four paragraphs down, the paragraph begin, "JB asked if the manual was not the regulatory instrument to change or specify it whereas it had been set." You said, "Even if DERM wanted to take it on DERM could not do that, there was no instrument to do so. You would appear to have been unaware, at that stage at least, as to the significance of the Resource Operation Plan; is that right?-- No, I wouldn't characterise it at that stage. At that particular meeting by that stage there had been some discussion about the view that the full supply level was specified in the ROP so I was aware of that view. I think the way I characterised this is to say that full supply level was specified in both documents. For the purpose of the ROP it is specified in terms of trying to make sure there isn't an over allocation, if you like, for water supply purposes from the dam. For the purposes of the Flood Mitigation Manual, the full supply level is set in terms of trying to make sure there is sufficient flood mitigation capacity of the dam and, if you like, the full supply is not set too high. So my line of logic in my discussion and these discussions with Seqwater was to assert the view that if there was going to be a change for a flood mitigation reason or objective then would be more likely it would be driven by a review that was occurring in accordance with a Flood Mitigation Manual than it would occur underneath a change to the ROP, even if a change to the ROP would be required if that review did result in a recommendation to review the full supply level.

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As it turned out, it was just the ROP that needed attention?-- Well, the ROP was amended in order to provide for an interim program.

That is correct, that is what you were talking about?-- To be fair, the full supply level, as I said earlier, was not altered in that change which allowed us to reduce this level to 75 per cent. At this stage, at this point in the discussions the questions were going to what the appropriate full supply level should be.

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But only for the purpose of the temporary measure that was required at the time, surely?-- Well-----

That's what this discussion was about?-- It was prompted by

this discussion. This discussion was prompted by that consideration. But, as you are raising with me, there was a discussion in the middle of that process about what the regulatory controls were in relation to the setting of full supply level. The truth is that it specified in two separate regulatory instruments.

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We were talking about the temporary change that was going to be effected in February, that's what this was all about, wasn't it?-- That was what this discussion was prompted by and it led into a discussion about how the full supply level was set which might have broader implications.

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If we look three paragraphs up from the bottom, middle sentence, "JB, however, stated this was a temporary change and therefore a variation to the manual was appropriate." In the following paragraph, "If the manual was not the instrument to change FSL what is the other regulatory instrument? It is not the ROP." That was all in the context of what you say here a temporary change, wasn't it?-- That conversation occurred in the context of a temporary change.

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Thank you. Go over the page in the second paragraph you are recorded as stating, "The Minister expected the Board to provide corporate decisions on FSL." I take it that you don't - that is, in fact, the position expressed by the Minister?-- Sorry, can you refer me to the sentence?

Second paragraph on page 201, "It was the expectation" - "JB stated it was the expectation of the Minister."?-- Yeah, look, I think that is an accurate reflection of what I communicated in the meeting. The Minister and I both had a view that the Board and Seqwater management would have a recommendation to make on full supply level.

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I am confirming that was, in fact, the view expressed to you by the Minister?-- Correct.

Down towards the - in the middle of that page we revisit the question of tone, if you like, or the sentence that begins, "JB stated to not come to a position on the benefits and desirability of changing FSL and releases is a fundamental vacation of the area we should be expert in," and that you could not understand how change gets done without using the manual. Is that - does that suggest that you were, again, sensing some frustration that Seqwater weren't giving you the advice that you wanted?-- There are two separate statements there.

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There are?-- The first - if you are happy, I will answer the question.

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First one first?-- The first statement says that - is basically me asserting a view that Seqwater should be able to provide advice in relation to this matter about what a full supply is. The second statement is me questioning and seeking views from those in the room about the appropriate regulatory procedure by which there would be a change to full supply

level if that was, indeed, what occurred. As we know, it was not what ended up occurring. There was not a change to full supply level. There was an interim supply and security level struck under an interim program in a different regulatory context. So, I guess the thing I would clarify is that the first statement is a statement of view. The second statement is more of a question seeking to explore this issue about what the regulatory process was going to be to give effect to any change.

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Three paragraphs up from the bottom you are reported as saying you are sure there was nothing in Seqwater's insurance policy that would prevent Seqwater from fulfilling its regulatory obligation. Two aspects to that. Again, you saw this as an obligation on Seqwater to provide the advice that you wanted?-- This goes to the issue around the nature of the record of this meeting. So, this isn't a record of the meeting prepared by me and the paraphrasing of any comments made by me shouldn't be taken as the way I expressed it at the meeting. What I would say, and the sentiment I recall expressing around this issue, was that normally insurance policies would be expected to not remove protection of insurances if an entity is abiding by the requirement of legislation or regulation and if operating releases from the dam to achieve compliance with a Flood Mitigation Manual or other regulatory instrument was required, then it wasn't clear to me - I was asking rather than telling - it wasn't clear to me rather - why the insurances would be invalidated by that change in practice. So, I emphasise that in this case my recollection of the discussion was that this was me challenging Seqwater to provide confirmation on this issue or clarify this issue. Again, the final outcome was resolved with us addressing all issues in relation to insurances and indemnities with Seqwater explicitly.

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I was going to ask you about that. In the end you did get the advice that you were seeking and that is in PB23; is that correct?-- I confirmed that on the 10th of February we received that advice. What we were seeking was advice from Seqwater on that issue rather than having a predetermined view about what its analysis of the issues would show.

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Well, the recommendation in the last paragraph was what you were after, wasn't it? That was the corporate position that you were chasing; Seqwater recommends that Wivenhoe storage level-----?-- We were seeking Seqwater's advice on that issue, correct.

That was the corporate position you wanted?-- Correct - no, sorry, we did not have a predetermined view about what corporate position it would provide but we were seeking a corporate position.

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No, all right. Then your response follows in PB24, page 204, the last paragraph on that page records that the State was currently considering the request for a deed of indemnity. When was the request for a deed of indemnity made?-- My recollection is that it was made - it was foreshadowed in the

earlier discussions which were occurring to - in some of those I highlighted in my statement. I can't recall a specific date but when we were beginning to speak about the process for an interim program it was around the same time that Seqwater began to indicate that it was going to potentially require some indemnity for those releases that would occur because it would be releasing outside of a flood event and so the issue that arose was Seqwater's insurance framework was based around them undertaking dam releases either for water supply purposes or in the context of a flood event. Here there would be a situation where to get down to the 75 per cent level they would need to be releasing basically to do that and that they needed to make sure that was - were not going to be exposed in terms of any insurance issues while that occurred.

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I understand that would occur, but where is it recorded? Where is the process by which the indemnity or the decision to grant an indemnity is discoverable? I mean, I know the indemnity, for example, itself is, I think, in PB27, and I'm just asking whether there's anything else recorded that documents this process by which an indemnity was granted to Seqwater? I'm not questioning the wisdom of the decision, I'm just working out how it works and where-----?-- Sure.

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-----these things are recorded?-- And my recollection is that - I mean, obviously there was advice taken - as I say in my statement, there was advice sought from the Treasurer's office, or from the Treasurer himself, I should say, in relation to the provision of an indemnity, as I discuss in paragraph 69, and, again, the deeds were prepared for me to execute on behalf of the State on the 17th of February. So, there would have been a process of advice seeking the Treasurer's approval for those indemnities, but personally I can't identify which exhibit could potentially identify that process for you.

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All right?-- I could come back to you if that was to help.

Okay. While you've got Mr Borrow's exhibits there, can I take you to page 257, which is part, I think, of PB29? It's a Ministerial Media Statement. This would have been drafted for the Minister by your Department; is that right - someone in your Department?-- I expect so.

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And the second paragraph begins, "Seqwater has formally recommended Wivenhoe Dam's be temporarily produced to 75 per cent", and so on. Is that how you saw the advice from Seqwater as a formal recommendation?-- Yes.

Coming back to what I asked you at the start about Seqwater and it's status as a statutory authority, do you see it as having part of its function advice to the Minister, or advice to the Chief Executive of the Minister for matters such as this?-- In this case, I think it does have a role in providing advice to the Minister when the Minister seeks such advice, but it has it not just because it is a statutory authority, but because it is the dam owner and operator. Seqwater providing this advice in relation to the temporary drawdown of the dam to 75 per cent is not dissimilar to the role that Seqwater has provided previously in relation to past assessments about any changes to the full supply level, and I know the Commission will be aware of a study done in 2007 that was some preliminary work done in relation to the change in full supply level for the purposes of increasing the storage capacity of Wivenhoe Dam. Seqwater in that advice, in that report, prepared significant analysis and provided explicit recommendations about the approach to the full supply level. So it wasn't greenfield territory for them to be pining on what the full supply level should be or the operating level of the dam should be.

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All right. And accepting that they've got relevant

information, obviously, I'm just exploring whether you're aware of any statutory provision which makes it their function to provide such advice?-- I would see it as being consistent with their statutory functions, but I'm not aware of any specific provision.

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And just to explore the relationship between Seqwater and your Department a little bit further, can I show you a ministerial briefing note of the 10th of February? Perhaps just to clarify, I think these are briefing notes that are prepared for the Ministers for parliamentary sittings; is that right?-- I haven't seen the document yet.

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Sorry, briefing notes are prepared for Ministers?-- They are.

For the purposes of Parliamentary sittings. I will show you one such document. This is a document which was prepared for the Minister for the Parliamentary sittings 15 to 17 February 2011; is that right?-- It's so marked.

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And it would appear from the date down at the bottom of the page to have been prepared on or about the 10th of February?-- That's correct.

And it's got a contact, Mike foster. Who's he?-- He's an employee of Seqwater.

And approved, Peter Borrow, Seqwater?-- That's correct.

So, does that suggest that this document was prepared by them, or approved by them, or both?-- Well, it suggests both, but at the end of the day, they are the principal authors of the document, but often these things have - they're coordinated through a central departmental area that assists the Minister with a single set of briefing materials and so comes through in a consistent format.

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Right. So, someone in Seqwater prepares a note for your Minister and that's for the purpose of - for the Minister to inform Parliament, is that-----?-- And usually where it is primarily related to the activities of Seqwater, like this.

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Sure. Does it have - does anyone from your Department vet this?-- We have a co-ordination team that makes sure that briefing notes - do a quality assurance, if you like, in terms of the presentation of the briefing note, but the briefing note can also be edited by the Minister's own personal staff or the departmental officers if there's an issue that needs to be corrected or clarified in it.

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Would you see a document like this before the Minister did?-- Not in every case. I would have access to documents like this, but would not endorse each and every briefing note of this kind.

So, if there was a query, for example - if you'd turn to the second page - the last bullet point on that page - it says, "The manuals and their operating procedures have been reviewed

by some of Australia's best water experts.", and so on. If the Minister wanted to quiz - well, which experts - how would he do that?-- Well, there are two potential lines of inquiry. Both my Department and Seqwater are responsible to the Minister and the Minister could seek a view from both the - from Seqwater, as the party preparing the manual and undertaking the review, or from the Office of Water Supply Regulator in my Department which participates in that review process and would also be aware of those issues and able to offer an independent view.

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So, the Minister can go straight to Seqwater for advice?-- Certainly.

I see. All right. I'll tender that.

COMMISSIONER: That will be Exhibit 394.

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ADMITTED AND MARKED "EXHIBIT 394"

MR CALLAGHAN: Looking ahead, you have already mentioned that Seqwater has presented a draft study proposal with a view to amending the manuals; is that correct?-- That's correct, they've written to us only very recently in relation to that process.

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This is very recent, but it is suggested that there will be a steering committee, on which your Department will be represented?-- I'm familiar with the proposal, yes.

Well, your Department, I believe, in that document, is identified as the primary stakeholder with an interest in protecting the safety of the dams; did you notice that?-- I don't have the document in front of me.

Is that-----?-- If we're going to entertain it, I'm happy to have a discussion about it and I think there are some - I'm happy to comment on it.

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All right. Turn to page 7 - page 7 of the proposal. You will see that DERM Dam Safety Regulator is identified as the primary stakeholder for the purposes of protecting the safety of the dams. Do you see that?-- I can, yep.

And, in effect, you're the only Department identified as representing that interest, and I appreciate that this is all a very recent development, but do you have a view as to how that interest is going to be advanced?-- Firstly, to clarify the first point, I guess the primary stakeholders, by definition, are stakeholders other than Seqwater itself, and so obviously the safety of the dam is something that I would assume, Seqwater would agree, is a fundamental responsibility of them also. In relation to the question as to how the particular safety of dams is to be addressed, I think it is

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fair to say that we are still considering this proposal and the proposed way forward for Seqwater and that they're - the Department I'm taking advice from is the Office of Water Supply Regulator about these issues in terms of how we will best manage this process, and also we will be keen to make sure that we do it in a way that's consistent with where the Commission goes with its interim report, but suffice to say that the flood mitigation operation of the dam comes back to two key considerations: one is the threshold issue about a full supply level, but the other one, just as importantly, is the operating modes under what are currently the strategies of W1 to W4, and any refinement or fine-tuning of those operating modes either to alter priorities or to improve their effectiveness in some way. So, it's fair to say that I agree with Seqwater's assertion and the assertion made by Mr Babister and others that these are complicated issues that need to be carefully analysed and subject to extended analysis.

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You can probably leave that because it is early days and you haven't had a lot of time to consider it, I understand that?--
Yep.

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The one thing I would ask you in conclusion, though, is do you view the current process - that is to say, whether the manual is prepared by Seqwater even after large consultation process - and submitted to DERM for approval, do you think that that's the appropriate process - or that that process should be maintained, or do you have any view as to a different method by which the manual might be brought into existence, certified, approved?-- I think it is fair to say that we are yet to resolve a view as an agency about that.

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If you don't have one yet, that's fine?-- That's fine, I'm happy to just make one more comment. We're yet to resolve a final view as an agency, but it seems that the process for addressing the considerations under the manual that Seqwater was laying out and that other submitters to the Commission of Inquiry have laid out is appropriate; that you're balancing a series of objectives. To me it is appropriate that the dam operator, as the custodian of the manual, operating underneath that manual, should coordinate an exercise which reviews the effectiveness of the manual and the operating principles within it, and that, in my understanding, has tended to be the way, in practice, that these issues have been determined, where a proponent is responsible for matters such as the full supply level and a regulator reviews and tests the assumptions that are then documented in that Flood Mitigation Manual. So, I think it would be important that the exercise - if you're going to review - if we're going to review the manual in future, that there be a clear process for a proponent of any change to the manual, and a regulator assessing and approving and confirming the final manual. For that reason, it makes sense to me to have Seqwater leading that process at this point, rather than the Department, who is then the regulator, otherwise you have a role conflict. So, that's the only comment I would make on that issue.

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All right, thank you. That's all I have, Commissioner.

COMMISSIONER: Mr O'Donnell?

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MR CALLAGHAN: Sorry, I tender the draft study proposal.

COMMISSIONER: Tender the what, sorry?

MR CALLAGHAN: The draft study proposal that was just shown to Mr Bradley.

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COMMISSIONER: Thank you.

MR CALLAGHAN: There's some correspondence which is attached to it.

COMMISSIONER: All right. It all goes in?

MR CALLAGHAN: Yes.

COMMISSIONER: 395.

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ADMITTED AND MARKED "EXHIBIT 395"

COMMISSIONER: Mr O'Donnell?

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MR O'DONNELL: You were asked some questions about the full supply level, and what document or instruments sets the full supply level and how it can be changed. Mr Callaghan took you to the meeting of 8 February, with Mr Borrows and others from Seqwater, where you expressed some views. It is fair to say that at that meeting that your view was that Seqwater could auger or temporarily reduce the level of the dam under its manual?-- The way I would describe it is that at that meeting, I was aware of discretionary powers that exist for the senior flood operations engineer under the manual, and sought to clarify the extent to which those discretionary powers under the manual could be exercised at this point, and the process that we went through with Seqwater confirmed that they did not feel that they did have the ability to exercise that discretion to achieve any reduction in the operating level if that was to proceed.

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And is it fair to say that, with the benefit of hindsight, you now accept that view by Seqwater as correct?-- I don't have a conclusive view on that.

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Well, when the temporary reduction of a full supply level came to be effected, it was done first by amendment to the Resource Operating Plan - the Moreton Resource Operating Plan - and then secondly by an interim management program under that plan, was it?-- An interim program, yes.

Yes, rather than by anything done under the manual?-- That's correct.

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In fact, the manual wasn't changed?-- That's correct.

So, isn't it right, then, that Seqwater's water, as expressed in that meeting of 8 February turned out to be-----?-- I'm sorry, I'm having trouble hearing you.

Seqwater's view expressed in the 8 February meeting turned out to be correct?-- What I would say is that Seqwater continued to maintain its view that the most effective way to do this was going to be without a variation to the manual, that Seqwater had a preference to undertake this without varying the manual, and given that our primary focus was to make sure that, firstly, we received clear advice from Seqwater about its recommended course of action, and we found an appropriate regulatory mechanism to give effect to it, we were less concerned with which option was pursued, but just more concerned with achieving the appropriate outcome.

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All right. Well, let me take you to some documents then from which I will suggest that Seqwater's view, as expressed in that meeting, was, in fact, correct. Can I take you first to the Resource Operating Plan? That's not in evidence, as far as we can tell, at the moment, but I have copies. Mr Bradley, do you recognise the document as being the Moreton Resource Operating Plan?-- Yes.

If you turn to page 17, please? The page numbers are at the foot of the page. Paragraph 72, "Operating Levels For Infrastructure", and it is subparagraph (1), isn't it? It says, "The operating levels infrastructure for the Central Brisbane River and Stanley River water supply schemes", referring you to Attachment 5, Tables 1 to 3?-- Correct.

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You will find the relevant Attachment 5 at page 91. Table 1 covers the Wivenhoe Dam, and the second item on that table sets the full supply level for the dam at EL67?-- EL67.

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That's right, is it?-- That's correct.

And that is the document that accepts the full supply level for the Wivenhoe Dam?-- As I mentioned earlier to Mr Callaghan, there are two documents that set the full supply level for Wivenhoe Dam: there's this document and then there's also the Flood Mitigation Manual, so both of them specify for the supply.

We might disagree about the manual, but can we at least agree the Resource Operation Plan does set the full supply level for the Wivenhoe Dam?-- Correct.

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Thank you. I'll tender the plan, Commissioner.

COMMISSIONER: Exhibit 396.

ADMITTED AND MARKED "EXHIBIT 396"

MR O'DONNELL: It's right, also, isn't it, that Seqwater operates the dam pursuant to a licence - Resource Operations Licence, in terms of which - you're nodding. I think you're agreeing with me?-- Yes, yes.

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And the licence requires Seqwater to follow the plan in the operation of the dam?-- That's correct.

Now, let's look at the manual, which is Exhibit 21. If we look in the definition section of the manual, I'm looking at page 2, below halfway down the page, it has a definition of FSL, or full supply level, meaning the level of the water service when the reservoir is at maximum operating level?-- Yes.

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Which is including periods of flood discharge?-- Yes.

And there's no definition of maximum operating level?-- Not in that glossary, no.

So, the definitions at least don't set the FSL as 67?-- It's not specified in the definitions there as you say.

There is a reference to that level at page 19. It should be paragraph 8.1. You will find reference to 67 in the second paragraph, and the volume above 67 is available as temporary flood storage. I invite you to take us to any other part of the manual you wish, but I'm suggesting they're the only references to FSL 67 in the manual?-- Just bear with me. I suspect that I won't be able to produce contrary advice in the time available, except to say that the manual throughout, including the appendices, specifies 67 litres repeatedly as the point which flood mitigation strategies would commence.

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I think you will find it specifies 67.25 as the level?--
Well, if you take for instance page 52, there is a reference
to 67 metres there.

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Yes?-- The spillway rating tables, for instance on page 57,
commence at 67 metres in terms of discharge rates specified by
BAY.

Yes?-- The spillway rating curves on the bottom of that page,
commencing at 67 metres. So, I would suggest that's when -
Mr Allen I am sure could comment on this further and more
precisely - but I suggest that that, including - I should have
mentioned first and foremost page 44 table 10.2 the radial
gate opening sequence steps specified, as you say, levels
above 67.25 as being a point for further action in relation to
flood mitigation. So, it seems to me a document that
enshrines 67 metres fairly explicitly within it is the trigger
for flood mitigation.

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It reflects the fact that the FSL is set in the ROP but the
manual itself doesn't set the FSL?-- Well, I think that's a
subjective opinion about whether or not a manual that has
within it 67 metres as the effective full supply level and
beyond which all flood mitigation strategies are executed, has
or has not for all intents and purposes set a full supply
level of the storage. While it might be an issue that can be
argued in the semantics, for all practical purposes this
manual fairly explicitly sets full supply level such that
action is required to be taken by the dam operator to release
volumes of water within seven days above that specified level
of 67 metres. It seems to me a fairly practical process for
defining the full supply level.

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I also am formally putting to you that the document doesn't,
in fact, set the full supply level, it reflects the fact the
FSL at 67 is set elsewhere?-- Well, I would respond by saying
that the ROP that you are referring to - the Moreton Resources
Operation Plan was finalised in December of 2009 and the
Wivenhoe storage has operated with a full and clear
understanding of the need for a full supply level to be
specified and for flood mitigation operations to occur above a
full supply level since it was commissioned. The first manual
of this kind predates the Wivenhoe storage but there have been
successive updates, including the most recent update all of
which are basically managed for flood releases above a full
supply level. So I would respond by saying the ROP post-dates
the setting of the full supply level in repeated documents.

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If I could suggest something else to you. If you look at page
21 of the manual, please. The last sentence on page 21.
"Spillway gates are not to be opened for flood control
purposes prior to the reservoir level exceeding 67.25." If we
leave aside the discretion in 2.8 for a moment, I will come
back to that, apart from that discretion that sentence alone
would prevent Seqwater temporarily reducing the level of the
dam below 67, wouldn't it?-- I think that sentence
explicitly says that the gates cannot be opened for flood
control purposes below that level. I agree with you that is

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what that says. The question is in all of the issues in the manual are bounded by reasonable discretion at 2.8 which you indicated you wanted to leave to a later stage. It is fair to say that I wasn't asserting or I wasn't in my earlier conversations with Seqwater seeking to judge or prejudge what Seqwater's exercise of its discretion under the manual should be. My discussion with them was to try and seek advice from them about what the approach should be to the operating level of the storage and to try and resolve the regularly mechanism by which that would be given effect. So, ultimately that discretionary framework under the manual is something that only the Senior Flood Operations Engineer could have advised on.

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The discretion you are referring to in 2.8. If you look at that for a moment. It is on page 7. Can I suggest that there are two limitations on the exercise of that discretion that would be relevant to whether Seqwater could rely upon it to temporarily reduce the level of the lake to below the FSL. One is the discretion is only exercisable where it is necessary to depart from the manual to meet the flood mitigation objective set out in section 3. See those at page 9?-- Yes.

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The second is that it is only exercisable once a flood event has begun?-- Yes.

Neither of those occurred in the context of the discussions of - around the 8th of February. There was no flood event?-- And the question that was being put at that time was a question about the extent to which the provision of discretion that provides for a flood event would include anticipation of an outlook for further rainfall and whether or not that was sufficient in relation to potential triggering of that discretion. So those issues were subject to an exchange of views. As you've correctly recognised we ended up proceeding with an alternative path because, as I said earlier, Seqwater did not conclude that they were provided with enough flexibility under the manual to implement the reduction in the operating level of the dam.

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COMMISSIONER: Could I ask you, Mr O'Donnell, because I am missing it; what creates the limitation it must be a flood event?

MR O'DONNELL: It is the preceding pages your Honour - Commissioner. If you look on page 5 it is all couched around things occurring in a flood event. If we take 2.2 for a moment, "The purpose of the operation of the dam is during flood events Seqwater must ensure that," then the third and fourth dot points are the Flood Operations Engineer and the Senior Flood Operations Engineer. Then 2.3 sets out the duties of the Senior Flood Operations Engineer during a flood event. You will see that in the third sentence.

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COMMISSIONER: So you are not a Flood Operations Engineer except during the flood event? Perhaps it is a matter of construction, anyway, and Mr Bradley seems to agree with your

construction?-- It was certainly the view, Commissioner, that I've had expressed to me previously by Seqwater so I accepted the premise.

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MR O'DONNELL: And the clause itself, 2.8 is directed to exercising a discretion so as to meet the flood mitigation objective set out in section 3. Those objectives are only for the purpose of managing the flood event.

COMMISSIONER: All right, thank you.

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MR O'DONNELL: The flood event itself is defined on page 2 as a situation where the Duty Flood Operations Engineer expects the water in neither of the dams to exceed the FSL. Also Commissioner, on page 4 paragraph 1.7. Paragraph 1.7, the concluding the words, "and must be used for the operation of the dams during flood events."

COMMISSIONER: It is a question of whether that is exclusive, I suppose, but, as you say, it may just be a matter of context.

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MR O'DONNELL: Yes. Oh, I see, yes, there is another matter. Page 5, paragraph 2.3. If you look at the last bullet point on that page.

COMMISSIONER: Mmm. Can you have flood operations without a flood event, though? Does the manual contemplate flood operations absent a flood event? You'd say not, I gather.

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MR O'DONNELL: No, I don't think it does.

COMMISSIONER: So you can't do things - that would rather suggest that there is nothing pre-emptive you can do at all under the manual at all ever.

MR O'DONNELL: Exactly. Indeed there is a critical statement at page 21, you can't even open the gates until the water level gets to 67.25.

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COMMISSIONER: Well, that's why we came back to 2.8.

MR O'DONNELL: Yes.

COMMISSIONER: All right, thank you.

WITNESS: Commissioner, if I may comment on that. The only emphasis, I guess, I was placing was in that definition of the flood event whereby it says, "The duty flood operations engineer must expect the water level in either of the dams is to exceed the full supply level." So, it is - the advice from Seqwater was they couldn't - wouldn't construct this scenario we were dealing with when we were talking about potentially reducing the storage down to 75 per cent as being a scenario in which they could - they would assume the water level would exceed the full supply level. We were looking at a situation where we - there was a potential for significant additional rain would they take that into account and consider that to be

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a flood event for the purpose then of providing discretion to a Flood Operations Engineer. Their view was no, there wasn't sufficient confidence that there would be an exceedance of the full supply level. To some extent, the expectation of rain can be taken into account in deciding whether or not you are in a flood event in my view, but obviously that is an issued that has to be judged by the operational staff at Seqwater.

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COMMISSIONER: Well, I suppose it is another problem of language; whether you mean that it is going to exceed it imminently or the possibility exists in a wet season?-- Yes.

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It just seems to be another problem. Anyway. Thanks, Mr O'Donnell. I'm sorry to take you off track.

MR O'DONNELL: Thank you, Commissioner. The way, in fact, it was managed, is this right, Mr Bradley, is there was an amendment of the ROP to allow an interim program and then an interim program was, in fact, adopted?-- There was amendment of the ROP to allow for - this is technically complex, sorry - but an amendment of the ROP to allow for an amendment to an interim program which already existed. That amendment was then submitted by Seqwater and approved by me.

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Well, should I - I don't want to be - drag this out but if you look in your witness statement?-- Yes.

Page 11 paragraph 62?-- Yes.

On the 14th of February there was an amendment to the ROP so it produced the paragraph we see at paragraph 63?-- That is correct.

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So the resource operations licence holder, that was Seqwater, under that amendment may submit to you a revised program?-- After that amendment was made that was possible, yes.

Then you say in paragraph 65, "Three days later Seqwater did submit a revised interim program."?-- Correct.

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And jumping ahead to paragraph 68 on the same day, 17 February, you approve that revised interim program?-- Correct.

If we go back to the text of the interim program, it is set out in paragraph 66 and just summarising it, it allows Seqwater between 20 February and end of March to make releases from the dam necessary to reduce the level of the dam to a level below the full supply level. The interim supply security level being defined as 64?-- That is correct.

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Then it operated until the end of March?-- That is correct.

Thank you. Thank Commissioner.

COMMISSIONER: Mr Ambrose.

MR AMBROSE: Would you have a look at Exhibit 21, the File Operations Manual, please? The Manual of Operations. At page 2 the definition of Senior Flood Operations Engineer defines the person designated in accordance with section 2.3 under whose general direction the procedures in this manual must be carried out. If you go to 2.3 it provides for the nomination of a person to undertake the role of Senior Flood Operations Engineer; see that?-- Yes.

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The third bullet point which has previously been referred to you, provides that the Senior Flood Operations Engineer has the role of exercising the reasonable discretion in managing a flood event as described in 2.8?-- Yes.

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If you go to 2.2 the fourth bullet point provides that the Senior Flood Operations Engineer is designated to be in charge of flood operations at all times during the flood event?-- Yes.

Wouldn't that suggest to you that the discretion which might be exercised pursuant to 2.8 is an exercise of discretion during a flood event and at no other time?-- I can understand that interpretation, yes.

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Thank you.

COMMISSIONER: There is some limitations, aren't there, in a flood mitigation manual that only goes into play when something goes wrong, aren't there? In other words, when you have a flood event?-- I think it is - on my understanding of the manual and operation of the dam there is an assumption there that the full supply level - there wouldn't be variation in terms of a dynamic operating level of the dam below the usual full supply level when in anticipation of wet seasons as we all understand. Therefore the manual specifies procedures that would occur once the dam was above its full supply level and has had a high degree of conservatism in wanting to see those flood - temporary flood waters emptied within a seven day period. Characteristically it is only sought to change the operational mode of operators of the dam once there is actually an exceedance of the full supply level.

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I see what it does or it does on this interpretation at any rate, I just wonder, whether that's adequate for what is needed. What do you think?-- That question to me goes to the issue about whether or not there are different operating modes for the storage in terms of should it be operated dynamically in terms of the operating level should be drawn down prior to a wet season and should it be drawn down prior even to a weather event in terms of if you can see a significant weather cell coming should you be able to draw down below full supply level. Partly because of the discussion we just had in this room about what is a defined flood event, the manual will preclude that kind of action occurring, I agree, without - if the engineer wasn't satisfied to the point where that discretion was going to be exercised. But I think whether or not there is merit in pursuing that in policy terms, in terms of the benefits of that kind of dynamic operation at full

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supply level, is yet to be demonstrated. There would need to be significant analysis of the various scenarios which might occur where you may have a significant impact on water security by drawing down in advance of a wet season only to see no significant inflows to the storage over that wet season. Or indeed where trying to operate the dam in a responsive way, in a fine-tuned way during an actual weather event you may, in fact, worsen flooding risk in some areas.

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Certainly it is all risk management but there are two questions, I suppose, whether there should be that capacity and whether that capacity should be incorporated into the Flood Mitigation Manual if it is to exist. The first, as you say, is moot and might require a bit more exploration. What about the second?-- It could be provided in anticipation of the benefits of that mode of operating being demonstrated, but there is also a risk that - and I am conscious I am saying this having just gone through discussion where we talked about the fact that I was challenging Seqwater in discussions to explain the view they had of discretion in relation to the full supply level. Having - even despite having had that interaction, I am of the view that the manual has to provide some clear guidance to the operational staff in relation to a mode of operating the storage that is going to be appropriate given the wide array of permutations and combinations of what might happen in terms of rainfall and inflows of various points upstream, if you like, of the city of Brisbane. So, as we have recognised, the dam can only mitigate 50 per cent of flows that might occur in 50 per cent of the catchment and so trying to - it would need to be demonstrated through good analysis and modelling over a long period of time what was going to be the actual benefit in trying to create that flexibility for operational engineers otherwise it may just be - we may be giving them a power or capacity which they don't have the tools to execute because they don't have perfect foreknowledge of what is going to happen with rainfall and inflow.

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If they did have that capacity should it be reflected in the Flood Mitigation Manual or should it be entirely independent of it? Is it better out of it?-- Sorry, I would expect - it should be reflected in the single document to the Flood Mitigation Manual. The purpose of the manual may need to be augmented then, as you say, because the moment only relates to a flood event.

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Thanks. Is there anything arising out of that?

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MR O'DONNELL: Yes, there is. I think I can do it before lunch.

COMMISSIONER: Sure.

MR O'DONNELL: When you were reducing the lake level below FSL, you are cutting into the water stored for - to meet South-East Queensland's consumption needs, aren't you?--

Correct.

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Seqwater, as the manager of the dam, is not an expert in what water is needed to meet South-East Queensland's consumption needs, that is right, isn't there? There are other agencies which handle that?-- Seqwater don't undertake the water balance modelling which the SEQ Water Grid Manager does where they look at what is the best way of meeting the demand across South-East Queensland taking into account manufactured sources and dam water supply sources. Seqwater aren't expert and don't make those decisions in an operational sense but Seqwater is certainly responsible for being able to meet their supply obligations under contract to the Water Grid Manager and operator of the dams so it can effectively provide water and treated water through the water treatment plant as per the requirements of the grid. So, they absolutely have a responsibility to be able to deliver that function but they don't sit there fine tuning the optimisation of different sources of supply as the grid manager does.

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Let's put it bluntly; the grid manager is the expert. The Water Grid Manager is the expert in terms of working out South-East Queensland's consumption needs and whether a reduction in the lake level of Wivenhoe will or will not pose too much of a risk to meeting South-East Queensland's consumption needs?-- In a long term supply planning sense the Queensland Water Commissioner undertakes that role of projecting forward the future supply requirements of the region and when supply augmentation might be needed. That is why under the Seqwater strategy the QWC strategy that has a regulatory status as a water security program there is provision for Queensland Water Commission and Seqwater to assess the full supply level of Wivenhoe dam that arises from that report I referred to earlier that Seqwater undertook as part of the strategy process in 2007 looking at the full supply level of Wivenhoe Dam.

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And the Water Grid Manager?-- Well, the Water Grid Manager is focussed on a shorter term time frame than that longer term planning frame you are talking about in terms of when the next supply source is needed. The Water Grid Manager is more of a system operator, that is in a kind of day to a week timeframe determining what flows should occur from what sources and how best to optimise the yield from the grid as a whole.

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Can we agree then it is the Water Grid Manager and the Queensland Water Commission which have the primary role of determining Queensland's need for water consumption?-- South-East Queensland's yes.

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If there was a reduction in the lake level of Wivenhoe below 67 whether that would pose too much of a risk in terms of meeting consumption needs either immediately or in the future?-- Look, I think in short that is right in terms of supply capacity for the dam. But that said, Seqwater are the owner and operator of a storage that provides two functions not just one. It provides a function of water supply and a function of flood mitigation so the entity itself should also

have a view about how best to optimise the balance between those objectives.

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That is right, but it is a combination of views of a number of statutory agencies?-- Yes.

You have the Water Grid Manager, the Queensland Water Commission and Seqwater?-- That is right.

When the Minister raised the question of reducing the lake level before Christmas last year he initially sought advice from the Water Grid Manager and the Water Grid Manager in turn got advice from Seqwater; that is right, isn't it?-- That is correct.

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When it was raised again at the end of January and February this year again each of those different statutory authorities was involved in formulating the advice to the Minister?-- Correct.

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We see that in some of the documents. If you look at Mr Burrows witness statement, please.

COMMISSIONER: Isn't this getting a bit off what I was asking?

MR O'DONNELL: No, precisely what your Honour was asking. Wouldn't it be an idea if the manual would allow Seqwater to reduce the lake level below the FSL.

COMMISSIONER: You want to make the point there are lots of people involved in this and it is not a good idea.

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MR O'DONNELL: Seqwater has no expertise in saying if we reduce this level will the Water Grid Manager have enough resources to supply South-East Queensland's needs.

COMMISSIONER: I just don't know that you need to go to documents to make that point because Mr Bradley seems to agree with you that there are other people. If you badly need to do, but dont if you don't really have to.

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MR O'DONNELL: Well, I'll just go to two. When the change came in February this year - if you look in Mr Borrows' statement at PB22 at page 202 - that should be a letter from the Water Grid Manager of 9 February 2010?-- I have that.

And then in the third paragraph, the Grid Manager confirms advice that it has no objection to the dam being drawn down to 75 per cent of FSL, and that's expressed in the next sentence on the basis, "The implications of that drawdown are unlikely to impact our ability to comply with the South-East Queensland System Operating Plan for our grid contract obligations." Then at page 203 comes the advice from Seqwater to you the next day. The first paragraph recites the advice from the grid manager, and then the second last paragraph says, "In light of the Grid Manager's advice to Seqwater, the extreme nature of the event", and so on, "Seqwater recommends the temporary reduction"?-- Correct.

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So, it was a combination of advice from the different agencies which led to the temporary reduction?-- I think what you're outlining is a process where Seqwater took the advice from the Water Grid Manager before providing its recommendation to the Minister that there be a temporary reduction to 75 per cent of the full supply level.

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Yes, and it was appropriate to get the input from the Water Grid Manager, wasn't it?-- Certainly.

It's their water, after all; that's right, isn't it?-- They're the contractual counterparty for that water.

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But they own the water. Seqwater is the shepherd for someone else's flock?-- Well, the grid manager is the customer, and Seqwater is the provider of the service of water supply.

Thank you, Commissioner.

COMMISSIONER: Did you have anything else? Mr Dunning?

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MR DUNNING: We have no questions, thank you, Commissioner.

COMMISSIONER: All right. Mr Murdoch? I'm sorry, Mr Murdoch, I shouldn't be starting you at 1 o'clock on the dot. We'll adjourn until 2.30 and come back to it then. Thank you.

THE COMMISSION ADJOURNED AT 1.02 P.M. TILL 2.30 P.M.

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THE COMMISSION RESUMED AT 2.29 P.M.

JOHN NEVILLE BRADLEY, CONTINUING EXAMINATION:

COMMISSIONER: Mr Murdoch?

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MR MURDOCH: Mr Bradley, the stretch of river 67 kilometres from Wivenhoe Dam down to Mt Crosby has, along its reach, two townships, Lowood and Fernvale, as well as numerous agricultural properties; you're aware of that?-- Yes, yes.

You'd also be aware that so far as the agricultural properties are concerned, that the inundation by fast-flowing water during the events of 10th, 11th and 12th of January caused considerable damage to those properties?-- I understand that.

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And, specifically, the irrigators who had the lawful right to have pumping equipment on the river bank to enable them to conduct their irrigated agricultural activities?-- Yes.

Does the damage that's occurred to the river banks and the equipment which the irrigators had been permitted to erect on the river banks fall within the purview of your Department's jurisdiction?-- My Department is certainly undertaking a role now - because of its natural resource management responsibilities, is undertaking a role in supporting part of the restoration activity that's now underway, and so providing funding towards SEQ Catchments, an NRM body in relation to issues to deal with riparian clean-up and restoration. In terms of the regulatory scope of my agency, the clear instrument that refers to the impact of releases from Wivenhoe Dam and requires an assessment of that by Seqwater is the operator - is the Moreton Resource Operating Plan that provides for an assessment to be undertaken and for reporting to occur after that assessment by Seqwater in order to inform its optimisation of its release practices and strategies from the storage. So, they're the two key areas of relevance, I guess, in terms of my agency that come to mind in relation to that question.

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You've said that an agency - the agency, Seqwater, is to assess damage for the specific purpose that you've mentioned. What about your own Department? Is it conducting an assessment?-- My Department has a general responsibility in relation to natural resource management matters, and is interested in these issues, but the regulatory responsibility for the assessment, in terms of stream bank impacts after significant releases from infrastructure under the Moreton Resources Operation Plan rests with the licence holder - the resource operation licence holder - which is Seqwater, and so that assessment of the contribution of releases from the storage on downstream embankments and the stability of downstream embankments and erosion issues is most relevantly

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undertaken by Seqwater in that role.

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Has an assessment been done by that agency?-- I'm not aware of the progress of that matter by Seqwater, but I realise they will be providing testimony here, so that's best to address to them.

And the actual remediation work which is identified through that assessment, which agency has the responsibility of supervising that remediation work?-- In terms of the contribution of dam releases to that kind of stream bank impact, then I'm not aware that there is any provision for corrective works to be undertaken by Seqwater. My agency is involved in proactively seeking to assist natural resource management groups as they undertake corrective - or rehabilitative works around stream banks and erosion. We've provided approximately - we provide generally about \$780,000 per year to SEQ Catchments. We've provided a further instalment of \$200,000 since this event in order to assist with riparian clean-up and restoration, and I'm aware that the Federal Government has also provided a further \$400,000 to SEQ Catchments to assist with this kind of natural resource management activity. Now, how much of that could be devoted to the relevant land holders that you're referring to is a matter that - would need further advice from SEQ Catchments, the NRM body.

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Well, so far as the individual irrigators are concerned, where their particular property might need remediation work on the banks to enable them to resume irrigating, what's their first port of call? Which agency?-- Well, it would depend on whether or not this rehabilitative work is work that is the responsibility of any party other than the landholder concerned. So, the landholders, unfortunately, suffer the impact of these kind of significant flood events and can be impacted by heavy flows during significant rainfall events at any time, and what our agency seeks to do is support natural resource management groups as they try and assist landholders to deal with the kind of significant erosion and stream bank instability that can arise after these events, but land holders will be best placed then to contact SEQ Catchments as the NRM body who are out in the field doing that kind of work.

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And so far as SEQ Catchments is concerned, do they have the financial capacity to contribute to the remediation work that might be required of individual landholders, so far as restoration of river banks are concerned?-- It would depend on what the nature of the works were and, indeed, whether or not they were works on private property or works within the riparian zone, if you like, with the high bank involved in stream bank stabilisation, but, as I say, one of the things my Department sought to do is provide additional financial support to SEQ Catchments to assist them with the riparian clean-up and rehabilitation program. It initially focused around 50 to 60 kilometres of priority areas within the riparian zone in those areas in the Lockyer Valley particularly.

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So far as the riparian zone goes, that's the actual river and the bed of the river; is that correct?-- That's what I'm referring to, yes. 1

What assessment has your department made, if any, of the damage to the riparian zone in that stretch of river that I describe as the 60 or 70 kilometre-odd stretch?-- Yes, my Department has been working closely with SEQ Catchments around those issues and we're aware of some instances of significant scouring and erosion and stream bank instability, and my offices have been involved in that process. We've involved our staff, both from the regional services division of the department, that are officers involved working out of the regional office, but also our sciences staff, in terms of trying to draw on some of the remote sensing capacity that both ourselves and SEQ Catchments have in relation to those impacts. 10

What's to be done about restoration in the riparian zone?-- Well, as I said, there's a couple of aspects to this: one is obviously the work being done by individual land holders to try and address their immediate issues around stabilising stream banks and preventing further loss where there have been losses in terms of stream banks, but also we're proactively working with SEQ Catchments to fund initiatives that seek to address both riparian clean-up in terms of debris, but also stream stabilisation works. Some of those significant engineering works that might be required in relation to the impacts of those heavy flows would be quite substantial, and so this first round of funding and this first set of programs by SEQ Catchments is endeavouring to provide the kind of first line of response in terms of stream bank stabilisation. 20 30

How much is involved in the first round of funding?-- As I said, we provide about \$780,000, I think, from memory, to SEQ Catchments this financial year. We've given them a further \$200,000 initially in relation to assisting this program. The Federal Government has given them \$400,000 also as an instalment, but we're also considering other avenues of funding should it be required to assist with this kind of NRM activity. 40

In the manual for operational procedures for flood mitigation at Wivenhoe and Somerset Dams, there are requirements for the operators to - at stages 1 and 2 - pay regard to the low level river crossings below the dam. I take it you're familiar generally with that requirement?-- Yes.

And that requirement seems to have rolled on through the various emanations of the plan?-- That's my understanding. 50

Are you aware whether there is any State Government plan or proposal to perform works on those low-level crossings so that the crossings would, in the future, cease to be a variable that had to be taken into account by the dam operators when they need to have controlled releases to bring the level back to the required level?-- I'm not aware of any existing analysis being undertaken around that issue specifically. It

is the kind of thing that could be accepted as part of an optimisation study of the kind that Seqwater have proposed that was being referred to earlier today, but as per Minister Robertson's testimony with the Commission, that would deal with an infrastructure impact of release strategies, but wouldn't itself deal with the environmental and stream bank scouring impacts of various release strategies. So, you would probably want to consider not only an infrastructure solution to allow more flexibility in terms of those releases at earlier stages in the dam operation level, but also be able to assess the potential risks of erosion from different operating modes or changes to the early stages of the dam release strategy.

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Yes, I understand that, but is the answer that that approach, that engineering approach to reducing one of the factors that the operators have to take into account, that's not occurred?-- Not to my knowledge. I'm not familiar with any work done in that regard. Mr Allen - Peter Allen - the dam safety regulator - may be able to comment, but, as I say, it would be an issue that would require more than just a consideration of infrastructure solutions if we were to consider changing the release strategies at earlier stages in the flood mitigation response under the manual.

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If there was merit in a proposal to engineer out that factor by lifting the height of the crossings, that would properly be a matter which would be taken forward by your Department?-- Well, it would be a matter that I expect my agency may have an involvement with, but the primary function of considering that would be whether or not it provided a benefit in terms of the flood mitigation over the dam, and so in terms of the assessment of whether or not it should be pursued - I guess that's what I was alluding to earlier - it would need to be considered as part of a comprehensive assessment of any change to those strategies within the Flood Mitigation Manual, rather than considered in isolation, and then the issue of where the cost would fall in terms of the cost of that infrastructure upgrade would be another matter again. My Department doesn't typically undertake works in relation to transport infrastructure.

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But on that approach, doesn't it go round in circles, because the manual requires the operator to take into account the crossings in their current state, and it's beyond Seqwater, isn't it, to do anything about those crossings?-- The way I put it is that the kind of review that can be undertaken after a significant flood event in terms of the manual can include consideration of any additional flood mitigation capacity or function that may want to be considered, and then if that kind of assessment is going to be undertaken, then that might be an assessment about issues not only to do with the full supply level of the dam or additional infrastructure responses to increase the flood mitigation capacity of the dam, but investments in, as you say here, infrastructure solutions in terms of transport that can mitigate the impact of early modes of operation in terms of dam releases and, therefore, allow more releases to occur at higher rates at earlier stages above

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the full supply level. So, I guess where I'm going with that is that what it is - what all those options are is the investment in flood mitigation capacity, and they should be considered on an equivalent basis for the dollar invested in achieving that outcome for the community, which leads me to the view, as I was expressing earlier today, that those trade-offs between flood mitigation functions and water supply security need to be considered in a comprehensive process involving Seqwater and the agency responsible for advising on water security, which is the Queensland Water Commission.

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Fortuitously, lifting the height of the crossings wouldn't have any bearing on water security, would it?-- That particular scenario you're talking about I don't expect it would, but it would depend on what was proposed.

So far as the manual for operational procedures for the two dams is concerned, do you categorise that as a suite of operating procedures for the dam operator?-- Yes.

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Is there a risk management plan for Wivenhoe Dam?-- My understanding is that there is, but I can't speak to that in detail. The - I am aware that the SEQ Water Grid Manager coordinates a whole-of-grid risk management framework whereby individual operators, including Seqwater, prepare - or manage their own risk management planning within the context of a whole-of-grid response. That's more about the vulnerability to the grid if one particular asset or one supply source is unavailable, so it needs to be coordinated from a whole-of-grid response, but I'm aware through that process that Seqwater does undertake its own risk management planning separate to the manual.

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Well, is there, to your knowledge, a document which is a risk management plan for Wivenhoe Dam?-- I'm not aware of the precise title of that document. I would expect that there is, but I couldn't say that definitively.

Thank you.

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COMMISSIONER: Mr Rangiah?

MR RANGIAH: I've no questions, Commissioner.

COMMISSIONER: Ms McLeod?

MS McLEOD: No questions, thank you.

COMMISSIONER: Mr MacSporran?

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MR MacSPORRAN: Thank you, Commissioner. Mr Bradley, just one matter: you were asked some questions about the references in the manual to the full supply level of the dam - Wivenhoe?-- Yes.

Could I take you to that manual, Exhibit 21, and could you go to page 19, please?-- Yes.

Section 8.1, in the second paragraph of that section-----?-- Yes.

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-----is that a reference that - or one of the references you were referring to in your evidence?-- It's one of the references I was referring to.

And that's a reference to 67 metres?-- That's correct.

That's all I have, thank you, Commissioner.

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COMMISSIONER: Thank you. Mr Callaghan?

MR CALLAGHAN: There was one matter I overlooked, Mr Bradley, that I did want to ask you about, and that was in relation to the Harlin reach of the Brisbane River where certain permits have been granted to extract gravel; are you aware of that?-- Yes.

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And, specifically, whether there's been any monitoring as to the detrimental effect to the bed and banks of this part of the river due to that gravel extraction. Has your Department been monitoring that?-- My Department has men on site and inspected issues raised in earlier testimony before the Commission. That meeting occurred in March. Yes.

And are you able to update us, if you like, on the status of the monitoring that you're doing?-- In general terms - and it is an operational matter, one that I don't have close detail for - but, in general terms, my understanding in relation to that matter is the officers on site couldn't see evidence of impacts of scouring and erosion being exacerbated by the operations of the quarry, the kind that were of concern to the other witness, and that wasn't apparent through their inspection. There was an issue raised in relation to assertions of quarrying beyond licence permits, and my Department has given an undertaking to undertake an investigation in relation to that aspect, which is, as yet, underway. So, that's the situation as I understand it.

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Thank you. I have nothing further. May the witness be excused?

COMMISSIONER: Thank you, Mr Bradley. You're excused.

WITNESS EXCUSED

MR CALLAGHAN: I call Peter Allen.

PETER HUGH ALLEN, SWORN AND EXAMINED:

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MR CALLAGHAN: Could you tell the Commission your full name and occupation, please?-- Peter Hugh Allen. I'm a civil engineer with the Department of Environment and Resource Management.

Mr Allen, you have prepared a 54 page statement with attachments for the purposes of the Commission; is that correct?-- Yes.

Can I show you that, please? That's your statement and attachments?-- Certainly looks like it.

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I tender that.

COMMISSIONER: Exhibit 397.

ADMITTED AND MARKED "EXHIBIT 397"

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MR CALLAGHAN: Mr Allen, I want to give some prominence to the issue of North Pine Dam, so we might start with that, because for all the attention that Wivenhoe is receiving, you find that, from a dam safety perspective, the flood event at North Pine Dam was more serious than that which occurred at Wivenhoe-Somerset; is that right?-- That's right, from a dam safety perspective.

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Yes. And you outline the science of that, I think, in paragraph 149 of your statement?-- Yep.

And the point you make is that you - there may be some serious inadequacy in the spillway there; is that right?-- Potentially. It's really a case of - there's a mismatch in the head waters versus the discharge, and that just needs to be investigated.

Yes?-- The head water relation - or the head water levels were equivalent, from a design flood point of view, of somewhere between about a 1 in 5 and 1 in 10,000 year level, and the discharges were somewhere of the order of 1 in 200 or thereabouts. So, that mismatch does need to be explained.

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And that is something that's being reviewed; is that correct?-- Yes, we have received a proposal from Seqwater now that they'll have most of that work done by the end of June.

Okay. I was just going to ask you about that, because I think we've got some notes of yours up until the middle of March, at least, but it has obviously been a work in progress since then?-- Yes.

And that's the update, is it, that there be a-----?-- Yes, there's a number of issues they need to address. One is the rating of the gates at extreme gate openings. They got up to about gate settings 20 and 21 in the last event - out of 23. So, there may be some problems associated with the discharge ratings of those gates. There may be some problems with the hydrological modelling to produce that - you know, so there may be some problems in the storage capacity curve up at that top end which may produce some of those types of errors. Now, I've heard back from Seqwater informally that it can still accommodate about a 1 in 10,000 year flood event, so there's no risk to the every day dam safety of North Pine, it is more in relation to the big events that will occur.

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All right. In the meantime - and for that matter at all times - when it's at full supply level, there's - it offers little in the way of flood mitigation; is that correct?-- Yeah, that's right. It was never built with flood mitigation as a primary function. It was really a case of - it was there for the water supply and the flood mitigation was incidental. I mean, in the last event, it had - it achieved an outflow about 80 per cent of what the inflow was, I understand.

You say it was never built for it. I think I understand what you mean. That wasn't it's objective when it was built?-- Yeah, that wasn't its primary focus.

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There's nothing about the way it's built which prevents it from having a flood mitigation capacity?-- Well, it's tied up with the amount of storage it's got available to temporarily store floods.

That just depends on where full supply level is set; doesn't it?-- Well, yes, but it also depends on where the crest is and things like that, so it is all interrelated. So, you would require a heck of a lot of work on North Pine to provide a significant degree of flood mitigation. The magnitudes of the floods are such that you could reduce the head water level, I suspect, down a fair way without significantly improving the flood mitigation potential for North Pine.

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Is that because it's relatively - compared to the Wivenhoe-----?-- Well, it is relatively small compared to the incoming floods.

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All right. The manual does provide an operation strategy with flood release objectives - the manual, which is Exhibit 29 - the North Pine manual - at 8.4. Can you see that on the screen in front of you?-- Hopefully it's coming up.

If we can get 8.4 up?-- Yes.

The flood release objectives are listed there, and it's observed that North Pine Dam effectively has no significant provision for flood mitigation, and - once the dam is full - ensuring the structural safety of the dam is paramount. Accordingly - and you can read what follows there, and I'm interested in the phrase that says the object is to ensure that outflows don't exceed inflows?-- That's right.

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So, if there's more flowing in than is flowing out, the dam level will necessarily rise, will it not?-- That's right - at the time, but remember that you have got a full hydrograph there and the hydrograph will peak at some stage. You just can't sustain that for huge periods of time. So, it will peak, and then once it starts to - the head water level starts to fall, you will inevitably get more discharge than what's coming in. What you try to ensure is that the maximum discharge doesn't peak above the maximum inflow.

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Depending on the timing of it or depending on the level of the dam when the event starts, pursuing that policy will necessarily mean, won't it, that the dam will overtop?-- No.

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Or it could?-- No.

If more is flowing-----?-- If it persists.

Yes?-- -----but these events are finite events.

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Well, we like to think so?-- Yes, at the intensities you are talking about they are finite events. If you look at the Bureau of Meteorology probable maximum precipitation standards and guidelines they are finite events so what you are trying to do is to pass that finite event through the storage. What North Pine can't do at the moment is handle the probable maximum flow. It is on the government's program to upgrade its spillway capacity at some time in the future. Now, at the moment on what we understand before this event, it was lined up to go before 2025. However, once the current investigations are done that will have to be reviewed to see if it has to be done early.

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While we have the manual there can I take you back to page 16? Sorry, page 19. It is just a little further down in 8.4, three bullet points, the first of those is, "Subject to the provisions of section 2.8 prerelease of water is allowed to reduce the risk of dam overtopping." When is that provision engaged?-- When the Chief Engineers request it to be engaged. It is under the discretionary rules.

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So that's just a discretionary matter?-- Well, it is section 2.8.

Section 2.8? It is said to be subject to 2.8?-- Yes.

They have to attempt to get-----?-- If they were seeking to vary the operational rules they would seek approval to do that from the Chief Executive.

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Is there any guidance, though, as to when prerelease of water might be a strategy that is adopted?-- Whether you prerelease water or not depends - whether you get a benefit from prereleasing water or not really depends on the incoming event. At North Pine you would typically get some benefit of prerelease, it is just a matter of the magnitude of it so it really becomes a matter of balancing whether you hold the water for a water supply security perspective versus the flood mitigation or the flood operations procedures. So it is a balance on that.

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All right, is that a balance that is required to be performed by - well, who is contemplated as performing that balance for the purpose of that provision in the manual?-- The duty engineers would have to identify it was necessary first.

Which is a safety question?-- Yes.

Then they have to balance that against water security issues?-- If it is going to be a dam safety issue they would preferably get rid of the water without any recompense to the water security issues. If they are in the middle of a big flood you have to handle the flood first and worry about the water supply afterwards.

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It is talking about a prerelease of water. Does that tend to suggest it is something that happens before the flood starts?-- Well, it might happen during the flood. You might be prereleasing ahead of what the schedule of gate releases say.

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In anticipation-----?-- If you had a fair dinkum forecast that was, you know, one you could rely on it would certainly be a consideration but, I mean, I don't envisage - it has never been used to date. I don't envisage that North Pine would necessarily have to use it. I mean, up until the last round of - back when we did the flood hydrology for North Pine in '92 it could handle a PMF with one gate out so it wouldn't have been needed up to that time.

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It was obviously thought relevant enough for provision to include-----?-- Yes.

-----it in the manual at some stage?-- Yeah, I mean, just because it is in the manual doesn't mean it is going to be used.

No?-- It is potentially there to be used.

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Yes. Is there any equivalent provision in the Wivenhoe manual?-- There is the 2.8 in the Wivenhoe as well.

2.8 which talks about reasonable discretion?-- Yes.

What you have to do if you are going to do-----?-- That would come under the same.

All right, but it is the phrase prerelease of water, I suppose, which excites my attention. Is there any comparable-----?-- There is nothing necessarily in the Wivenhoe one that reflects that prerelease strategy.

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I am guessing but might that have something to do with the fact there is such little flood mitigation capacity in North Pine that concept-----?-- I can't remember the specifics as to why that was included but that could well be an explanation for it.

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That is, as we have discussed, the only way you could get any flood mitigation capacity in North Pine is to make a bit more space available. You make the point it is not going to make much difference-----?-- No.

-----given the size of the dam. Now, we know that there was discussion about a temporary reduction in the full supply level of Wivenhoe, Somerset, North Pine dam I think

between October and December last year. You weren't consulted about any of that, is that correct?-- No, I only found out that was going on a couple of weeks ago.

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On the other hand, you were involved, to some extent at least, in the discussions earlier this year which led to the level of Wivenhoe being reduced to 75 per cent; is that correct?-- I was involved in the discussions. I didn't participate in the decision at all.

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One of those discussions took place on the 1st of February 2011. You were present, it would seem, at a meeting with a number of people, including Mr Burrows, the CEO of Seqwater and Mr Bradley the Director-General who was on the telephone. Do you recall that meeting?-- I vaguely recall. I can't remember exactly what went on. If you can provide me with some help in that regard.

I think - I suggest you have your material there, there is a note at PAll; a series of notes I should say. These are notes made by you?-- They are my scribblings at the time. I must admit I didn't play a forefront role in the whole exercise so my notes were very limited at those meetings.

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If you flick forward there is a note headed "Water Meeting 1/2/2011"?-- Yes.

Your note there at the very bottom of that you have recorded, "Seqwater see their role as an advice role," it seems to be "not a recom role for a preferred policy adoption." See that?-- That's what I would have noted. That would have been something Peter Burrows had said, I suspect.

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Can you just elaborate on that a little for us? What does it reflect? What aspect of that meeting does that-----?-- Well that would have just been from me, purely a note to the effect that is what they see their role as, advice role.

And an advice role and not what?-- Well, not a decision role or something like that. That's obviously what must have been referred to when I wrote that down.

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There was also a debate to you - at this meeting, I would suggest to you, about the - what was authorised by the manual, whether the manual could authorise a reduction in the full supply level be it temporary or permanent. Does that ring a bell?-- There was a lot of discussion on that over the time but it was more a matter that the manual authorising a reduction like that just - it wasn't applicable to the manual, it was an operational procedure.

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If I can show you an exhibit to Mr Burrows statement, PB17 which is at page 140. These are notes taken by Mr Pruss of the same - at least of a meeting on that day?-- Mr Pruss, yes.

They record some discussion about the interpretation of the manual, specifically parts 2.9 and 7.4 of the manual. Looking

four bullet points up from the bottom, Mr Burrows, it seems, suggested that the manual did not invite comment from the operators on the policy questions involved. Mr Bradley seems to have suggested that was not his reading of it. Then you were asked for your opinion; is that right?-- Apparently, yes.

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Well, I will give you a chance to read it?-- Yeah, we were talking about the prerelease from these notes and, you know, it is not something post an event to say what would have happened if.

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That's not what I am getting at?-- Mmm.

It is just a question of we are now talking about the 75 per cent reduction which was proposed in February and whose decision it was, in essence. That's what is of interest at the moment. You seem to be recorded as saying that it simply wasn't a matter for Seqwater, that it was, in effect, out of bounds; is that right?-- Well, I don't interpret or I don't remember saying anything like that. What effectively it is is that it is not part of the manual to prerelease in that fashion. I mean, I didn't make the decision to reduce it down to 75 per cent.

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I understand?-- I don't know that I would have because the forecast for the coming months was only 50 per cent chance of above average rainfall. So, you know, it is, yeah - I don't know I can comment further.

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All right. You can't comment on what you are recorded as saying, that not traditionally asked for any analysis on prereleases or questioning of FSL. I mean, that would tend, I suggest to you, to read that you were saying that Seqwater was not traditionally asked for those things?-- No, I don't know whether the report that - the clause requests a report, it might be a report on the flood event.

Yes, it is talking about the clause in the manual which requires a report on the flood event?-- Yes.

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Certainly?-- Now, are they talking about that report or what? I don't know. What - I don't think prerelease is necessary a role for the operators. It is to be sorted out at a fairly high level, I suspect.

That is what, I suggest, you appear to have said at that meeting?-- I don't think it is a role for the operators necessarily to prerelease.

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All right?-- To determine if it is necessary.

Well, let's turn to the manual itself. As we know, Mr Bradley is empowered by statute to approve the manual but he delegated that task to you; is that correct?-- Yes, I have that delegation.

I am talking specifically now about the Wivenhoe manual.

Where does that then leave Mr Bradley to your perception. Does he have or someone in his position have any role in the oversight of how, when you go about doing that?-- I'm sure Mr Bradley can take over whatever role he likes. He grants me the delegation. If he wants to take back the delegation it is up to him.

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I understand that. Assuming he doesn't want to take it back, assuming he is quite happy for you to actually do it, does he retain any overarching, sort of, role in the process?-- Not necessarily. If you have the delegation to make a decision you can go ahead and make that decision.

10

Would you involve him at all once the-----?-- If there were major changes to the manual, yes.

On any other occasion?-- If it is - the manual itself has been an evolutionary thing. It has been going since the first version I am aware of in 1980. The main features of the manual have been there for quite a while and they have stood the test of time. They have realistically just been minor changes. Most of the changes each time there is a change in manual have been changes to the name of Seqwater or the names of organisations, people within the organisation, things like that. There have been very few fundamental changes to the strategies. That is not to say they have not necessarily been needed and certainly, you know, it needs to be reviewed after the January 2011 event. That is why we rely on the manual that a flood event report be produced at the end of each event. That is all necessarily reviewed and this Commission has taken part of that role over. That is not to say I won't have to do the same thing, anyway.

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You have been involved in those processes over quite some period of time; is that right?-- I have been involved as a decision maker since the 2003/4 manuals. I have been using the manuals for quite a while.

Yes?-- When I was Senior Flood Operations Engineer back in the 90s I would have been using the manuals.

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You were the one who prepared the document, the DS 5.1 Flood Mitigation Manual For a Dam which is the document which provides a framework for assessing the manual; is that right?-- Yes, I prepared that not so long ago, actually.

That's Exhibit 391, we might get that put in front of you?-- Yes. The existing Wivenhoe Somerset manual wasn't done in accordance with this.

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Because this was done-----?-- This post-dated that.

After?-- Yes.

That is right. But, any future one would be assessed, at the moment at least, in accordance with this; that is right?-- Yes.

If we look at step 2 on page 4 where it requires action officers to conduct the detailed assessment having regard to matters outlined in any relevant guidelines, what are the relevant guidelines that we are talking about there?-- They could be, you know, any relevant guideline pertaining to it. Certainly in this instance I would expect the acceptable flood capacity guidelines to be considered or the outcomes of that.

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The what?-- The acceptable flood capacity guidelines.

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The acceptable flood capacity guidelines?-- Just as to how they impact on the manual might be, you know, sometimes not a very close link.

Well, if a manual was to land on the desk of someone in DERM today and they were required to approve it or otherwise, how would they discover which guidelines they had to have regard to?-- I would expect them to be suitably qualified and experienced to do that assessment.

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So it would be-----?-- Most of the guidelines and things like that in the business, if you like, the dam business are relatively well known.

So they would just be known by the person because this task would fall to someone-----?-- Yeah, you wouldn't give it to anyone to do.

No, it has to be someone who is delegated?-- Yes.

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But, in any case, it is a self-assessing exercise, it would be left up to the person who held the position?-- Yeah, I dare say the reality of these approvals, though - I know for instance with the Wivenhoe Somerset ones and, you know, we get involved from virtually day one.

You get what, sorry?-- We get involved from day one. We know what is going to be proposed to us. We sit around the table with Seqwater and talk through a lot of those issues. That's not to say when Seqwater submit it to us that we blanketly accept it. That's not the case but you know, we have sent a couple back to Seqwater over the years to say, "We want changes here and here," for instance.

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If you go to attachment C of the document. You may be aware we have already discussed this provision today on page 1 of 8. It says, "The aim of the flood mitigation manual is to give the dam owner indemnity for flood release operations," and so on?-- Yeah, perhaps a poor choice of words for that but no, the primary reason for the flood mitigation manual is to control how the dam is operated in flood events.

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All right?-- On a people basis largely.

Given the legal consequences which might flow from compliance or non-compliance with the manual, was thought ever given to getting legal opinion or any input from any legally qualified person before it was approved?-- We have had a legal person

attached to our group for a long time.

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Sorry, your group being?-- Being the Dam Safety Group at AWSR in DERM and to - I'm sure of - we have raised certain issues with, you know, certainly all our procedures have been through those people. But whether there has been legal review of the Flood Mitigation Manual I couldn't be sure to say. Certainly it has been discussed with those guys but realistically it is an operational manual for the engineers operating the manual. As long as they totally understand what is there. I am quite happy have some legal review of it but the challenge is finding a lawyer who knows something about dams. No realistically, that has been a problem for us. It has been a real problem for us because the two groups talk differently.

10

Sure. You would foresee it as being possible, though, for a lawyer to be meaningfully engaged in assisting in the exercise?-- In hindsight perhaps, yes.

Well, we are looking forward?-- Well, no, that's what I say. I am quite happy to have a legal person review it. Now, the other challenge though, is that there are no penalties in the Act for non-compliance with the manual and things like that.

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That is an interesting concept and I think you pointed that out in your statement or someone did. It is - it provides immunity but there is no sanction for non-compliance as such?-- No, that is right.

Still in attachment C on page 3 there are four bullet points there under the flood mitigation objectives?-- Yes.

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Where did they come from?-- They would have been drawn - you know, we develop this manual, we had a model manual, if you like, to develop the procedure to. Now, we were looking at where would other manuals come from. We certainly had a model manual in terms of the North Pine and Wivenhoe Somerset ones. We were saying, you know, is there a reason in the manual for this and if there is, yes, we will put that in the requirement in the guideline check list or the procedure check list.

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So they are the ones that already existed, aren't they, in the existing Wivenhoe manual?-- They are the ones but looking at them they are logical.

Sure, but I am just looking at what happened here. You were writing a document on how to approve a manual?-- Yep.

You have got the existing manual which contained objectives which the engineers involved in the writing of that manual had set for themselves; is that right?-- Think about it more in this way; this is a manual that has evolved successfully for nearly 30 years.

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Mmm?-- And it has stood the test of time over that time. Certainly in this event it is a much bigger event than what we have had in the past and, you know, much bigger than the '74 floods, at least upstream of Wivenhoe. So, you know, if we

can learn from this whole exercise yes, let's review them as part of this approach.

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All right. Paragraph 40 of your statement, 40(b) you are talking about the consultation processes which were involved?-- Yep.

Prior to the approval or prior to the - sorry, in the processes which were involved in the formation of the manual, that was a factor to which you had regard when you approved it; is that so?-- Yes.

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Did you actively do anything to - I will start again. What were those consultation processes?-- We have been doing this consultation for, I suppose, about 20 years.

When you say "we had", that is what you were doing when you were part of the-----?-- Yeah, I have been involved in this process for quite a while. I know most of the players in the game and you certainly don't, you know, you question those things all the time. When you go and talk to the people in Seqwater, the people in Brisbane City Council, I know John Debaldi, I think, has put some attachments in his statements as to some of the minutes from some of the meetings so they are consultation proceedings in a number of avenues. It may not necessarily be a formal lied consultation process.

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Mmm, so it was just your inherent knowledge of these things more than any specific-----?-- That and talking to the people in Brisbane City Council and things like that. They know what the provisions are and the rules, in the guideline or in the manual. They certainly get copies of the manual, we haven't had any complaints against the manual to date.

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I was going to ask you about that. That is another point you make. You say, "Well, there was no adverse comment from anyone, any of the councils after the manual was distributed." What would the forum for such comment be?-- I suggest they just write to us or ring us up.

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Was any feedback invited from them?-- Not necessarily but I hadn't got any indications they had any problems with any parts of it. That was before the event. Now, I haven't heard anything back since the event but I am quite open to take those sorts of things into consideration.

At 40(c) you observe that there were no inconsistencies, you hadn't been advised of any - I will start that again. Seqwater had not been advised of any inconsistencies with relevant government policies. What would the relevant government policies be?-- Things like the South-East Queensland Water Strategy and things like that, that talk about, you know, the full supply level of Wivenhoe. You have to remember when this decision was made we were just coming out of a major drought so there was very little tendency to push for any prerelease at all. In fact, it was only last October that there was still mentions in Parliament of raising the full supply level of Wivenhoe which I was fairly

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well against without a lot of, you know, study and working out
how to do it.

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Were there any specific flood mitigation policies that you had in mind when you were drafting-----?-- No, there's very little that I'm aware of in terms of the flood mitigation policies around Australia.

That's so; isn't it?-- I believe so.

In fact, you did have some views on the manual as it was submitted to you or to DERM and Mr Guppy, who works with you, had some views also; is that correct?-- I think you're talking about back in 2006/07?

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No, I don't believe so. The latest revision of the manual was something about which you and Mr Guppy expressed some views in late 2009, I believe?-- Certainly there's usually a fair bit of, you know, toing and froing.

Yeah. And there were some E-mails exchanged. I think Mr Guppy sent them to you and you on forwarded them to - excuse me for one moment. Yes, October 2009 there was some communication between yourself and Mr Tibaldi by way of E-mail. The best thing to do might be to tender, at this stage, the statement of Mr Ron Guppy and get you to have a look after it's tendered.

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COMMISSIONER: That statement will be Exhibit 398.

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ADMITTED AND MARKED "EXHIBIT 398"

MR CALLAGHAN: Exhibits JB17 and following. 17 is an E-mail from Mr Guppy to you, 18 is the E-mail from you to Mr Tibaldi, and 19 is the attachment to the E-mail?-- I remember sending the E-mail, but it was more on - we were trying to come to a common understanding as to what was involved, I think.

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Well-----?-- I'd have to-----

There were some specific suggestions by Mr Guppy about various things which you've onforwarded to Seqwater, and what I might do is show you another document, and this is just a summary document that's been prepared of suggestions made by Mr Guppy on the one hand, juxtaposed against the manual as it was approved on the other?-- Yes, there's - well, there's been some debate amongst ourselves as to how much notice you take of weather - the forecasts and things like that.

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Sure. We'll do it one step at a time. First of all, do you agree that summary appears to be an accurate reflection of the things which were suggested by Mr Guppy and the place in the manual where those suggestions were not adopted, if you like?-- It's a while since I've read this, so, you know, I'd - it may well be reasonable.

I'm going to tender the document so that it's available for reference.

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COMMISSIONER: What's it called? A summary of?

MR CALLAGHAN: Summary of Mr Guppy's suggestions, I suppose.

MR MacSPORRAN: Commissioner, might I have a copy of that? I understand it was distributed at lunchtime. I don't seem to have picked up a copy. Could I just have a look at a copy?

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MR CALLAGHAN: It was distributed at lunchtime, but I think a few people are missing a copy. We'll do what we can.

WITNESS: You should have distributed a copy to me.

MR CALLAGHAN: Well, it was sent to your lawyers for that purpose. What I'm suggesting is that a number of comments were made by Mr Guppy, which you onforwarded to Seqwater which were not adopted by them, but you approved the manual in any event?-- A lot of it will come down to the understanding - I remember discussing at a great length - you'll note that some of my comments are there talking about is the water level greater than, you know, 68.5, and what was in there was, "Is the water level likely to exceed 68.5?" So, you know, I mean, we came to a common understanding as to those sorts of things and I was prepared to accept that.

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The common understanding being one that you came to with the-----?-- Operators.

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Mr Tibaldi and-----?-- The operators.

All right. And would that have been a process of dialogue over the phone?-- That would have been, yes. I don't know how much record there is of that.

There's obviously been a long history of professional involvement between you and the operators?-- Yes, I've known them for quite a while.

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And no suggestion is being made about anyone's professionalism in the question that follows, but can you see some merit in the suggestion that someone occupying your position of approving a manual should enjoy a high degree of independence from those who have prepared it?-- Yes, but I - well, I certainly think that I am independent of those guys. I play no part in the role of the operation of the dams.

No, but-----

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MR O'DONNELL: No, no, shh.

WITNESS: But you do need to understand how the dam would be operated to understand what is in the manual and to understand what a word or a phrase in the manual means.

MR CALLAGHAN: No argument with that. And is your point - and

I'm guessing - is that there aren't that many people around who would have that understanding?-- Probably not.

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All right. Now, you're aware that the whole process of drafting the manual is something which is very much up for review?-- Yes, that's a requirement of the flood manual.

And there is - I'll announce, Madam Commissioner, a document which is being prepared which we hope consolidates a number of suggestions which have been made from various sources, including, for example, Mr Babister, who is a witness to follow, and others, and rather than get each witness, in the course of the hearings, to comment in evidence on the benefit or otherwise of the suggestions contained in this document, it is proposed to circulate the document to witnesses such as Mr Allen, Mr Babister and other witnesses who would be in a position to comment on it, and to receive the comments in documentary form so that the Commission can be guided in that way. So, on that basis, Mr Allen will be getting a form like that.

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WITNESS: Yes.

MR CALLAGHAN: I'm sure you'll be happy to contribute to the process in that way?-- No worries, yeah.

On that basis, I have no further questions.

COMMISSIONER: Thank you. Mr O'Donnell?

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MR O'DONNELL: Could I ask you, firstly, some questions about your experience. I see from paragraph 4 of your witness statement you were involved in the initial design of Wivenhoe?-- Yes.

Is it fair to say that you've had a long history with that dam?-- Yes, I started out as a graduate engineer and one of my first jobs was the design of the radial gates, which didn't have any problems in my career, for those interested.

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And you were the senior flood operating engineer for Wivenhoe Dam from 1996?-- Yes. Before that, we were involved in a complete review of the - all the hydrology and the hydraulics and the developing of the model - of the tools that we used in the real time flood model as part of some studies between about 1991, I think, and 1994/1995. Then there was a tender process when State Water Projects, who I was with at the time - which was a precursor to today's SunWater - won the tender to operate the dams. That then proceeded and I was the senior flood engineer until just after the February 1999 event, because I'd changed camps in the intervening time, and I then worked for the Dam Safety Regulator.

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You were the senior flood engineer during the 1999 flood?-- Yes.

So you managed that flood?-- Yes.

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And then after that you were removed from an operational role?-- That's right.

And you've had no operational role since 2000?-- No.

And in 2002, you were appointed the Dam Safety Regulator?-- Yes.

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And in that role, you sit independent of those who manage the dam during flood events?-- Yes.

Is that right? And you told my learned friend that you regard yourself as independent of the flood engineers that managed the January 2011 event?-- Yes, they make their own decisions. I come to my own assessments.

Right. Do you feel you can impartially comment on the management of the January 2011 flood event?-- That's what I have to do.

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Have you reviewed the Flood Report?-- I have read it. I haven't read it in minute detail at the moment, but that will be my role. I'll have to become totally familiar with it. As part of my role, I've been occupied doing other things, preparing for this hearing, and things like that.

Can you tell us, from your experience, what challenges did the January '11 flood event pose for the management of the dam and the management of the dam in accordance with the manual?-- It was a very complex event. The first peak was handled well, from what I understand. I know I was rung by the flood engineers on the Monday night to talk about, you know, can they hold it just above '74 if it gets there without going into Procedure 4.

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Just pause us there. You will lose us all. You mentioned the first peak. Can you identify what that is? Could Mr Allen see the Flood Report, please, opened at page (iv) in the Executive Summary? I'm at (iv) at the moment?-- (iv).

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You have to remember you're talking to non-engineers here, including lawyers, who are interested in dam management?-- Yes, right.

So, the first peak is?-- The first big peak was there. That occurred, really, between - you know, around about the 10th to the 11th.

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You're looking at the dark blue line?-- The dark blue line.

In that figure on that page?-- Yes, and that was - that's the inflows into the reservoir. You will see that it peaks about 10,000 cubic metres per second. By comparison, for instance, the '74 flood peaked at about 5,000 or 5,100, something like that. So, it was a much bigger event than the '74 flood. Then the - you will see that the dam outflow was increasing

over that time - that's the light blue line. So, you know, once that event dropped down towards 4,000 cubic metres per second, you could well say that they had control of the event.

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What do you mean by that? Who is "they"?-- Well, the flood engineers. You know, they were thinking about, you know, if - you know, that second peak hadn't have occurred, they would have said, "All right, how's the best way to drain that storage, you know, causing minimum problem all around?"

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What do you mean by they had "control" of the flood event. Explain that, please?-- Well, the flood had peaked coming in, they knew the magnitude of it, they knew what they had to control. So, they - they really knew that that's what they had to deal with, so they had it totally under control, I dare say, at that time. The problem came with the second peak, and you will see that those peaks - those peak inflows are very rapid peaks. They rise very rapidly. In fact, when you lay the 1 in 100,000 36-hour event over the top, those peaks - or the peak on the - that occurs - has anyone got a mouse on this one at all? All right, well, the peak that occurs on the left-hand side-----

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Do you want a pointer?-- Yeah, all right.

We have a pointer here?-- Actually, what you'll see in my statement - yes, if you look at the figure on page 46, actually, you'll see that the - my eyes get a bit - it doesn't show up terribly well - but you'll see the red line there on the left-hand side. That follows up that - the red line is the 1 in 100,000 event, which is the dam crest flood for Wivenhoe. That's what it can just handle now.

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Hold on. So, the red line is showing us the inflows to Wivenhoe in a 1 in 100,000-----?-- That's what it has to be able to handle at the moment. It is about 80 per cent of what the probable maximum flood is through there, which is what the next upgrade in 2035 will be required to upgrade it to.

Probable maximum flood is a term developed in-----?-- The probable maximum flood is effectively the maximum possible flood that can occur for the site.

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Is that developed under the ANCOLD guidelines?-- That's developed under ANCOLD guidelines and under Bureau of Meteorology guidelines.

Thank you. I interrupted you?-- Now, you'll see that the rate of rise of that - the rising limb of the hydrograph almost mimics that. So, it was really going up at a fair rate. What effectively - you know, it fills out there, and you'll see that the falling limb on the second peak coincides with the falling limb of that big event. So, what you've really got to do in that rising limb is really decide just how big is this event going to be, and on the scale of that, it could have been a fairly big event. Now, they got through the first peak of that fairly well, and the - you'll see in the head water curve, there's a slight sort of tilt over as the

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second - or the trough in the middle of those two comes into play, and they start catching up. So, because the inflow still exceeds the outflow, it's still a reservoir rise and, in that situation there, they had control of the event in that they knew the magnitude of that first peak coming in, and, you know, they could tell that they were over the worst of it if they followed on the same way. 1

And also that they had got through the first peak without having to make releases which were-----?-- That would damage Brisbane. 10

That exceeded 40,000 CUMECS at Moggill and therefore would flood Brisbane?-- Yes. All right?

All right?-- So, now, most floods tend to only have that one peak. This was an unusual flood, in that it had this second peak come on. Now, the Bureau of Meteorology didn't really forecast it, because I know when they rang me on the Monday night, they said it's going to come over and just go over the '74 for a short period before it drops away. We don't want to go to Procedure 4. 20

Sorry, when "they" - you mean the flood engineers?-- When the flood engineers rang me on the Monday night.

You said before that the Bureau of Meteorology had not forecast the second peak. Would you explain that, please?-- Well, when they were talking to me, they indicated to me that they had control of it and, you know, it was going to drop away from thereon in. So, they hadn't taken into account any second peak. It was only at about 4 o'clock next morning that that second peak starts showing up in their flood modelling, in their hydrologic modelling. 30

This is 4 a.m. on the Tuesday morning, on the 11th?-- Yes. So that's when all bets were off in terms of, you know, whether they just rode through Procedure 4 and, you know, that sort of event doesn't happen all that often. In the 1893 event, it didn't happen like that. There were three flood peaks over two weeks with about a week in between each one. In the '74 flood, there was one flood peak that hit Brisbane, but a week later there was another cyclone off the coast. If that had have come in, it would have hit Brisbane and would have hit everything with a saturated catchment and would have had a lot more effects because of that. But this was only 30 hours apart, so, you know, the manual may not have been sufficient for this type event. We'll have to review it and say, "Could we have operated it differently? Are there other signs in there that we should be looking for for that sort of event?" From a climate point of view or weather point of view, I understand the scale of these events were too small for the Bureau of Meteorology to really model clearly. So, it was, you know, at the limits of their technology, if you like, and that's one of the things we have to live with in this industry. So, you know, it wasn't really forecast to be, you know, a very heavy event coming up which would park itself right on the reservoir. 40 50

Well, you also refer, I think, in your statement, to the fact that the Bureau of Meteorology's prediction of the rainfall over those three days in that area underestimated what, in fact, fell?-- Yes.

That's also referred to in the flood report?-- Yes. You know, I mean-----

What impact does that have on the management of that second-----?-- Well, if you're trying to predict what is going to happen, I mean, you've really got to gear up to be able to handle those sorts of eventualities, so that if more rain falls than is actually predicted, you have got more water to handle than you originally thought you were going to have to handle.

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Mmm. The two peaks occur between about the 9th and the 12th of January?-- Yes.

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Over about three days. Given the volume flow into the dam over those three days, what was the dam's mitigation capacity to deal with that volume?-- By the dam temporarily storing it, it was mitigating. It wasn't having to release out as much water as would have occurred if it had have just been a simple OG crest structure.

If we can look at the manual for a moment? Do you have the manual there?-- I have a copy of the manual.

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I'm going to Appendix C, which starts at page 52. I'm looking at the column headed "Flood Capacity"?-- Yep.

And if we count down to lake level 67, it starts at zero flood capacity?-- Yes.

And if we go up to 74, it is recorded as 910,000 megalitres capacity. So, the capacity from 67 to 74, to get to a W4 situation, is about 910,000. The inflow to the dam over those three crucial days was a lot more than 910,000, wasn't it?-- Yes.

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If our figures are right, it was something over 1.5 million megalitres?-- It was a significant event, something that that part of the world hasn't seen since, you know, the 1893 flood.

Given the rate of - and the volume of inflow on those crucial days, can you see if there was any alternative in managing that flood if it did not necessitate large releases being made from the dam?-- No, you had to make large releases irrespective of what else happened, because you had a large volume to get rid of. It's a matter of doing that in a controlled release operation. In this event, you know, while there's a requirement in the manual to release the volume - the flood volume within seven days after the peak, now that's largely drawn out of experience with, you know, like, cyclones - or the 1893 event and the 1974 events. There's a history in the Brisbane Valley of another event coming along about a week

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later. Now - whether it is just on the cyclones coming around their cycle or whatever. So, you add risk to the safety of the structure if you leave that water stored in the structure for prolonged periods of time. So, you've got to get - drain that flood water in as controlled manner as possible. In this event, you know, they quickly reverted down to a drain of somewhere of about 3,500 cubic metres per second, I think, which is a non-damaging flow for Brisbane. So, you've really got to bring it down as quickly as possible to those sorts of discharges, and run it for prolonged periods and keep watching the weather as to whether you have to, you know, do something different. But, as you're draining it, you really have to say, "All right, I've got rid of so many thousand megalitres, if I keep going at this rate I'll have it drained within seven days.", but then you've get a forecast for more rain, so you've got to say, "All right, what impact is that going to have?" If it is going to produce 1,000 cubic metres per second out of the Lockyer, you might take a 1,000 off your target drain discharge, but you've still got to keep trying to drain as much water as you can, and you release it at a level - for instance, in Brisbane, if it's already had 6,000 cubic metres per second through Brisbane, you would release it at a level that was under that level - under that peak - for as long as you could, then you drop down to the non-damaging flows, and drop down so that you, for instance, bring Mt Crosby open or the Fernvale Bridge. It is a progressive reduction thing.

All right. Was another challenge during this flood event the amount of rainfall occurring downstream of the dam and the contribution from other tributaries such as the Lockyer Creek and the Bremer River and the Brisbane River?-- There was a real difficulty, if you look in - for instance, Mark Babister's report and the Flood Event Report, the annual exceedence probabilities of the rainfall downstream were, you know, very extreme, and certainly Fernvale had some flooding, you know - or some really heavy rain during that peak outflow. So, there would have been some combination of those sorts of effects on flooding in Fernvale. But that creates a problem for the operators in that, you know, how close to the limits do you go when you're operating these things? You know that you've got to keep under three and a half or 4,000 cubic metres per second to keep it - to be a relatively non-damaging flow in Brisbane and Ipswich, but then you - there's a risk of further rainfall that might drive the Bremer up, for instance, which is 15 hours downstream, or thereabouts - it depends on the actual magnitude of the discharges as to how quickly it gets there - but, you know, you've got to then throttle down the release of Wivenhoe so that you don't aggravate that flooding downstream.

You would have seen the operators took into account the flows downstream and the rainfall downstream while they kept within W3 strategy until about the Tuesday morning, the 11th, at about 8 a.m. when they moved to W4. In your view, was that a correct course to have taken?-- That's what you try to do. So, you don't know whether - well, put it this way: if that second peak hadn't have occurred, they would have all been

heroes. There wouldn't have been this inquiry, because it would have, you know, restricted the discharge from going through - you know, damaging discharge through Brisbane. The reality was that that didn't happen. This other event came along which changed all the circumstances. There is a limit as to what Wivenhoe can do. The January '11 event was a relatively small event historically. It's a big event for the people of Brisbane, and unfortunately it creates a lot of damage, but, you know, Brisbane has grown up, you know, since, what, the 1830s, '40s, and there are still a lot of places in Brisbane that are under the 1 in 100 floodline, but the 1 in 100 floodline doesn't say you're flood free. If you get a 1 in 100,000 year flood through Brisbane, you know, the damage would be enormous.

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Well, I will come to other floods shortly but just sticking with this one for the moment. You saw from the flood report the operators moved to a W4 strategy on the morning of the 11th and that followed very large releases. In your view was there any alternative given the rate of inflow-----?-- When you look at the circumstances that were happening at that time they were struggling to - you know all the rain wasn't reporting in the rain gauges. A lot of it was falling actually on the storage. They were struggling to find out, you know, where is it all coming from? That's when they started doing back calculation, I understand, on what the inflow is, so they could determine instead of what their hydrologic models were saying it was somewhere around about 8,000 cubic metres a second. It was actually something closer to 10 or 11 and they were then trying to determine, you know, where is all this coming from, how can we feed this extra rainfall in that we know is happening but it is not being expressed in the model results. So, there was a lot of activity going on to try and determine that. Fortunately they found out where it was coming from. I mean, there is nothing worse than, you know, all your models going wrong at the wrong time but this was a case that, or as I understand it, that the rain wasn't falling on the rain gauges, it wasn't falling on the rain gauges and because it was falling on the reservoir it was instantly reporting to the surface off the reservoir so the reservoir was, you know, started a rather rapid rise from that perspective.

Did you see any alternative but to move to a W4 strategy-----?-- No, unless-----

Let me finish, and make large releases from the dam?-- The only way you could have avoided that was if you had rock solid forecasting which indicated that it was going to stop. Even then you would have had to have done that very carefully because you don't know whether another event would have happened, say, 30 hours after that event the way this one had on top of the first one. Now, that might have endangered the safety of the dam. As it was, I mean there was a lot of talk in the press and things about losing control through loss of fuse plugs. There was no way they did lose control. Even if a fuse plug had gone, all it would have been would be an avenue for more release as part of a planned action.

All right, there has been talk in the press and elsewhere that what occurred in January was called a dam release flood. That is the implication being the flood occurred because of the releases from the dam and they were unnecessary. That is, the flooding in Brisbane could have been avoided by better management of the dam?-- I am sure in hindsight you could work out ways where the flow in Brisbane could have been reduced marginally but that's not the way you can operate a dam. The - in terms of a dam release flood, of course it was a dam release flood, but the implication of a dam release flood is that it is the fault of the dam not the fault of the rain. I mean, the releases from Wivenhoe were purely the fault of the rain. You have to handle that rain. I mean, if the dam wasn't there and that flow came down to Brisbane it

would have been a couple of metres higher than it was.

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All right. From your review of the flood report, have you identified any respect in which the management of the dam during the flood event was not in accordance with the manual?-- I haven't found anything to date but I haven't completed my review of it at this stage.

Thank you. Now, if you go to your witness statement, please. Close up the Flood Report for the moment. If you go to paragraph 103, thanks, that's on page 32. Just read the first sentence?-- Of 102?

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Paragraph 103?-- "Certainly Wivenhoe and Somerset dam"-----

Just to yourself?-- Sorry, all right. Mmm.

I am interested in the concept that the usefulness from the flood mitigation point of view of Wivenhoe and Somerset you say is dependant on the magnitude of the incoming flood and the extent of rainfall down the stream?-- Yes.

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Can you elaborate on that, please?-- When you think of something like the 1974 flood event, for instance, just as an example. There was a damaging flow of somewhere around about 5,900 cubic metres a second coming out of the Lockyer and the Bremer. When you are operating Wivenhoe what you are looking for is saying, all right, what flow can I release not to aggravate that flow? So, if you do a repeat of the 1974 flood all you do is you release to match the difference between what's naturally occurring at that, you know, in Brisbane due to the Lockyer and Bremer and say, all right, I can provide the difference from the dam. So, you don't aggravate the flooding. So that's an extreme case where, you know, you could have virtually drained Wivenhoe dam to about 75 per cent before that event and it would have made absolutely no difference in Brisbane because the damages were already occurring due to Lockyer and Bremer. So, you know, from that sort of type of event you come back to something like the February '99 event which was really concentrated upstream of Wivenhoe. There was very little flow coming out of the Lockyer and Bremer so whatever comes out of the Wivenhoe is really what goes past Brisbane. So, you know, a bigger event than, you know, in February '99 might have caused damages - damaging floods out of - through Brisbane if the volume and peak inflows had been there. So it really depends - see what you try to do is if there is floods coming out of the Lockyer and Bremer you try to throttle back what is coming out of Wivenhoe to match those so that, you know, you might, say, have a peak in Brisbane of 4,000 or, you know, if you can't restrict it to 4,000 you might try to restrict the peak to 5,000. You know, something like that. So, if there is heavy flows coming out of the Lockyer and Bremer you are restricted to how much you can discharge out of Wivenhoe until you get up to that procedure 4, in other words you have gone as far as you can go trying to take that sort of role. Then you have to decide, all right, what maximum discharge do I release from Wivenhoe? You know, when I enter procedure four.

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Just in comparing how Wivenhoe would perform with different size floods and different - floods of different characteristics. Is this right: you prepared a paper which considers how Wivenhoe would have performed under some of the historic-----?-- Yes, it is a fairly simplified sort of analysis that just relies on spreadsheet macros and things like that to look at the performance of a series of design flows as well as the 1893, the '99 and the 1974 events.

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Do you have that with you?-- Yes, I understand it has been distributed. It hasn't been peer reviewed in any way at the moment.

Mr Rolls has given it - have you got one?-- Yes, I have one.

I will give a copy to the Commission.

COMMISSIONER: Does everyone else have it as well?

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MR O'DONNELL: Yes, we have extra copies to distribute.

COMMISSIONER: Thank you.

MR O'DONNELL: Just as an overview this gives - it assumes that Wivenhoe was there during the 1893?-- Yes.

The 1974 floods?-- Yes, what would happen for a repeat of those events.

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It analyses how the dam with a variety of historic floods would have performed, including the January this year flood?-- Yeah, just remember it is a fairly rough analysis. I am sure you could pick holes in it but it gives an indication of the relative sorts of processes that would go on.

It also considers how the dam would have performed if the full supply level had been reduced to 75 per cent before the flood event began?-- Yes.

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So just walk us through page 5 is the 1893 flood?-- Yes. The 1893 characteristically had a lot of flood coming out from Somerset along the Stanley. It was a lot more relatively than coming from upstream of Wivenhoe without Somerset. The - interestingly the flood volumes of this event and the first peak of the 1893 are about the same.

Where do we see that?-- It is in paragraph 11.

Thank you. Just keep us with you as you walk us through it?-- All right. Interestingly, the combined flow in those dot points there of the Bremer and Lockyer was relatively minor in that event. Now, when you route those through the storages, the table on page 6, it summarises the outcome of those. The different cases that I have got there is case 1 is the manual in its current form. Case 2 is if you dropped the full supply level down by three metres to give you the 75 per cent. Still start, although still start operating the gates at 67.25 the

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current manual level.

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So the flood event doesn't start until it fills up to 67.25?-- That is right. You don't start releases until it hits the current full supply level. Case 3 is the case where you drop it down to 75 per cent but you also start the releases early. Now, the table at the bottom of the page, the format needs to be a bit revised but what you can see is that there is not a, you know, starting out three metres lower produces about, what, about .5, .6 of a metre, isn't it, difference in the top headwater of Wivenhoe. There is a reasonable difference here in terms of the maximum discharges, probably the point to look at is the discharge that is down at Moggill because that's the bit that hits Brisbane.

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Pausing there. Under all three case scenarios the level of the lake in Wivenhoe would have exceeded 75?-- Yes, you would have been in procedure four. Interestingly, in this case, case 1 would have blown a fuse plug. Cases 2 and 3 wouldn't have.

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On any case the releases from Wivenhoe coupled with the downstream flows would have produced widespread inundation-----?-- Oh, yes. All right, because you are looking at with the manual in its correct form it is about 8,000 cubic metres a second past Brisbane which is, I understand, somewhere about the January 2011 floods.

Are you getting that figure from the table at the top of page 6 against the left-hand column "maximum discharge"?-- Yes, that's - yes, well, no that's the discharge at Moggill. That takes into account flows out of the Lockyer and Bremer feeding into that. All right, if you drop it to 64 and run the event again the maximum discharge you get through Moggill is 6,700 so there is about a 1,300 CUMEC reduction. If you drop it or start releases, because the 1893 flood had a longer lead up to it, you were able to get rid of more flow earlier so that there was advantage in starting out at 64.25.

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All right, we see that on the foot of page 7. You have a table "Effectuated on Moggill Discharges"?-- Hang on, no. That's - that is on page 6, the top of - sorry, yes, the graph of "Plot of Model Discharges".

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At the foot of page 7?-- All right, now, you can see that speckled line is what would have, you know, occurred on the same basis of the analysis. Now, just remember that there is no attenuation built into that modelling and that is where this modelling is deficient. Treat most of these results of more indicative of what might happen.

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Sure?-- Rather than precisely what would happen. You can see the discharge - you can see the spike of the discharges on the red line as it goes past, you know, blows the fuse plug in Wivenhoe. The others below it, the green and the blue, don't blow the fuse plug. But you could see the way that the dam is operated. Interestingly, when you blow the fuse plug for the second or for the third event, the third peak going through

there you have to open the gates to avoid overtopping the gates because you have to throttle the releases right down for that last event. Most of the major discharge for the third event goes through the triggered fuse plugs.

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What is significant from my point of view is that the graph shows the degree of flow mitigation that is achieved but even with that degree of flood mitigation the flows at Moggill are going to be well more than 4,000 CUMecs producing flooding in Brisbane?-- Damaging floods, yes.

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Is that a consequence of poor management of the dam?-- No, that is a function of the event.

The volume of inflow-----?-- That's with the dams, you know, operated - well when I was running through these I certainly had a fair extent of hindsight in that in that I was able to limit the discharges because I knew they were going to peak. So there is a bit of that, you know, psychologically built in there.

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Mmm?-- But, you know, there is no way that you could responsibly not release that amount of flood.

In order to protect the safety-----?-- In order to protect the safety of the dam, yes.

Let's move to '74. It starts to page 8?-- Yes.

Tell us, please, what are the key features of the '74 floods?-- The key features for the '74 event, realistically again the flow out of the Stanley was far greater than that coming from the rest of Wivenhoe or rest of the Brisbane. But the thing in the '74 was there were big flows in the Bremer and the Lockyer so they peaked - if you look at the table in paragraph 19, there is about 3,200 coming out of the Lockyer and about 4,000 coming out of the Bremer. Because of timing issues, they would have peaked at about 5,900 through Brisbane. Now, there is - the same table below there which illustrates roughly how the '74 flood would have fared. Interestingly, the '74 flood would have only peaked at about 73.3 or thereabouts so it wouldn't have even got to procedure four.

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So you are looking at the foot of page 8 against the left-hand column?-- In the table for case 1.

Head water peaks?-- Head water peaks, yes.

You have 73.2 for Wivenhoe in case 1 and then 72 and 72 for cases two and three?-- Now, I am not guaranteeing that it is going to be 73.236, it might 73, 73 and a-half but it will be somewhere of that order. So, you know, it then comes down to a case, you know, that the '74 flood was a fairly minor event. What I was looking for was what would happen if you changed the operating rules for Wivenhoe to prerelease it down to 64. Interestingly, there is the maximum discharge at Moggill is, you know, it goes from about 6,100, 6,200 back to 5,900. So a

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very minor reduction.

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You are going to page 10 in the lower table, is that right?--
Yep. You can just see that realistically the peaks aren't
aggravated by what you do at Wivenhoe. Wivenhoe is - would
have been perhaps the ideal flood mitigation, you know,
carried out the ideal flood mitigation role for the '74 flood.

Explain why that is?-- It copes with the flood. It doesn't
trigger procedure four where the dam safety becomes paramount
and you can release it at discharges that wouldn't have
aggravated damages that would have already occurred
downstream.

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No but there still would have been flooding in Brisbane?--
Yes.

Because of the flows out of the Lockyer and Bremer?-- That is
right.

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COMMISSIONER: Mr O'Donnell, how far is this going to take us,
knowing what might have happened in other floods? We have the
paper. Is it really necessary to pursue this with the witness
to this length?

MR O'DONNELL: In my submission, it is important to look at
how Wivenhoe would perform under different types of floods.
This is an example of taking historic floods that have
occurred. It also goes to the question, however much
tinkering you make with the manual can you avoid a flood in
Brisbane if you have a rain event as we had in January this
year.

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COMMISSIONER: I understand that but I do wonder, given we
have got the paper and it explains that, whether it is
necessary to take up time with it. I am a bit concerned, as
you will understand, about getting through witnesses in the
amount of time it is going to take.

MR O'DONNELL: Very well, I won't take it any further. I
tender that paper.

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COMMISSIONER: Yes, Exhibit 400.

ADMITTED AND MARKED "EXHIBIT 400"

MR O'DONNELL: Could we bring up Mr Babister's report, please?
Page 34, paragraph 199.

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MR CALLAGHAN: The witness may have his own copy, it hasn't
been tendered yet and it is not available for tender at the
moment.

MR O'DONNELL: Do you have your own copy?-- I have my own

copy.

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That is fine, thank you. 119?-- Yes.

Mr Babister comments on the development of the manual. At 119 he says that the Hegarty and Weeks recommendations have not been sufficiently addressed in subsequent revisions of the manual and goes on to say that subsequent revisions haven't had the benefit of critical review of aspects of the underlying analysis, technology. He says in 120, "The reviews of the manual should consider things such as design and hydrology methodology, updating of models, inclusion of new historical data and assessment of alternate mitigation strategies." ?-- Yes.

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In 121, "Limitations in design hydrology have led to a set of operational procedures optimised for design flood assumptions are susceptible to real floods and deviate substantially from design assumption." Can you comment; historically is what he says correct that revisions of the manual since the date of Weeks and Hegarty are not reviewed the design hydrology?-- There have been a number of reviews of Wivenhoe hydrology, Wivenhoe, Somerset, North Pine. I know that the review we did in the early 90s was a very extensive review and it built on that Hicks and Wegarty - sorry, Weeks and Hegarty modelling. It was also extensively done when the auxiliary spillway was put on the dam back in 2003/4. So it has been extensively reviewed a couple of times since then. Certainly in 2003 when the Bureau of Meteorology ungraded their probable mass precipitations it was all reviewed as part of the process which came about when the auxiliary spillway was put in there.

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Let's take it step by step. Let's do the one in the 90s. You were involved in that?-- Yes, I was the project leader for that.

Could I hand you a copy of the executive summary? This is the executive summary?-- Yes, I - it is a long while since I have read it.

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The full report runs to some 27 volumes?-- Yes.

Your name appears in one of the front pages?-- Yes, along with Rob Ayre, John Ruffini and Warren Shallcross.

Could you summarise for us what was the review of the hydrology and did it involve reviewing the models used, the operation-----?-- The models, I didn't do the hydrology associated, that was really John Ruffini and Bob Ayre but my - I don't pretend to be an expert hydrologist, I am more a designer than anything else. But, it was a complete re-establishment review, recalibration of all those hydrologic models so that they could be put into the real time flood model. There was, you know, extensive calibration, the best available at the time. They have also been recalibrated I know in the 1999 event and the hydrology hasn't been found to be too wrong. I day say you should asking John Ruffini and Rob Ayre those sorts of questions but the hydrology hasn't

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been proved to be too far wanting.

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All right, thank you. I tender the executive summary.

COMMISSIONER: That will be Exhibit 401.

ADMITTED AND MARKED "EXHIBIT 401"

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MR O'DONNELL: Let's go into the review in the early 2000s, that was part of the Wivenhoe Alliance Study?-- Yes.

I will hand you some documents. This review was undertaken as part of the upgrade works to the Wivenhoe dam when the fuse plugs were put in?-- Yes.

You are familiar with the work that was done?-- Yes, I - it is a while again since I have read this report.

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Did this involve reviewing the designed hydrology-----?-- A complete review of the design hydrology. I suspect it built on the stuff we did back in the 90s but that's the way of hydrology, I dare say, it is a matter of building on building, keeping on building.

Calibration of models?-- Yes.

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And was the outcome of this work used in subsequent reviews of the manual?-- It is a matter of how, you know, it is built into it. I mean, the results of that modelling would come into it. As to whether any specific numbers were taken out of it is a different issue. The modelling was used to determine that the fuse plugs were the best way to go in this instance and that it then became a case of, you know, how - what sort of events would they be triggered on, knowing that they were dealing with design events and not necessarily actual events, that is one thing we have to think about in the future. They were designed for the first fuse plug to go in about a 1 in 5,000 year event and I can't remember what the second one is but the third one was due to go in about a 1 in 18,000 event. Now, in world terms that is probably fairly rare for a fuse plug to blow or to trigger.

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Right. I'll tender that statement.

COMMISSIONER: Exhibit 402.

ADMITTED AND MARKED "EXHIBIT 402"

COMMISSIONER: Is that a convenient time, Mr O'Donnell, or do you want to tidy up something about that?

MR O'DONNELL: No, that's convenient.

COMMISSIONER: All right. We'll adjourn until 10 o'clock tomorrow.

THE COURT ADJOURNED AT 4.30 P.M. TILL 10 A.M. THE FOLLOWING DAY