

QUEENSLAND FLOODS COMMISSION OF INQUIRY

Matters concerning the operation of
Wivenhoe and Somerset Dams

Tuesday, 29 March 2011 at 10.00am

At level 30, 400 George Street, Brisbane, Qld

Interview conducted by: Ms Lisa Hendy and
Ms Susan Hedge

Private interview of John Lawrence Ruffini pursuant to
sections of the Act

1 MS HENDY: This is Lisa Hendy at the Queensland Floods
2 Commission of Inquiry. I'm conducting an interview today
3 pursuant to a requirement to attend issued to Mr John
4 Ruffini. So just going around the table I'll ask people to
5 identify themselves for the purposes of the recording.

6

7 MS HEDGE: My name is susan Hedge. I'm a lawyer at the
8 Queensland Floods Commission of Inquiry.

9

10 MS HELMAN: I'm Caroline Helman from Crown Law.

11

12 MR ROLLS: Jeff Rolls, barrister for the State of
13 Queensland.

14

15 MR MacSPORRAN: Alan MacSporran, barrister for the State.

16

17 MS FAAS: Petra Faas, Principal Lawyer, Department of
18 Environment and Resource Management.

19

20 MR RUFFINI: John Ruffini, Director, Water Planning
21 Science Dam and one of the duty engineers for the flood
22 operations of Wivenhoe, Somerset and North Pine dam.

23

24 <JOHN LAWRENCE RUFFINI, interviewed:

25

26 MS HENDY: Q. John, I'm going to ask you some questions
27 about the statement that you prepared in relation to the
28 flood events in January 2011, so I'll just work my way
29 through this statement. As I said earlier, if anyone for
30 any purpose needs a break please let me know and we can
31 have a break. John, the first question I wanted to ask you
32 was in relation to your current employment as Director of
33 Water Planning Services. Is that your --

34

A. Sciences, yes.

35

36 Q. Sciences, sorry. Can you just give me a bit of a
37 description for a lay person about what your
38 responsibilities involve in that role?

39

40 A. Okay. I'm Director, Water Planning Sciences, and
41 there are three major areas that I look after in that role.
42 The first kind of major group that I look after that falls
43 under that is the Queensland Hydrology Unit. Now that
44 consists of a group of engineers and scientists and
45 geologists and some technicians that look - you know,
46 provide hydrologic advice to the department for a range of
47 activities. So basically most of the water activity stuff
in the department involves looking at quantity type of

1 elements. So, for example, for the water resource plans
2 that are prepared for the State which look at the
3 entitlements and the resource operation rules and all those
4 sorts of things we do the modelling work that underpins a
5 lot of that stuff which then goes into the water resource
6 plans, and that's for both groundwater and surface water in
7 that aspect. We also provide for the regional water supply
8 strategies. We provide all the hydrological modelling
9 support for that activity, so that sort of goes into
10 defining all the water security type issues and things like
11 that. Water resource plans, I don't know if you're very
12 familiar with that sort of stuff at all. The water
13 resource plans go to defining people's entitlements. It's
14 part of the COAG requirements about tradeable water
15 entitlements, the whole reform agenda about water going
16 from highest value, moving in value and being able to
17 trade, setting up a trading framework, and the modelling
18 and that that goes into that work sort of underpins all
19 that work. But there's another - there's another - and it
20 also provides for the environmental security, environmental
21 objectives that sort of get developed as a part of those
22 sort of plans. So that group provides the technical
23 support to that sort of thing. There's another bunch of
24 activity which is about once you've got those entitlements
25 from a planning point of view for regional water security,
26 how do you translate that into security objective because
27 you may want to trade off - you may want to lose - you
28 might want to use less of your entitlement to deliver
29 longer term water security objectives. So that's part of
30 the regional water supply strategies that have been rolled
31 out in other parts of the State. So we provide technical
32 input into that. We've done a lot of the work - a lot of
33 the tools and that for the water, Queensland Water
34 Commission. We develop those and so the models that
35 they're using basically we developed a lot of those tools
36 for them and provided training, and also in the early
37 stages of the development of the South-East Queensland
38 Water Supply Strategy we also did a fair bit of that early
39 work during the drought but those basic tools we kind of
40 developed within that group as well.

41
42 We also have a lot of - we do a lot of work within
43 that area. We have a drilling rig which goes round the
44 country exploring for new water and doing evaluations of
45 that. So we do a lot - we've got a crew of four people
46 that go around and do that. We've got a person who does
47 geophysical logging. So basically for the GAB, supporting

1 the Great Artesian Basin, and going down - there's a
2 program called GABSI, which is the Great Artesian Basin
3 Sustainability Initiative, which is about capping these
4 free flowing artesian bores to recover the pressure and the
5 State and the Federal - State Government and Federal
6 Government are jointly funding that sort of work. Now as
7 part of our role there we go out and log farmers bores so
8 that they can get on the program and assess whether they're
9 corrosive.

10

11 In addition to that, we do a number of - that group is
12 also engaged in a number of federally funded projects. So
13 there's a whole raft of activity through the National Water
14 Commission, through national water initiative and through
15 the BoM, the Bureau of Meteorology, funding arrangements
16 recently where we've got funding to do major capacity
17 enhancement projects. So we've got a raft of activity in
18 groundwater modelling work going on in the wet tropics,
19 and we've got about I guess maybe half a dozen jobs funded
20 out of that sort of bucket of money over the last sort of
21 thing. So they're our kind of researchy, filling in
22 knowledge gaps that are going to feed into the broader
23 activity with that, but our group also provides input into
24 the coal seam gas evaluations, so in terms of some of those
25 things, so just that hydrological modelling support.

26

27 All of this leverages off the tools that we've
28 developed for the water resource plan but then sort of used
29 in other sorts of things and there's a whole raft of input
30 into various of - you know, with the now amalgamated entity
31 in terms of looking at compliance activities and things
32 like that, we provide various levels of support for it. So
33 that's that area is roughly - you know, there's a whole lot
34 of other little bits and pieces that go on but that's kind
35 of the core of the work that's going on with it.

36

37 Now the other group, one of the other groups I look
38 after it is the hydrographic support unit which is based
39 out at Rocklea. Now that's a group of primarily
40 technicians, technical people, and what that group does is
41 provide all - for all the gauging station network
42 throughout the State and for all the groundwater station
43 network, this group provides all the logistical support if
44 you like. This is probably an easy way - we assemble -
45 you know, get all the data loggers, all the things in,
46 provide the huts, get all that - warehouse all the hearts,
47 get all that organised, get all the instrumentation do.

1 We've got a flume out there for calibrating all their
2 gauges, all their metres that they use to measure the flow.
3 So we provide the place where all the equipment prior to
4 being installed in the field gets tested, put together and
5 goes out.

6

7 Q. Rolled out?

8 A. So there's a group of people that we've got doing that
9 sort of work out at Rocklea. Now the third group that I
10 look after is the water planning ecologists. This is a
11 group of aquatic ecologists primarily and they do a lot of
12 the - to support - their work is broken up into two primary
13 sort of I guess areas - work to support the long-term
14 monitoring of the environment throughout the State, the
15 instream stuff, and it's more about the long term - I guess
16 the long term trend staff and there's a number of
17 frameworks that have been put together, both at a State and
18 a national level that these guys feed into. The other bit
19 is in terms of gathering the ecological knowledge to put
20 together ecological response models and things like that
21 that they're actually got a lot of stuff that's funded
22 externally we once again that we get from federal funding
23 programs and things like that to do that sort of thing. We
24 also do a lot of collaborative works with universities and
25 things like that. An example at the moment is doing work
26 on Stradbroke Island in terms of climate change and
27 getting, doing cores and working out - because Straddie is
28 a pretty unique place and there are things there where we
29 can do cores and work out - actually come up with paleo
30 climate sequences going back maybe 10,000 years. So
31 there's some very exciting work that's going on there in
32 conjunction with the universities in Adelaide and UQ here
33 and it's getting a lot of international sort of thing, and
34 there's an Arklinkage grant. We do those sort of things
35 which is kind of niche researchy stuff that feeds directly
36 into the policy areas that the Government is sort of
37 interested in. So that's broadly like a cooks tour of what
38 I do there. So what I do my job is to kind of shuffle
39 money and things and keep it all ticking over. I don't do
40 - yes. Guiding it, making sure it happens.

41

42 Q. The next thing I wanted to ask you about, John, was
43 this study that you did between 1990 and 1995. That was
44 when you were - were you employed by the South-East
45 Queensland Water Board?

46 A. No. There was a - the SEQ, South-East Queensland
47 Water Board contracted the department to do that work. I

1 can get you a copy of the contract if you want.

2

3 Q. No.

4 A. So that was a large project that was undertaken as
5 part of a contractual arrangement between ourselves and the
6 South-east Queensland Water Board at the time.

7

8 Q. You've mentioned in paragraph 10 of your statement
9 that the person identified as flood operations engineer 1,
10 Mr Ayre, and another person were three man people who did
11 the work. Who was the third person?

12 A. Peter Allen who is now Director of Dam Safety. Peter
13 was the project leader of that. At that stage he wasn't
14 Director of Dam Safety. He was a senior engineer in
15 engineering services. At that stage Rob Ayre was working
16 for the department as a hydrologist as well, so the three
17 of us were I guess the key principals, but there were quite
18 a few other people involved in the study from programmers
19 to more junior hydrologists and engineers that were
20 involved during that study, yes.

21

22 Q. And just from - and because you mention later on in
23 your statement that you think that it's probably a good
24 idea that a repeat of - or something similar be done
25 following this most recent event, can you tell me what the
26 - in lay persons terms, what the purpose of that study
27 was?

28 A. The purpose of that study was the - the generalised
29 methodology had been developed - well there's two. I
30 mention in my statement about the revision that went on in
31 the - in 2000, whenever, of the generalised tropical
32 thunder storm, tropical storm model. But in that '90 study
33 the first version of that model had been done and so this
34 was applying that to the previous and updating the previous
35 estimates of the PMPs and the things like --

36

37 Q. So ultimately just in a nutshell applying that
38 generalised tropical storm method to the --

39 A. In general around about that time there's this
40 general, this first generalised method had been kind of put
41 together because - because that was where the industry was
42 heading and that sort of rolled out a whole lot of, go look
43 at your spillways again and do your need - what do you need
44 to do. So that was just that regular revision of that sort
45 of thing. At the same time the telemetry system that
46 existed at that time, the Brisbane River valley telemetry
47 network, which was a smaller one, needed replacing and the

1 Bureau had just started adopting the ALERT platform as
2 their standard in rolling it out Australia. So there was
3 also - yes, part of that study was also developing up the
4 new version the real time flood modelling system and doing
5 that. So basically there were a lot of earlier studies
6 that had used smaller and this was to sort of do a
7 comprehensive rework of that sort of thing. There was a
8 brief - so it had the dual purpose of - from a dam - you
9 know from a dam safety point of view what did they need to
10 do but also from a flood mitigation point of view what they
11 needed. Now the executive summary of that report contains
12 a reasonable discussion on the objectives of the study and
13 the recommendations that flowed out of that sort of study
14 but it's not - it's quite a thick little document in terms
15 of that sort of thing but it's - but I'd say if you look at
16 - there was a raft of reports that were done there and in
17 the light of the knowledge that we have now that we've had
18 - I guess since those reports were done we've had two
19 biggish floods, the '99 flood and we've had this flood as
20 well. So that gives you a lot more knowledge in terms of -
21 because you've had these big floods then you've got more
22 knowledge, so you should go back and just revisit a lot of
23 the basic hydrology and make sure that your assumptions are
24 pretty solid still. So just sort of - so of those ones
25 there's probably like a series of those reports if you
26 wanted to - if you want to make those assessments and
27 you've got to go back and just revisit some of that work,
28 yes.

29
30 Q. If that work was to be undertaken would that be
31 undertaken by the department or by - do you have any idea?
32 A. I guess this is something the Commission - something
33 to think about, what's the best way of doing that. Like if
34 you look back to some of the earlier sorts of approaches -
35 because it will intersect with - it does sort of overlap
36 in, well, what are you going to do with flooding,
37 downstream flooding issues in Brisbane and things like
38 that. So there's kind of a real overlap between the thing.
39 So just whether you want to chew the whole thing at once in
40 terms of - or at least in terms of the base modelling
41 platform have a bit of an integrated approach to it. So
42 there's a couple of models that you can sort of float
43 around as about what's the most sort of - because there's a
44 number of stakeholders involved in that, and people have
45 got issues - because you're going to have to do things like
46 - you want to confirm what's happened to the river channels
47 and things like that, so there's survey work to do and it's

1 quite expensive and it takes a little while to do. So
2 there's those things that you'd want to have a look at.

3

4 Q. And I think you mention later in your statement that
5 you'd anticipate a full blown study like that would take
6 quite some time to finalise?

7 A. That's right.

8

9 Q. In the three years would you think?

10 A. If you look at that - that previous study was - but it
11 did include the model development was like a four-year
12 study and there was three or four people doing that. So
13 you'd have to - you could work it through but it's just
14 resourcing and timing and how sort of --

15

16 Q. How many people you have?

17 A. How many people you really want to throw at it but you
18 really - but you don't want to - you don't want to half do
19 it. You know, you do all this work and then you don't do
20 the thing and it'll always be a question mark about where
21 these other things are, not sorted. So there's sort of -
22 that needs to be thought through where you might go with
23 that I think.

24

25 Q. Have you created a wish list or thought about -
26 discussed with --

27 A. We've been sort of kicking about in our own head what
28 needs to be done. I think the council guys have got a few
29 ideas as well, Brisbane City Council about what needs to be
30 done. So everyone's having a little bit of a think about
31 it. I think in just discussions amongst the professionals
32 saying - it would be pretty smart to get it all coordinated
33 this effort, so you just didn't - rather than - like it
34 doesn't make sense that you'd all go off and do 30 per cent
35 of the same study. You'd overlap. So if you could get it
36 coordinated, then I think you could do a much better job.
37 It's not unprecedented. Like the earlier work that was
38 done was done under the Coordinator General auspices and
39 council and various bits of various departments were
40 involved in a lot of that early work in terms of when
41 Wivenhoe was kicked off. So there's some models there to
42 look at.

43

44 Q. You talk about in that initial phase about - sorry,
45 the 1995 report?

46 A. Yes.

47

1 Q. In paragraph 12 you talk about --

2 A. And I should mention that some of that has been - with
3 the new GTSMR, some of those reports have now been
4 superceded by --

5
6 Q. That's what I was going to ask you?

7 A. -- by the later updates. Not the base calibration
8 ones but like the design flood stuff and you sort of see
9 that's reflective of the information in the manual in terms
10 of those sort of things.

11
12 Q. But those, as you've said, identified that, even
13 though parts of it are superceded there was no need from
14 your point of view to revisit the real time flood warning
15 model or it had been refined?

16 A. The real time flood warning model is in the process -
17 Seqwater have a separate process of replacing that at the
18 moment. So they have a company called Deltara's which used
19 to be Delta Hydraulics that they've been working with for -
20 seriously for twelve months, probably a little bit longer
21 in the honeymoon period, at replacing the existing system
22 because the existing system developed in the mid 90s for an
23 IT system they've got a really good return on that
24 investment and it worked fine and this sort of thing but
25 there is - there are now opportunities in taking it forward
26 to sort of move into different frameworks and that, and
27 that's what Seqwater are kind of embarking on an
28 investment. Terry Malone, who you'll be interviewing, now
29 Terry's heading up that project, so he can give you a lot
30 more detailed info about exactly the timeframes and where
31 they're going into terms of doing that.

32
33 Q. I just wanted to talk a little bit about the change
34 from State water projects to SunWater?

35 A. Yes.

36
37 Q. And you mention in paragraph 14 of your statement that
38 SunWater initially contracted the services of approximately
39 ten staff - there's a typo there - including myself from
40 DPI to support the flood operation?

41 A. Yes.

42
43 Q. All staff bar me were phased out by 2006. Is there -
44 I imagine the reason that you were retained is because of
45 the level of your expertise?

46 A. Yes. It was primarily because the - yes. They had to
47 bring people on and train and they had some people they

1 were bringing on and then they left, so it sort of went on.
2 They were just getting that sort of continuity going.

3

4 MS FAAS: I think what John also said in his statement is
5 that not only does he have that level of expertise but that
6 there really isn't anybody else, apart from those other
7 engineers and Peter Allen.

8

9 MS HENDY: Yes. I just wanted to ask about the technical
10 officers.

11

12 Q. Are any of them employed by DERM or are they all
13 SunWater and Seqwater?

14 A. No. They're all SunWater and Seqwater. As I said,
15 previously I'd had other people from my group that were
16 involved in it but then - and I guess there's some
17 commercial imperatives there in SunWater as well that they
18 wanted - while they were contracting to Seqwater they
19 wanted to use as many of their people as possible in terms
20 of that arrangement. And similarly now with the
21 reorganisation, the reorganisation now that Seqwater is a
22 much bigger entity and they have more capacity to do that
23 within their own organisation as well. As I said, part of
24 the reorganisation was that all the SunWater assets in SEQ
25 went to Seqwater, and so that meant a lot of the
26 operational staff at the dams - well they had a choice
27 about whether to stay with SunWater and move elsewhere in
28 the State or move over and stay where they were but join
29 Seqwater. So all the guys that were previously operating,
30 you know, physically at the dam, doing the maintenance,
31 pulling the levers, they all then became Seqwater
32 employees. As well at that time they also took the
33 opportunity to move John and Terry over to Seqwater as
34 well, so they chose to move. So they just kind of built
35 that - which makes sense that given it's an important
36 aspect of what they're doing, they're trying to get some
37 sort of thing there.

38

39 Q. Later on in your statement, and while we're on this
40 topic about the staff I might just stick with that, you
41 mention that some of the difficulties in attracting more
42 people to do the flood operations engineer work. Have you
43 been asked to help identify people or recruit people to do
44 it?

45 A. I guess that's Seqwater's question to answer. Like if
46 I'm asked an opinion I'll give an opinion. They sort of
47 say what do you reckon about this sort of thing but I'm not

1 actively engaged, and given it's their issue I'm not
2 actively involved in sort of providing that sort of advice,
3 yes.

4
5 Q. So you haven't been asked if any of your staff would
6 be appropriate for training for example?

7 A. No, not at this stage but I'm not sure whether they'll
8 - what will come out of this. As I sort of said, they have
9 this amalgamated entity and they're - they maybe - I think
10 they'd be considering their options and looking at all
11 those sorts of things, but you'd probably better ask them.

12
13 Q. I think there is mention somewhere that they are
14 training two of the technical officers up to be flood
15 operations engineers?

16 A. They've identified some of the engineers that are
17 doing that role as potentially being able to do it but it's
18 - as I sort of said, they'll look at the glare of publicity
19 from this and go - yes. You know, because for a young
20 engineer and you go well - potentially it could impact on
21 their careers and things like that. So it'd be - yes,
22 you'd have to ask them but I think it's - it just creates
23 some issues for them.

24
25 Q. Now you mention at paragraph 15 that you sat on the
26 Institute of Engineers water panel in Brisbane for a number
27 of years. Can you explain to me what the Institute of
28 Engineers water panel is?

29 A. This is the local panel. We have a water panel here
30 in Brisbane which sort of does - organises presentations,
31 half a dozen presentations during the year.

32
33 Q. So just for professional development, that sort of
34 thing?

35 A. Yes. So if you're on the panel you help drum speakers
36 up and attend the meetings and vet the things and stuff
37 like that.

38
39 Q. And was that recently?

40 A. I haven't - I haven't done it for over 10 years now
41 since I had kids. I had home pressures not to be involved
42 in as many extra curricula issues - activities, yes.

43
44 Q. At paragraph 16 there's a reference to the Commission
45 informally approaching Government seeking an expert
46 hydrologist. I'll read it to you?

47 A. I guess what I was trying to say there - maybe it's

1 not as clear - sort of saying that - some of these issues
2 are pretty - you know, of a hydrological nature and require
3 a little bit of interpretation and sort of thing and just
4 going, how do you get that support. I was just saying well
5 maybe if I'd been a witness and wasn't involved in it, then
6 I probably could have given you some advice on it, so just
7 a bit of a challenge about how do you get that expertise
8 into it but, yes, not meaning to tell you how to suck eggs
9 though.

10
11 Q. Just returning to your current employment which is the
12 next section of your statement, we've talked about the
13 water scientific services?

14 A. Yes.

15
16 Q. And about your role managing staff. You mention that
17 one of your roles, your position description, duties is
18 provide high quality scientific and policy advice and
19 recommendations to the executive management group and the
20 Assistant Director General, Environment and Resource
21 Sciences as required. Policy advice across all those
22 topics that you've already mentioned or is there some
23 specific category?

24 A. I guess the advice that we - our group - we have to
25 translate what the technical information means and
26 translate that into say, well, in terms of your policy
27 settings and where you want to go with this, this is what
28 this technical stuff is telling you. This is the thing.
29 If they say what if we do this we'll go away and do some
30 model runs. If you do this then this means this in terms
31 of what you're doing.

32
33 Q. So it's really technical advice in the context of
34 policy development?

35 A. That's right. So it requires - but requires myself
36 and the people that work under me to - they need to
37 understand the policy --

38
39 Q. Framework?

40 A. Work and then they need to understand the technical
41 one. It's not like - there's only kind of a sub-set of the
42 people that work can actually do that really well. Like
43 we've got a bunch of people that are very technical but
44 don't - but they can't really make that translation of the
45 sort of - the thing, so you've got - I think it's important
46 to have those interface people that sort of do - can
47 understand the policy context but can also understand - get

1 the head around the technical one and do the translating in
2 that environment. And we do have - like there will be for
3 a number of - there'll be some policy working groups that
4 we would sit on for various things that are - you're there
5 as a technical expert and sort of doing that kind of role
6 with it but we don't as such sort of say - we're not
7 responsible - I'm not responsible for this policy, you go
8 away, develop it, produce it sort of thing. It's more
9 along the lines that you're part of a team that's
10 developing and you're doing that interface and that sort of
11 role.

12
13 Q. At paragraph 20 you mention that as part of your
14 position at DERM you sit on technical panels and use
15 reference groups and you give two examples there. The
16 first, I was a member of the user reference group for the
17 Ewater management development team - Ewater river
18 management development team?

19 A. Yes.

20
21 Q. Could you explain what that involved?

22 A. Yes. This is basically in this role, like what we're
23 doing - we're a member of the department and a number of
24 other departments. We're a member of the Ewater CRC which
25 is - does everyone know what a CRC is?

26
27 Q. Yes?

28 A. CRCs are like collaborative research centres, so
29 they're partnerships between government - State -
30 government agencies get federal funding and universities
31 and thing. And they're set up to do research into sort of
32 key areas and key areas of the - Ewater is one that was set
33 up in the water space and part of the objective of that was
34 to develop a national platform for modelling - for the
35 daily time set water balance type modelling. That's about
36 - it's a methodology. It's a national methodology setting
37 things. So I'm part of the user reference group for that
38 which is sort of setting the direction of that project and
39 making sure that it's going to fill all the State's needs
40 in terms of where we want - where we are seeing our work
41 going and the tools that we all need, not just today but
42 over the next 10 years doing it. So it's a way - so we
43 invest into that in terms of research dollars and things
44 like that to deliver - so we've got a kind of a thing. But
45 we get the benefit then from the Federal funding and the
46 other agencies funding that as well to deliver on that
47 outcome. So that's kind of what that.

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Q. And what sort of topics are being developed at the moment and what's the focus of that at the moment?

A. This is the river - well the river manager tool is - there's a model called the integrated quantity quality model which we currently use and this is about a tool that will replace that sort of focus and it's about the - and the things with that interface what's important is that - for example, for the Murray Darling Basin plan stuff and where the Murray is going then we'd want to have this as a common tool across the basin and using that sort of thing, so it's having a methodology type of thing. It also feeds into the national hydrology modelling strategy which falls under one of the COAG groups which is also looking at sort of getting this standardised tools and methodologies across the country because the shortage of hydrologic modelling expertise is well recognised at the national level and part of these sort of processes and projects is about - there is also a capacity building element in it as well. So they're sort of on delivering that sort of thing.

Q. And you mention that you were involved in the review panel for review of Australian rainfall and runoff?

A. Yes, not that - there's a current revision going on but in the previous revision --

Q. That's 1997?

A. Yes. There's a previous revision, I was just involved in that sort of thing. But like there's plenty - I mean, I've got dozens of these sort of things that I've been involved in but they're just sort of two. The Australian rainfall and runoff is kind of topical because it's just kind of focused in on this flood area because we haven't - I mean, because of the drought we haven't done a huge amount of flood work in the past 10 years. The focus has been on the - the focus has primarily been on the drought sort of stuff. Yes.

Q. Now you set out at page 5 of your statement your understanding of what the arrangement is between SunWater and DERM in relation to your services as a flood operations engineer. You just say at paragraph 24, practically DERM and it's predecessor departments have continued to operate on an understanding basis with SunWater similar to the 2000 MOU?

A. Yes.

1 Q. I take it that you haven't been involved in any
2 discussions about that more recently? That's the extent of
3 your knowledge of those arrangements?

4 A. Yes. We did start to sort of draft a new - as I said
5 we started to draft a new agreement but we just --

6
7 Q. Is that the last couple of years?

8 A. It was a few years ago now. We just sort of - but
9 that's basically --

10
11 MS FAAS: It was in 2003?

12 A. Yes. But it just never got finalised.

13
14 MS HENDY: Q. And I think you've suggested that SunWater
15 wanted to have its own staff doing the flood operation and
16 that gradually SunWater replaced all the DERM stuff except
17 myself?

18 A. That's right.

19
20 Q. Who most of them become Seqwater staff after the
21 changeover?

22 A. Well then two of them became Seqwater staff. It
23 wasn't only that. Like their contract was just not for the
24 flood operations. It was also for the dam maintenance and
25 stuff and as I said most of the majority of the staff went,
26 maintenance staff went over and it just left with some of
27 the operational staff and they have - and basically a lot
28 of the SunWater staff have moved out of the flood
29 operations team and they've replaced them with Seqwater
30 people and you've got the two flood operation engineers are
31 now within Seqwater as well.

32
33 Q. Do you think there are enough people who are flood
34 operations engineers? There's only the four of you. Do
35 you think there should be more flood operations engineers?

36 A. Since 1996 we've operated with between three and four
37 and some in training, so in terms of that, there's been
38 enough. There's always been enough people to do it. And
39 the view too - I think the strategies of sort of going,
40 well, having people coming through the system that are
41 potentially sort of doing, because like I'm older. I'm
42 older by almost 10 years. The last big flood was in '99
43 and you're 10 years older and you're going, well, I'm 50 -
44 I was 50 last year, so I'm a bit older. So you do need to
45 think about that in terms of like have you got the right
46 age profile of people coming through and stuff like that.
47 So I think Seqwater will put some thought to that.

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Q. Did you think - like in the context of this event and I'll ask you about it in some more detail?

A. Yes.

Q. When you were managing both a big flood at Wivenhoe and Somerset and North Pine did that create difficulties only having the four of you when you were working two on a shift?

A. There are periods of intense activity when things are happening quickly. When you get to the back end of it it's not too bad but it's just that you need the extra hands on deck in terms of when you have that period of activity. It was challenging. You know, like in a - it was challenging in a sense that we were on the back of operations in October, December, and particularly North Pine. North Pine, I think it's 20 operations or something like that opening up. So there were challenges there in terms of those sort of things. It was manageable and it was - you know, when we did it and things like - it was - and there were no issues in not being able to do it but I do think extra people would be good. I mean there's no doubt that extra people would be good. The downside of extra people is that you're longer between shifts when you're on and so just - and so the question is do you come up to speed. It takes a time - like when you're in an event you're kind of in the flow of an event. You know what's going on and things like that. Say if you're in a six man rotation in 12 hour shifts and you're on every third day then it's an extra day between the last time you're involved in it, so that's the - you have to manage that dynamic.

Q. I was thinking more about the scenario if you had two extra people to manage North Pine separately rather than like if you had the --

A. North Pine isn't as complicated. North Pine dam hasn't really got any flood mitigation capacity. North Pine dam is very much - the design of the way you operate the gates is what comes in goes out. So that's what the rule - that's what the minimum - in the manual that's what the minimum gate settings that are in there. You follow those up and what that really - if you follow those gate settings up what it produces is the flood that would have happened there if the dam hadn't been there just about so you just - you really - or pretty close to it. So you really just - so there's no real - like you don't have to think about it as much. The issue is only if something

1 happens in terms of the - in terms of if a gate stops
2 operating or if you lose power, or in this case we had it
3 happening very quickly. You know, we had a really lot of
4 flow coming in and the lake levels were rising very
5 quickly. So they're the sorts of - it's a difficult set of
6 challenges with North Pine. It's really --

7
8 Q. But I mean I guess on top of the actual operations
9 though you've got all the people ringing up to speak to you
10 about it and councils and police officers ringing about row
11 boats and --

12 A. I think the biggest thing that can happen with North
13 Pine is for Young's Crossing to get upgraded. Like that's
14 - the biggest impediment to North Pine is really upgrading
15 Young's Crossing because the difference between say back in
16 - the last time we were really - had lots of operations
17 which is '99/2000 in that period, the population using that
18 road was a lot less and it wasn't such an issue, but with
19 all the development that came out that way, then it is
20 really - it's really an issue. It's an issue for it and
21 actually in a sense upgrading that crossing would be - if
22 you upgraded that crossing, 99 per cent of the issues that
23 people have would disappear because it's really about -
24 it's really about having to take that crossing out and
25 people use it as a commute route, so that to me would make
26 a big difference to North Pine.

27
28 Q. There was another issue with North Pine in relation to
29 I understand some water getting into the room that the
30 operators had to use, there was some difficulty I
31 understand from one of the other statements, things about
32 there being some --

33 A. The issue is when this flood was going up, it wasn't
34 water in the room. The guys to operate the gates have got
35 to physically walk across like a grate and normally that's
36 well and truly above water. Now because this flood was so
37 big, like towards the top gate openings actually there was
38 water across that and they actually had to walk through
39 water to go and do the operations. So that was kind of an
40 issue that was identified as saying you need to do
41 something about that. There was a few - so there's - North
42 Pine is one that requires - because of the size of the
43 flood, that flood there is at least twice as big as
44 anything else we've seen there, so it really will
45 facilitate a whole - a review of the hydrology in that to
46 really go and look at those consequences with it. So it's
47 like in the report that they talk about we want to go back

1 and review - in the conclusions talking about wanting to go
2 back and reviewing the - review the hydrology and review
3 the security - review the security level. Like review the
4 security level of the - review the level of immunity of the
5 spillway by looking at that sort of thing.
6

7 Q. Sorry, it's Mr Ayre mentions at paragraph 412 of his
8 statement that he says, consideration should be given to
9 relocating the primary controls to the radial gates at
10 North Pine dam to ensure dam operator safety during large
11 flood events?

12 A. Yes. And that's to do with this issue that the water
13 was going across this grating and that they had to
14 physically walk across that grating to go and operate it
15 and you could alleviate that by lifting the controls over
16 that. The other issue that we had is just look at the back
17 ups that are there because it was happening so quickly is
18 sort of - and there are back up systems there but like
19 saying - I think one of the things to look at is the better
20 back ups. Are the back ups sort of systems there could be
21 better than - do they need to be upgraded. So it's that
22 whole thing in the light of this flood needs to be looked
23 at.
24

25 Q. Just moving on to your involvement in the training for
26 the flood operations engineers and the flood operations
27 centre, you mention at paragraph 32 of your statement that
28 I was involved in the preparation of the original training
29 material and this material has since been modified by
30 Seqwater. Can you give me a bit more information about how
31 you were involved in the preparation of the original
32 training material?

33 A. The original training material like in a lot of the
34 original stuff that we had for the real time flood
35 operations manuals, there were training manuals. As part
36 of that original project the training manuals that were
37 prepared about how to use the system. So they had for all
38 the menus and things like that there was a whole raft of
39 things to say if you wanted to insert data this is what you
40 do. There was a process done to do that. So it was - we
41 were involved in preparing - I was involved in preparing
42 all that material to do there. Since then as I said a lot
43 of that - well SunWater/SEQ, they've modified those to suit
44 over the years. So there's - they've been enhanced and
45 bill upon in terms of those sort of things. But I haven't
46 personally been involved in a complete --
47

1 Q. Redevelopment?

2 A. Rework of those, yes.

3

4 Q. But I take it you've had some - you've had some
5 capacity to provide feedback in relation to those?

6 A. Yes, that's right. As I sort of said, a lot of - the
7 system for - there's the system for training for the -
8 there's two bits of training. There's the stuff that they
9 do for the operators and then there's the stuff that
10 happens for the data collectors and the duty engineers
11 stuff which tends to be more one-on-one because it's not a
12 - you know, obviously if someone gets signed off on a duty
13 engineer they're reasonably experienced and with knowledge
14 and it really come downs to more training about just how to
15 use the system and stuff like that, and a lot of that's
16 pretty much just one-on-one stuff. But as I said because
17 of the contractual arrangements that tended to be done by
18 the principal, which is SunWater because I'm kind of - it
19 costs them money for me to do it, so they'd rather do it
20 and get the dough themselves for that training.

21

22 Q. You mention that during 2010 you did attend a training
23 session at one of the dams?

24 A. Yes.

25

26 Q. Do you remember?

27 A. It was up at Wivenhoe dam. I went up there for the
28 session there, spent a half day up there.

29

30 Q. And was that focused on the dam operators?

31 A. Yes. That was - because Seqwater have got - in the
32 amalgamated entity have got a whole lot of new people
33 they're bringing into their system of dam operators. So
34 there was - so the Seqwater staff did most of the
35 presenting but we endeavour when those are on to at least
36 go there, show your face so they know this is - here's the
37 other duty engineers and this is what they look like, but
38 once again I mean it's better for them to - Terry is -
39 because Terry is - pretty much this is a full time role for
40 him in Seqwater, so he's responsible for developing the
41 system and that. So obviously he's going to be the person
42 who does the bulk of the work for that sort of stuff.

43

44 Q. Now you mention that a full simulated flood event
45 training exercise was conducted in February of 2006.

46 That's at paragraph 35 of your statement?

47 A. Yes.

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Q. When you say a full simulated flood event training exercise, was that modelled on a big flood or was it a minor flood?

A. Yes, there's a big - there's - whether it's one of the design floods or something like that is picked. The flood's made together and artificial data is fed into the flood room and you simulate what would be happening at a flood and there's also a few little wrinkles that will be thrown in in terms of you lost power or you don't know this or this has happened.

Q. So it was with a large scale, pretend large scale flood?

A. Yes. It's just that there is a lot of work to get all the people. By full scale I mean everyone that's on the team is involved and you try and - the councils and others - others are involved if they're available and you actually ring the numbers up even if they're not and just tell them it's a simulated exercise, so you just go through that sort of process, so yes.

MS HENDY: We might just have a break there for 10 minutes if that's all right just to give Barrie a rest and the rest of us. What time is it?

MS HEDGE: Five to 11.

MS HENDY: So we'll recommence at five past.

SHORT ADJOURNMENT

MS HENDY: It's about five past 11 and we're just resuming an interview with Mr John Ruffini.

Q. John, at paragraph 41 of your statement you mention that - this is in relation to the heading involvement if any in relation to revisions of the manuals of operational procedures and flood mitigation at Wivenhoe, Somerset and North Pine dams. At paragraph 41 you mention that the flood manuals allow qualified personnel to make decisions based on risk in accordance with the policy settings of the Government. Which particular policy settings are you speaking about there?

A. Well, I guess the general - I guess what I was - I guess the general sort of thrust of that comment is that a lot of discussions about full supply level and those sort

1 of things that have been floating around and that the
2 general - from that context sort of there's water resource
3 plans which sort of say what full supply level is. There's
4 entitlements that are based on that. There's the
5 south-east Queensland regional water supply strategy which
6 has that figure in there which has determined what the -
7 for example, what the security objectives and the
8 augmentation strategies are that's all based on a certain
9 mode of operation of the dam. And within - from a dam
10 safety point of view in approving the manuals there's a
11 certain risk profile that delivers a certain level of
12 security for the dam and it delivers - and it delivers a
13 certain mix in terms of the varying - the manual has a
14 number of objectives and those objectives - those
15 objectives compete against each other. So those objectives
16 compete against each other so you've got to find a balance.
17 The manual gives you the guidance and the direction about
18 what the balance between those sort of things are. Now
19 there's processes that were run - there's feedback that
20 were - there were processes outside that were run to
21 establish a water resource plan. There were processes that
22 were run to establish a sort of thing. Now there were lots
23 of decisions that were made by Government in setting up all
24 those sort of things which reflect the policy settings of
25 the Government at the time when those decisions were made.
26 So similarly with the risk profile that's in there for the
27 thing. Now our job as duty engineers is to execute that
28 document in accordance with those settings.

29
30 Q. So you talk about the revisions and --

31 A. Yes.

32
33 Q. -- we've got copies of the last couple of revisions
34 which have been supplied by Seqwater. You talk about
35 having had technical input into revisions and the topics
36 that you've had input in relation to. Did you - apart from
37 - were you asked to do modelling, were you - on any
38 particular occasion. Do you recall the sort of extent of
39 your involvement?

40 A. The stuff we did as in the 1990s report and that
41 series, formed the technical --

42
43 Q. Basis?

44 A. -- modelling component of that. After that point in
45 time I personally didn't have any involvement in the
46 modelling associated with the revisions that followed on
47 for that. That sort of - but I did get to see and comment

1 on --

2

3 Q. Other people's modelling?

4 A. Yes, other people's modelling in terms of that sort of
5 work, so that was kind of my involvement. And I guess I
6 wasn't the primary - I wasn't the author of those
7 documents. I provided as part of that stakeholder group -
8 well, Brisbane City Council were on it and the other
9 councils and the duty engineers, so I provided comment as
10 to what I thought of it, yes.

11

12 Q. There's been some discussion about I guess a change in
13 focus in the latest revision of the manual and I understand
14 that partly that was motivated by some guidelines from
15 ANCOLD and some particularly some risk - I forget the
16 terminology - risk assessment or risk profiling type sort
17 of documents prepared by them. Is that - to your knowledge
18 is that sort of - was that sort of a primary motivator
19 behind the most recent changes to the manual?

20 A. Well, the most recent changes to the manual, like
21 reflecting the operations of the FEWS plugs. The FEWS
22 plugs were about - if you go back to the earlier versions
23 of the manual and you sort of say what happened - in
24 essence - in some ways they haven't really changed because
25 when you got up to those levels anyway the gates were fully
26 opened. In the revision in terms - and what's happened is
27 in looking at the ability to pass that discharge, you're
28 providing the extra capacity through the FEWS plug because
29 what you've done is you've done a re-estimation of what's
30 the biggest flood you can get. What's the biggest flood
31 you can get. And that's - and how can you ensure that
32 you'll have dam security and stuff like that in that. And
33 this is a common thing across the country where the FEWS
34 plugs are a solution that's used in a lot of dams about how
35 do you provide for these revised biggest flows that you can
36 come in. How do you provide that extra capacity and they
37 were the strategy for doing - for coming up with that sort
38 of thing. But below that, below that level things didn't
39 really change that much. I mean, there was subtleties in
40 terms of some of the - you know, maybe some debate about
41 what could be in a schedule and what could be in a manual
42 in terms of specificity. Like if you look at some of the
43 earlier versions of the manuals they're a little bit more
44 descriptive on the procedures and maybe not quite as much
45 detail. So there's just a little bit more definition on a
46 few things in there. I think - and explicitly stating what
47 the full supply level was. Well the full supply level was

1 always mentioned and it was understood. It was just
2 clarity on - you know, some clarity which is - people have
3 pointed to and - like that's changed the manual but it was
4 always there but it was just being explicit about it. So
5 that's the - from my point of view it was just about - and
6 the version before that had the FEWS plugs in there but
7 this has just provided - it's not that much different but
8 just a little bit more explicit sort of information on
9 that.

10
11 Q. Now you mentioned at paragraph 46 that the process of
12 your involvement in Revision 7 is that a draft document was
13 sent out by Seqwater for comment, then a meeting of all the
14 flood operations engineers and representatives from the
15 relevant councils was held. "I attended the meetings as
16 flood operations engineer". Do you remember was there any
17 significant debate or discussion about the most recent
18 revision or it was uncontroversial?

19 A. There was a lot of debate about wording. As I said my
20 recollection is that there's debate about how much detail
21 is in and out, and a lot of that - a lot of that, like John
22 Tibaldi was the primary author of that and - part of me is
23 going, well Seqwater is taking a more lead role in this and
24 the document has to be relevant for them. So if they want
25 a little more detail in there as opposed to me personally I
26 would say - you know, I was fine to sort of do that. For
27 them it was making it - the structure and that making it
28 relevant to how they would want to thing, but the thrust of
29 it wasn't really - I didn't have any issues with the
30 general kind of thrust of where everything went and that
31 was - you know, that was primarily --
32

33 Q. The tone of the meeting?

34 A. -- the tone of the thing. And as I said how much
35 could be used - should that go in, should that go out,
36 should that be in a schedule rather than part of the manual
37 and that was the main sort of --
38

39 Q. But there were no, from your recollection there were
40 no significant disagreements about the guts of it?

41 A. No. And as I sort of said, Brisbane City Council were
42 on there. Ken Morris was on the revision, attended the
43 meetings and things like that, so they were all pretty in
44 agreement. I guess the other thing that was different -
45 the only other thing is just some of the environmental -
46 because of the profile of the lung fish issues and lung
47 fish recovery and things because both North Pine and

1 Wivenhoe do have those and they're protected species under
2 the thing, so there's a little bit more - there's a few
3 things that were done in the manual just as - which kind of
4 for the tail end of the events to allow that to happen a
5 little bit better I guess, whereas before they maybe
6 weren't as explicitly mentioned, they became some explicit,
7 a bit more explicit in the objectives about what you're
8 trying to do.

9

10 Q. Just returning to the issue of the FEWS plugs?

11 A. Yes.

12

13 Q. Were you involved in the planning for those or do you
14 have any role providing technical advice in relation to
15 that at all?

16 A. No. That was all undertaken by the Alliance, the
17 Wivenhoe Alliance. I recollect we had a few meetings
18 during it but it was - as I said most of that was under
19 taken by the Alliance. We didn't do any modelling. I may
20 have - I may have reviewed documents from a technical for
21 Peter Allen. I might have reviewed them in a DERM role.

22

23 Q. Because he would have had to approve the works?

24 A. Yes, but I don't have any vivid memory of that but
25 that wouldn't surprise me if we provided some comments on
26 the hydrology sort of stuff, yes, at some stage.

27

28 Q. And there's also - as I understand, there's another
29 planned upgrade which is the building of a saddle dam to be
30 completed by 2035. Have you had any involvement in that?

31 A. No. I'm aware of it as part of the overall strategy
32 of getting up to full PMP immunity, yes, or closer to it,
33 yes.

34

35 Q. You might be aware that there have been some
36 allegations in the press about the FEWS plug work, if I can
37 use that term, reducing the capacity of the dam. Are you
38 in a position to comment about that?

39 A. I guess it's - if you go back to the - it depends what
40 you mean reducing the capacity of the dam. Like part of
41 the function of the dam is to be able to pass the full -
42 you know, pass - you know, one of the flood mitigation
43 objectives is the security of the dam, so you need to be
44 able to do that. Now if you go back to the earlier reports
45 and go, well what was - the earlier reports obviously
46 thought the spillway capacity as it was then was going to
47 be the design capacity and that's a common thing around the

1 country that that hasn't turned out to be the case. But it
2 still doesn't mean that when you get up to these sort of
3 levels of these sort of flows that you wouldn't have the
4 gates at the same settings they are now. And if you go
5 back and have a look at those earlier studies and sort of
6 have a look, have a look what they say, what discharges you
7 will be hitting when you're hitting those sorts of levels
8 and it's a pretty similar sort of story. So even under all
9 the old operating rules it still for the sorts of flood we
10 get you're going to get - you end up with the sort of
11 downstream flooding. So while there's been wrinkles and
12 things like that it's still - when you're getting up to
13 those sort of levels and you've stored a lot of thing and
14 you've got flow coming in you're still going to be
15 releasing but it's not an easy concept to get across.

16
17 Q. No.

18 A. Like - and there's some - some things you've seen in
19 the press that said, well if the FEWS plugs weren't there
20 we would have stored it right up to the top and you're just
21 going, well - you know, you've got a dam safety expert on
22 your Commission, get an opinion from him of what he would
23 think of that as an operational procedure from a security
24 perspective because it certainly wouldn't be an endorsed
25 practice.

26
27 Q. Now you've said - and just to go back to this full
28 storage level issue in the sort of last three months of
29 last year, you say that you had no involvement in recent
30 modelling for the reduction - sorry, this might have been a
31 reference to after the flood, at paragraph 53?

32 A. Yes. Now after the flood.

33
34 Q. Okay.

35 A. Like after the flood.

36
37 Q. When they dropped it down to 75?

38 A. 75 per cent. I guess the - I wasn't involved in doing
39 any modelling to do that. Just clear that that wasn't done
40 as a flood release. As my role - and I sought
41 clarification as to - as a duty engineer, like what was --

42
43 Q. Whether you were going to be involved?

44 A. What were the rules under this sort of concerns. Like
45 my understanding is it's a flood recovery measurement, like
46 people have been damaged. They want to go back and start
47 rebuilding their lives and getting it, so this is a measure

1 to give them some temporary confidence to go back and start
2 that investment process. So that's kind of my
3 understanding of the purpose of the reduction.
4
5 Q. You said that some of your team were asked to comment
6 on the technical aspects of the work conducted by QWC
7 hydrologists?
8 A. Yes, you've probably got a copy of that QWC.
9
10 Q. We've only got the names of the scientists?
11 A. In my submission there the comments are in there in
12 the attachments, what they've actually provided.
13
14 MS FAAS: Attachment JLR-10 is just the email from - email
15 to Craig and it's just got some detail attached but QWC, an
16 attachment to their submission is a report that they -
17 Seqwater had a report that they produced about the 75 per
18 cent and they used work from QWC.
19
20 MS HENDY: I've seen the material from Seqwater and the
21 Queensland Water Commission but I haven't actually seen
22 anything from DERM about it?
23 A. From us then we can provide you with a copy of our
24 comments if they're not there. So you only provided the --
25
26 MS FAAS: Well the attachment - did you provide just the
27 email Caroline?
28
29 MS HENDY: It is here, sorry. It is here. I assume this
30 is - sorry about that - review of WOFNET model
31 modification.
32
33 MS FAAS: Yes, that's the technical stuff.
34
35 MR RUFFINI: So the guts of it is my blokes were just asked
36 to go --
37
38 MS HENDY: Q. Look at the numbers?
39 A. Just look at the numbers. They weren't asked to go is
40 this what you should be looking at to analyse this problem.
41 It was purely look at the numbers. It wasn't is what we're
42 doing making sense. Okay.
43
44 Q. Okay. But you personally weren't involved in that?
45 A. No.
46
47 Q. Other than as a supervisor I imagine?

1 A. No. But we do have - like as I said, we've got the
2 tools and capacities to look at that problem, that issue in
3 quite a bit of detail.

4
5 Q. And from what you've said previously you've been
6 involved in looking at those water resource, water security
7 issues?

8 A. That's right.

9
10 Q. And you've provided similar sort of advice?

11 A. And we've done a bit of work in the past looking at
12 farmer risk profiles and asset allocations and systems to
13 sort of use those sort of risk based sort of systems and
14 things like that, so there's a bit of - there's stuff there
15 in terms of that sort of thing. You know, like someone
16 could define the problem we could do the work to inform
17 people of what that might mean.

18
19 Q. Now just moving on to page 11 of your statement, you
20 talk about the - at paragraph 65 the January 2011 flood
21 event which impacted Wivenhoe, Somerset and North Pine
22 catchments between Thursday, 6 January 2011, and Wednesday,
23 19 January can be categorised as a large annual exceedence
24 probability of one to one hundred to rare annual exceedence
25 probability of one to 2,000.

26 A. Yes. What does it mean?

27
28 Q. No. No, I have made it that far, John. I guess --

29 A. What's the basis for it?

30
31 Q. Is that a final figure or is that a working figure or
32 is there more work going on in relation to the refinement
33 of that - you know, the probability of that event?

34 A. There will need to be more work done in terms of
35 defining a definitive probability there. And I guess that
36 process has started because I guess an important thing to
37 realise is that particularly with the stream flow data that
38 comes in during an event, until you actually go and
39 physically visit a site, and verify that the station -
40 verify that the station has worked properly, that the
41 cross-sections haven't changed, then you're really dealing
42 with what, in a DERM sense, we would classify as
43 unvalidated data. So you need - part of our - from a DERM
44 perspective part of our ISO 9000 accreditation for doing
45 that is we go out and we visit the sites, we check, and
46 then data moves from being unvalidated data to validated
47 data. Now we started that process in terms of for all -

1 while Seqwater didn't use our data directly they do hook
2 into our stations, so we're going out and doing the legwork
3 in terms of all that sort of thing, so we're a fair way
4 through that, that process, and then we'll - and we're
5 looking at the rating curves to see if they've changed with
6 the - sorry, step back. These gauges measure height. Now
7 to turn them into a discharge you have a thing which has
8 for this height you get this sort of flow. That's called a
9 rating curve. Now they change if the channel cross-section
10 changes. So for the same height if you get a big flood
11 come along and scours out the bottom, then for the same
12 height you're going to get more flow. And it's well
13 understood but it needs to be - they need to go out, do
14 that survey, check it.

15

16 Q. Is that what they call, is it barfemetry?

17 A. Barfemetry usually refers to in a tidal section where
18 you actually measure the height - the bottom of the channel
19 under the thing. That's barfemetry. So it is like that.
20 It's the barfemetry but it'd also be like just a general
21 land survey above that. So that's sort of a process that
22 will have to be done as part of that sort of thing. The
23 same thing with the rainfall stations, there's a bit of
24 validation need to go on to make sure that you believe that
25 the rainfall thing. That's all a standard sort of process
26 that goes.

27

28 Q. And is that happening with BoM as well?

29 A. Yes. BoM would be sort of doing it. Now we've gone
30 through - because it does create issues. I mean because
31 the data is published in real time, quite - and the BoM
32 part publishes a lot of this data in real time right. They
33 get this data in real time and even though they do have
34 caveats on it going do not use - warning unvalidated data.
35 This data is in real time, then it has. Now this has
36 actually been the route of one of the big confusions out
37 there is to do with the Wivenhoe lake level automatic gauge
38 which was impacted by - it sort of - it was impacted by the
39 drawdown over the spillway during the event. Okay. It was
40 impacted by the drawdown of the spillway during the event.
41 Now what that means is as - I don't know if you've been out
42 to the dam at all?

43

44 Q. Yes, we have?

45 A. You know where the gates are and you can sort of see
46 those walls that go out and draws in there. Well half way
47 through that that's where the automated gauge happens. Now

1 what was happening when the gates were opening up is that
2 the water was drawing down through that, as the velocities
3 increased in that channel, the energy, it converts head,
4 you know energy, potential energy into kinetic energy,
5 potential into kinetic, which means you have velocity. So
6 that means when you draw down you get a drop. You get a
7 drop in there. So you had the draw down. Now you might
8 ask the question, well why do the silly buggers put the
9 bloody sensor in the middle of the spillway when you knew
10 it was going to draw down during this sort of event but
11 it's there because it's used for water storage measurements
12 as well. So during the drought that's the best place to
13 have it because you can get a full measurement of the lake
14 level right down to the lowest point, so that's why - you
15 know, that gauge that's there serves multiple purposes, but
16 look, this is well understood. It is well understood that
17 these gauges are impacted by that and that's why there was
18 a whole set of manual gauge bores on the outset of the wing
19 wall that were read on a regular basis during the flood
20 event because this phenomena is well understood.

21

22 MR MacSPORRAN: Q. John, when you say draw down you mean
23 the automatic gauge is measuring a lower level in the dam
24 than is actually there?

25 A. That's right.

26

27 MS HENDY: Q. I'll get you a pen.

28 A. If I have a pen - I was going to do the lecture thing.

29

30 MS HEDGE: Q. Is the graph in one of these appendices?

31 A. It is, yes. It's in the main context of it.

32

33 Q. Wait till Liz comes back to explain but I just thought
34 we might find that graph. We're just going to find that
35 graph. You know the graph that shows the two lines?

36 A. But it is - it's important to understand in that it is
37 - it's on page 86 of the report. Okay. You can sort of
38 see now that - that there, that drop there is due to the
39 draw down in the spillway. Okay. The dot - the crosses
40 are actually what was happening. Now this has caused all
41 the crap in the paper because the BoM were publishing this.

42

43 MS HENDY: Q. The automatic gauge?

44 A. The automatic gauge and even though they haven't
45 warned - and we had the guy in Melbourne - and look I'm
46 not --

47

1 Q. It's just what happens?

2 A. I'm not bagging him because he's just looking at that
3 and going woo, and they're going hang on, I'm seeing - and
4 they're saying, look, the dam was full and you blokes were
5 bloody opening up and creating this flood. You've created
6 this flood. You didn't need. It was dropping. Why were
7 you opening it up. And we were opening up because the dam
8 wasn't falling, it was rising. That drop there is purely
9 due to the velocity head drop. Now you can calculate that
10 and Peter Allen's had a crack at calculating it and that's
11 about right. The velocity drop measures up with that sort
12 of thing, so you do get that sort of drop. But that is -
13 and Seqwater were on the verge of going public and
14 explaining that when the Commission of Inquiry got called
15 and then everyone just stopped wanting to give any
16 information out until the ground rules were established. I
17 think that's created a lot of the angst out there. This
18 whole thing has created a whole lot of the angst that's out
19 there and the misinformation. So it's going to be a real -
20 it was mentioned in the paper again on Saturday where
21 Hedley Thomas, Hedley was going on about, well, this is the
22 thing. We need to get to the bottom of this. There'll be
23 a core technical dispute. But there's no real dispute.
24 Anyone - people - this is a well understood phenomena and
25 there's a reason. And you're going, why was it there.
26 Because there's more than one job. It's not just flood
27 thing. The problem was well understood and there were
28 measures in terms of the gauge bores and that to deal with
29 understanding it.

30

31 MR MacSPORRAN: Q. The gauges on the outside of the wing
32 of the spillway show the correct intact level?

33 A. That's right.

34

35 Q. Which is the upper on those two on the graph.

36

37 MS HENDY: Q. Would there be a similar graph in relation
38 to the '99 flood?

39 A. Would there be a similar graph? The '99 flood the
40 velocities were a lot less. It only --

41

42 Q. But would there be a discrepancy like that?

43 A. I'd have to check.

44

45 Q. Not to the same extent?

46 A. I'd have to check. There might be. There might be.
47 But as you can sort of see, when you get down to these

1 levels, which is much bigger than the '99 release, then the
2 discrepancy almost disappears because you're just not
3 getting the head different. You're not getting the
4 difference, the velocity difference.

5
6 MR MacSPORRAN: Q. Because it's much lower level water
7 left.

8
9 MS HENDY: Q. Would you expect that there would have been
10 that sort of gap in the 2011, October releases or that was
11 quite a small --

12 A. No.

13
14 Q. No.

15 A. Like I haven't got it with me but there's the model
16 study, the original model study, the spillway which gives
17 the discharge velocities based on the physical modelling
18 that was done in the thing and --

19
20 Q. That's in the '99, '95?

21 A. And there's an earlier work as well. Peter Allen did
22 all that work so Peter's really ove - he's the best man to
23 ask about this sort of thing because he sort of did all the
24 physical modelling that was involved in doing that sort of
25 thing and he shared some calcs with me that he's just - just
26 to satisfy his own thing about what was going on and he's
27 sort of showing that sort of thing, but as I said by the
28 time you get to here the drop isn't - the discharge rates
29 are such - and as I said that's still quite a significant -
30 we're still discharging at that which is a lot - like the
31 '99 event was only 1500 cumecs, 1800 cumecs, so you're not
32 going to see it much on that sort of thing.

33
34 MR MacSPORRAN: Q. So you do calculations to establish
35 where the greatest discrepancy arises by the volume of
36 water creating the velocity?

37 A. Well you go there and you take this level and you know
38 what the spillway discharges are. You go to the model
39 result. You can read off what the velocities are and then
40 you can estimate the velocity head drop as you go down the
41 thing and you can compare that with what was observed and
42 you can sort of say that that's the sort of thing, but this
43 is typical. Like when you say a gauge hunting like this
44 going up and down you know there's something wrong. Like
45 most hydrographic staff would sort of do that sort of
46 thing. But having said that, I sort of - you know, those
47 insurance companies of Australia reports kind of fell into

1 the same trap too but in the absence of not having this,
2 what else are you going to do. But it is - it is an
3 important story to get out there that because I think
4 unfortunately that's really created a lot of the angst
5 that's out there.
6

7 MS HENDY: While we're on the topic of those allegations,
8 I guess the other significant allegation in relation to
9 data collection of the dam is the issue of the rainfall
10 over Wivenhoe lake and I guess the allegation that's been
11 made that the reverse calculations are extreme or --

12 A. It's the same thing. It's the same issue. All the
13 reports sort of saying is, okay - like this is really the
14 lake level that happened and if we do a reverse routing.
15 In other words, we know what's going out from the gate
16 settings. We know what the lake level is, so we know what
17 the differences in volume is so we can work out the in flow
18 hydrograph which is - if you look in the report that's the
19 --
20

21 MS HEDGE: Q. It's in the executive summary, isn't it?

22 A. It's on the front page here too. Like that's that
23 report.
24

25 Q. That one, yes?

26 A. So that really - that on page - is 5B(iv). And that's
27 just the flow into what - so for Wivenhoe dam that sort of
28 says reverse routing, just take the levels what you're
29 releasing, and that's why it goes up and down a bit because
30 it's not exactly thing, so that's kind of the flows that
31 were coming in to do that. Now we've done a post event
32 analysis that says, right, if you want to get that sort of
33 discharge, then you need to be putting more rainfall on the
34 storage to get that. And Terry did the work and in the
35 report he said, well look, basically like if we had to do
36 that, then this would mean you'd have to bump this rainfall
37 up by this much. It's either that or there's a bigger
38 spacial extent of rainfall but it's simply saying that -
39 and this is what we saw during the event. If we were just
40 using the rainfall we were recording we weren't replicating
41 the rates of rise in the dam because there was something
42 missing in terms of the rainfall intensity. It's the same
43 thing in the Lockyer Valley. The gauges didn't pick up the
44 rain that fell that produced that flood in the Lockyer
45 Valley. The modelling didn't show it. And the Bureau is
46 going, gee, I think I need about 400 millimetres about
47 there to actually replicate this behaviour that they were

1 observing. So quite unusual storm in a sense that it was
2 producing these localised flash flood events basically
3 embedded in this bigger event. So that was the thing. But
4 the lake level - this is your most robust information that
5 you have. The lake level stuff is the most robust because
6 you're actually - it's verified, observed, and you know
7 that it's right and you have most confidence in there. So
8 being able to look at that and the same thing with the gate
9 discharges. Like because you've got - there's been model
10 studies done plus or minus 5 per cent at max probably out
11 on that sort of thing because that's the accuracy of that,
12 so you're going to know - if you want to do a volume
13 balance at any point Wivenhoe dam is the place to do it
14 with the manual readings because you're going to have the
15 most confidence in this sort of information. So that's the
16 observation. So the story runs is, no, forget that. We
17 believe that and we believe you guys are just cooking up
18 some rainfall to justify the fact you screwed up and you
19 released too much here. So they're still on about this
20 thing here. That's what I'm saying. This thing here
21 caused all the problems and continues to sort of - the
22 conspiracy theorists will have a field day kind of thing.
23 And the rainfall bit was just purely saying, look, to get
24 that you'd have to have this much rainfall but it mightn't
25 be exactly that much rainfall. It might be a slightly
26 different spacial extinct. You don't know exactly what
27 happened but it's just indicating the point that you have
28 to get this happening. You have to replicate this and in
29 terms of with the rainfall that we had observed, we're
30 obviously missing some rainfall somewhere because we
31 couldn't get that response.

32

33 MS HENDY: Because of the rises in the lake?

34 A. Yes, that's right. Because of the volume coming into
35 the lake.

36

37 MR MacSPORRAN: Q. So your release strategy is based on
38 the actual level that's in the lake as observed?

39 A. Yes. And see this is the criticality. Like on that
40 critical period when it was on the ramp up, see I went home
41 - I went home in the morning. I went off shift and Rob and
42 I went off shift and then the heavy rain had started but it
43 wasn't - but the prediction at that stage was only 50 to a
44 hundred mil. We ended up getting over 300 mil in 12 hours
45 in that sort of thing. The predictions were saying, 50 to
46 a hundred mil, and you end up getting 300 mil. Not
47 predicted by any models, not predicted sort of thing, just

1 completely - the same as the flash flooding that had
2 occurred the other day which was not predicted either. You
3 know there was some broad scale warnings but it wasn't the
4 absolute, so it wasn't predicted. So on that rate - and
5 that's what I'm saying on the rate of rise we had to be
6 quickly looking at the - calculating what was coming in by
7 looking at the rates rises and what you were releasing
8 because the modelling kind of wasn't getting it. But Terry
9 and John can talk more to that because they were actually -
10 I was home cloistered in my bed until I woke up and thought
11 what's going on. What's happened. What's happened while
12 I've been asleep.

13
14 MS HENDY: Q. All right. Look we'll just keep going
15 through this statement and then I want to take you through
16 the event log and some of those events in a bit more
17 detail, John. You mention at paragraph 69 the data
18 collection and flood modelling systems used to support
19 decisions made during event perform well and assisted in
20 informing decision making in accordance with the manual.
21 Have you identified any improvements that - you've
22 mentioned that they are currently upgrading some of the

23 --
24 A. Yes. The system is - the system is currently under
25 review. Like there's a lot of modern IT stuff. Like this
26 is - like a mid '90s vintage software, so in terms of IT
27 practices there's a lot of advances that have happened in
28 that intervening 16 years, and this new system is going to
29 take advantage of a lot of those sort of things. I think
30 general thrust of that has been - would be to sort of take
31 advantage of the modern IT configurations and the way - and
32 the benefits that you have in terms of - with all that new
33 technology about how you get information in and out and
34 also distribute it. So this new software is going to sort
35 of tick a lot of those boxes in terms of that sort of
36 functionality. The visuals are a lot better. Like
37 compared to what you could do 16 years ago in the visual
38 graphical displays and how you can actually interpret and
39 assess information will be a lot thing. There'll be direct
40 feeds of a lot of the Bureau stuff rather than having to
41 sort of manually do sort of things which is like a great.
42 Like if this new system wasn't being developed, then you'd
43 be certainly saying can't we upgrade this system to do it
44 but that's sort of happening. So I think they're really
45 good features and they'll facilitate a lot more flexibility
46 in doing forecast runs and things like that. So there's a
47 lot of stuff happening in that space. So there will be

1 redevelopment of operations models and things like that as
2 well. So there's lot of that sort of stuff will happen in
3 that space as well but it's one of those things like I
4 don't think you're going to this new system I think you
5 probably - you've got to draw the line and say - if I've
6 got a functional system that can work, like put the
7 investment into the new system. Like I don't think there's
8 any - like I'm not seeing any criticalities in terms of the
9 timeframe that says stop the new system, just really focus
10 on that sort of thing. And the new system was run a little
11 bit during this event. Like the developer Terry did run -
12 like he sort of - he was running --
13

14 Q. Testing it?

15 A. -- bits and pieces in parallel when he had a chance to
16 sort of test how it was performing. It was really good.
17 Like it was delivering pretty comparable results in terms
18 of that sort of thing which also gave us confidence that,
19 one, the stuff we were doing is good and also the stuff -
20 the new system was heading in the right direction.
21

22 MS FAAS: Q. You're not improving the system because
23 there was something wrong with the old system but just
24 because you wanted to upgrade the IT?

25 A. These - as systems get older and the technology moves
26 them by the maintenance becomes more difficult because
27 you're dealing with older style software and things like
28 that, so to continue you've got to make investment in doing
29 this and that, and while this is a - the original
30 development idea was a very - was done under an open
31 systems philosophy which means it was pretty generic and
32 transportable and usable and things like that, it is - as I
33 said it's 16 year old technology. You really want to
34 upgrade your systems. I think the board got a really good
35 return on their investment to have it run as long as it did
36 but it's identified in the report the thing - the Seqwater
37 prepared a report previously identifying the things that
38 were starting - the aging issues and the things that needed
39 to be done and replaced and that was part of their case for
40 upgrading the software but none of that really --
41

42 MS HENDY: Q. And is it called FEWS? Is it FEWS?

43 A. It's the FEWS platform and it's being done by a
44 company called Deltara's which they used to be Delft which
45 is a big Dutch concern. It's been - that system has been -
46 the FEWS platform has been adopted by the US national - the
47 US National Weather Service in the US. So it's been

1 adopted by those sort of things and a number of other
2 things around. So it's got - it will have a pedigree in
3 terms of people using it for flood warning systems, not
4 just in here, overseas, and the benefits of that are that
5 the users of this system will be able to leverage off the
6 development investment of major US agencies like the
7 National Weather Service, so it just means you're going to
8 get - there's a lot of benefits in doing it. The Bureau
9 have been evaluating that too as a platform that they might
10 move to but they haven't kind of made that decision as yet.

11
12 Q. You mention at paragraph 82 that there's presently a
13 review being conducted Australian rainfall and runoff?

14 A. That's right.

15
16 Q. And you say, "In my opinion it would be beneficial if
17 the review of the flood mitigation manuals could dovetail
18 with the revision of Australian rainfall and runoff". Is
19 there any particular aspect of the review of Australian
20 rainfall and runoff that you think needs to be looked at at
21 the same time that the manuals are reviewed?

22 A. A lady called Janice Green is heading up the review
23 process for what I'd call the key core part of it which is
24 about doing the rainfall intensity bits up to one in a
25 hundred years sort of thing, and the temporal patterns, and
26 they're also looking - in their charter is to also look at
27 climate change issues. So while a lot of this is at - in
28 terms of from a dam safety point of view not so much
29 because that's - we're at this end here but in terms of --

30
31 Q. The PMS, the probable - they've already been sort of
32 upgraded --

33 A. That's right.

34
35 Q. -- in light of those changes, haven't they?

36 A. But interpolating down at the - once you get into the
37 operational stuff, more frequent things, then suddenly
38 you're sort of into this space about where they're
39 reviewing and, so like how do you - do you want to sort of
40 seek early advice about what's happening to the south-east
41 Queensland stuff if you want to do it. Do you want to do
42 that. Also like dabbling with the issues of climate change
43 and what that means in terms of where that might take this
44 sort of stuff. So is that going to be in the
45 consideration. So it's just that - I think when you're
46 looking at it you just need to really - would you like to
47 do something, then as soon as you finish, this thing comes

1 out and you've got to go back and revisit the whole thing.
2 So there's just - just having an awareness that this body
3 of work is going on and that somehow you have to work in -
4 if you're going to do something, you want to work in some
5 consistency with it.
6

7 Q. At paragraph 14 - sorry, page 14 of your statement you
8 talk about the Bureau of Meteorology and the forecasting
9 there?

10 A. Yes.

11
12 Q. Obviously, I mean I take it given your role at the
13 department you were appraised of the seasonal outlook --

14 A. That's right.

15
16 Q. -- early on.

17 A. And this is where I guess - I put that in there
18 because there's this false impression out there that
19 somehow people knew that there was going to be this flood
20 of record happen in January, that it was well known and
21 understood and all the signs were pointing to this sort of
22 happening. I'm just flagging that the reality is that,
23 what is the sort of core tools that are floating around
24 that people can reference and one of these - one of the
25 ones is the ENSO - this particular thing by the BoM which
26 is their version of SOI. Like there are plenty of other
27 people who - the thing to understand is like they're not -
28 there's not just one way of doing it for these sort of SOI
29 based thing. They're like cars. They've all got four
30 wheels and an engine and a steering wheel but there's
31 different flavours of them out there. But this is --
32

33 Q. Because is there some sort of seasonal forecasting
34 done within your department for the long paddock?

35 A. Within the climate centre of excellence a guy called
36 Ken Day. Ken's - Ken's an expert in this sort of area. He
37 did his PhD on it. He's been working for years on his own
38 little pilot system called Spotter which is about sort of
39 giving sort of seasonal forecast which hasn't been fully
40 published yet so it's not out there. So they produce
41 seasonal forecasts on the basis of that. But having said
42 that - it's like I spoke to Ken and he sort of - he said
43 it's a pretty similar story to this in terms of the sort of
44 thing. But this is just about - all these seasonal
45 forecasters give you a probability assessment of in this
46 case above median rainfall. That's it. And it doesn't -
47 now the stuff we're talking about is right at the end of

1 the distribution. So it might - so what difference does
2 that make. If you get one of these forecasts it might tell
3 you that instead of a 1 per cent chance of doing that it's
4 now 2 per cent. That's it. It's still a very unlikely
5 event to happen. It's not giving you a basis for sort of
6 saying just because we're saying 60 to 75 per cent above
7 median rainfall, then this is what we need to do. I just
8 gave it a few dates to sort of illustrate look it changes
9 quite a bit. It goes up and down and whatever, so you
10 really need to do that. So that's kind of the - this idea
11 - you hear - we're hearing a lot about we knew it was
12 coming. Everyone was predicting it was coming. I'm going
13 a lot of people were making commentary on seasonal outlooks
14 but from an engineering or a scientific point of view, for
15 you to be able to make a decision on it you need a peer
16 review defensible study that validates that this tells you
17 something that you can actually --

18
19 Q. Act on?

20 A. -- act on, and clearly we're not - we haven't got that
21 sort of thing. And these - like these sort of things, like
22 farmers use them a bit as risk management tools and things
23 like that, so it's not capable of doing that sort of thing.
24 I just kind of wanted to get that message in the statement
25 because I just think there's a fair misunderstanding that
26 you just see a lot of - I'm seeing a lot of statements that
27 you knew it was happening, why didn't you - the Government
28 knew it was happening why didn't they do something about
29 this in August. Everyone knew it was going to be -
30 Campbell Newman was out telling us it was going to be a big
31 flood and everyone knew it was going to happen and how come
32 you didn't do anything. You go well, if you show me the
33 forecast that says - if you show me the actual science that
34 says that was going to happen and here is a peer review
35 accepted document that sort of says it then I could act on
36 it. You might be able to think of something you could act
37 on it, but like in this case you're going, no, that's the
38 sort of thing. As I said we've done a lot in this space
39 with Ken's group looking just from the point of view of
40 looking at asset allocations and how people might better
41 manage their allocations and those sort of things. But as
42 I sort of said the trouble always is it's a probabilistic
43 forecast. It's not a - most people to act on something
44 they want a deterministic, this is going to happen. So
45 that's a sort of an issue with it. And the other bit that
46 I've offered there is just the actual forecast rainfall.
47 Now that's when you get into the numerical models that are

1 running and stuff like that. Now I provided in my
2 statement just a copy of the advice that Seqwater got from
3 the Bureau.

4

5 Q. It's something I did want to ask you about that John
6 before I forget is in their - I think it's Mr Baddiley,
7 isn't it?

8 A. Yes.

9

10 Q. He suggests that there might be the option of
11 developing a product for Seqwater in relation to the dam
12 catchments and I wondered if during the flood event you
13 were actually using such a product or were you using just
14 the general forecasting? What were they actually giving to
15 you?

16 A. The product they get - Seqwater get the QPF from the
17 Bureau.

18

19 Q. And is it a QPF for each dam catchment?

20 A. Yes, for Wivenhoe, Somerset, North Pine dam.

21

22 Q. Because when you see the situational reports and
23 there's the brief forecasting but at the top I just wasn't
24 quite sure what that related to?

25 A. Okay. There's two things. In the report here we talk
26 about - so in the report here we talk about the forecast -
27 the available forecast products that we have to consider.
28 So that's in say in chapter - page 55 of the report. If we
29 turn to page 55, right, so the products there are - in
30 terms of things that we have available - this is when we
31 get into the event stuff, what's happening during the
32 event. The 24 hour quantitative precipitation forecast
33 which we considered to be the most robust product for us to
34 look at because that's specifically tailored to
35 Wivenhoe/Somerset. It's a product that they actually put
36 out and we get on our phones. Like every day we get on it
37 - twice a day we get it sent to our phones and it gives us
38 an estimate of the rainfall that's happening for Wivenhoe,
39 Somerset and North Pine dam. So it gives you kind of a
40 good measure on it. The weather radar stuff - now the
41 thing that weather radar is those colours you see are
42 actually droplet size, so they're not actually rainfall
43 intensity. They're actually measuring the droplet size.
44 Now it just so happens for a given storm they're able to
45 calibrate for a given synoptic scenario like for this sort
46 of weather, then we know that these droplet size usually
47 means this sort of intensity. So that's kind of thing.

1 And one of the things that happened during this event is
2 that that didn't work as well as it possibly could have
3 because they were pretty fine droplet sizes. But that's -
4 that's a learning for the Bureau in terms of calibrate -
5 and you know, if I was probably a more sophisticated radar
6 weather watcher I might have been able to interpret it
7 differently as well.

8

9 Now the SILO meteograms, now the rest of the product -
10 so product one if you like, the QPF is actually a
11 subproduct of the others that has some met interpretation
12 into. When you get into the SILO and the interactive
13 weather ones they all sort of come off these BoM access
14 models. Now that's really unvetted, so they're just as the
15 models come out.

16

17 Q. From BoM?

18 A. BoM. So they're just weather models. And they're
19 available to do that sort of thing. Now SILO produces some
20 kind of summaries at a three and a five day scale that you
21 can kind of look at, and the interactive weather stuff is
22 some of the things. This is one of improvements that's
23 going on in the FEWS system is that that stuff is going to
24 be ported directly into the models and be able to sort of
25 thing and that's - so that's kind of one of the things.
26 And you'll see there are a few plots in the appendices of
27 what that output sort of looks like that they presented in
28 this report for this sort of thing. So they're the
29 products that are available. And as I said the 24 hour QPF
30 would be the one we'd consider to be the most robust
31 because it's a shorter timeframe. Also it's a got a little
32 bit of - it's not just raw model output. There's some
33 intervention about assessment about whether it's any good
34 or not. And as I said we've given an assessment of well
35 how well did that perform. So in table 6.2.1 you can sort
36 of see --

37

38 Q. I did want to ask you about those photographs that -
39 you know those images how they have got the multiple.

40 A. Yes.

41

42 Q. The predictor ones and the actual - the colour
43 pictures. Do you know where they are John?

44 A. Yes. They're in appendix, the rainfall appendix.

45

46 Q. They're actual photos of computer models?

47 A. It's in appendix 2.

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Q. Yes, those.
A. Now those --

MS HEDGE: Q. Sorry, what page?
A. Page - appendix J, page 203 to 20. They're just two different ways of presenting information.

MS HENDY: Q. So these are actually generated by --
A. There's two things here. The actual rainfall that's out of the FEWS platform. So what's happened there is that - all this - what Seqwater have done here is into this new platform they're developing they've sucked in all the access model data, so all the forecast data. They've sucked in the actual recorded rainfall data and they've produced --

Q. And is that validated rainfall data because you were talking before about how --
A. This is still operational data because the validation of that - you know, but the validation of that whole rainfall set would take some time. And then they've fitted - so they're actually using the weighting process in that they've produced a representation of what the actual rainfall might have been during that period. Obviously that's not definitive because it's still - it's still an interpretation of the rainfall stations that they have sucked into this system and done the thing, but it's probably as good as any that you can possibly get. Now the other coverage is here. These are just taking that access product and just preparing similar sorts of plots. Now just - the idea there is just to give you a picture of what - that the forecasts changed over time. And the couple of take away messages I'd have out of this - like, the access models aren't bad. What they're telling you - and they're as good as people - and it was a little bit disappointing to see people getting on and rubbishing the Bureau and saying the Bureau - because it wasn't what the report didn't say the Bureau got it wrong. It said they're as good as they can but you're not really - it's not something - it's not something - it's not of the level of accuracy degree that you're actually going to release to cause damaging floods in Brisbane ahead of inflows happening on the basis of something that might happen two days out given the level of this sort of accuracy. That's the - this sort of thing. You knew this rainfall was coming and the thing. And the other message that I guess looking at - the overall

1 picture that the access models during the event, what they
2 were saying is you had a rainfall event up there and it was
3 moving south. It's moving south and sometimes coming in,
4 which is sort of what happened. Now the timing of exactly
5 where the heavy bits fall changed constantly. So depending
6 when you looked at it from one hour to the next it would
7 change because they'd run their models and it would move a
8 little bit here and a little bit there. But particularly
9 early on - earlier on we were seeing a lot of rainfall
10 falling over Brisbane. They were sort of predicting it
11 would go south and then sort of come over Brisbane. And so
12 from our point of view, like some of the comments why
13 didn't you release earlier. Well the manual doesn't allow
14 it and anyway if you look downstream the consideration of
15 saying there's a lot of rainfall going to fall south of the
16 dam and so you'd have to - you know, you'd have to ignore
17 all your low flow - it's like you'd have to ignore all your
18 low flow provisions and then say ignore your forecast and
19 say the forecasts are completely wrong and I'm going to
20 sort of create some damaging floods in Brisbane. So that's
21 the sort of basis. So look, they're there to tell you -
22 the story that you need, that takes away from this is that
23 while they're helpful, they're not - they don't reflect
24 what actually happens and they change in time and there's a
25 degree of uncertainty as you move - the further away you
26 are the less certainty that you have and the closer you are
27 then the tighter, the better it is but even then it tends
28 to over predict. It can overcook it which is sort of what
29 we're seeing that constant message in the thing that they
30 were a little bit under initially and then the later
31 forecast swere somewhat over. So it's sort of over and
32 under, over and under, which isn't bad but it's just not -
33 it's a basis to take it - you look at it and say what does
34 it mean but you're only going to act to a certain degree on
35 that level of information. Does that make sense? I mean,
36 it's a bit of ramble. Any more clarification on these
37 diagrams?

38

39 MR MacSPORRAN: Did you want to - it's another hour.

40

41 MS HENDY: Yes, sure. That's probably - there's only one
42 other data collection issue that I wanted to ask you about
43 before I forget and it probably won't take very long, but
44 when we've been looking through the emails that we've
45 received from Seqwater, Seqwater emails, we've come across
46 reference to you going out and manually checking the city
47 gauge?

1 A. Yes.

2

3 Q. In the middle of all this. What was that about?

4 A. Well that was at the end of the - the flood was at
5 Brisbane and we were off shift and we thought we'd go and
6 do a manual read of the gauge.

7

8 MR ROLLS: Dedication.

9 A. It was just kind of - we just thought, well, surely
10 someone should do a manual read at the peak. It was a bit
11 of a - we indulged ourselves with a bit of hydrology
12 nostalgia, the engineers are off shift. So yes. But it
13 was also like - there's a serious side to it because it's a
14 manually read gauge, so we just went over to the - we did
15 two - two things happened. The guys, one of the guys went
16 to the city gauge and put a little marker on it at the
17 peak.

18

19 Q. How did he get there?

20 A. He put waders on and waded out to the marker for the
21 '74 marker.

22

23 Q. Was that one of the DERM?

24 A. No, no. This is John. One of other duty engineers
25 did it.

26

27 Q. John Tibaldi?

28 A. Did it that night and then in the morning after we
29 came off shift Rob and I went round to where the official
30 city gauge is and took a photograph of the level there just
31 to confirm.

32

33 Q. From a distance?

34 A. No, no. It's right there at the thing. We walked
35 right down. Here to there, took a picture and just so that
36 we had a record.

37

38 Q. So that was at the estimated peak time?

39 A. It was after - we were after the peak but we just -
40 and that was just confirmation of the - we'd spoken to the
41 Bureau and said has anyone done a manual read at the peak.
42 But people are going to survey it in any way and it's
43 Googled. It's like on the images but it was just - we just
44 thought we should really - it's a hydrologist's thing. I
45 know it sounds a bit naff but it's like - we just thought
46 surely a big flood like this someone's got to try and do a
47 manual read at the peak.

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MS HENDY: We might have another break. I don't know if you want to have a longer break to eat and then we can keep going.

A. No, it's right. Keep going.

MS HENDY: We'll just have another break for 10 minutes. So what time is it now, Susan?

MS HEDGE: It's currently 10 past, nine past on my watch.

MS HENDY: So we'll just start again at 20 past.

SHORT ADJOURNMENT

MS HENDY: This is an interview with John Ruffini just continuing at 12.20 and just for the purposes of the reporter I just note Mr Jeff rolls has left the interview. Everyone else who was here earlier is still here.

Q. John, I was just going to - unless you've got anything else you want to say on the topics we've been discussing I'll just now move on to the actual event summary and the event log to run through that?

A. Sure. As I said I mean - I guess the only thing I'd say there's a fair bit of misinformation out there, so it just sort of - and I haven't gone through an exercise of going in detail about this is wrong, that's wrong, this is different and whatever, rather it's focussing on saying our view about - this is why we think it's the way it is but there is just no need for this - there is a lot of stuff out there that isn't - that is just not right.

Q. First of all, I might just ask you about the actual - the January '11 flood event report on the operation of Somerset dam and Wivenhoe dam dated 2 March 2011?

A. Sure.

Q. And about the process of compiling that. Was that primarily written by John Tibaldi?

A. The way it worked, the process was that John - John did a lot of the writing legwork. Rob and Terry did a lot of the modelling, reporting side of things, and I kind of reviewed the critical bits and pieces as needed. I wasn't able to put in as much time as the other guys unfortunately because I had - one of the group's I manage out at Rocklea that site was flooded so there was quite a bit of - and I

1 had to do quite a bit of work because we had to get the
2 repaired stations up and running, so there was a bit -
3 initially I had to sort of deal with that for a little bit
4 of time with it, so I didn't quite spend as much time.
5 They had - some of the other Seqwater staff assisting and
6 just the --

7
8 Q. The background information?

9 A. Background, like putting tables together and they had
10 some people help them formatting and that sort of thing as
11 well but for the critical bits of the report which is like
12 going through - going through the flood event summary
13 stuff, I've been through pretty well, and through the
14 compliance with the manual stuff, we've been through that
15 pretty well, and I've been through the main body of the
16 text with it. The appendices, not as much. I've been
17 through what I could with them but I didn't - you know,
18 there well could be little errors and things like that
19 there. It's a big document.

20
21 Q. We'll just start moving through the flood event
22 summary?

23 A. Okay.

24
25 Q. So just starting at period 1 of 20 on page 10?

26 A. Yes.

27
28 Q. You're the duty engineer that was called back early
29 from holidays to assist with the management of the event,
30 is that you?

31 A. No, that was Terry. Terry was the on call duty
32 engineer during the period and Terry came back and started
33 off the event. Where is it? There's a roster.

34
35 Q. I have seen it somewhere?

36 A. There's a roster there which sort of goes through
37 exactly who was on.

38
39 Q. When?

40 A. Who was on where. It tended to - yes, it tended to be
41 - I think - I'd have to look it up exactly which one I was
42 first on with, but yes.

43
44 Q. Sure. And you were - later in the event I was just
45 curious about why you were rostered on with Rob Ayre given
46 that you and he seem to be the most senior. Is there some
47 reason for that?

1 A. Terry's got a few health issues, so he couldn't really
2 do nights so just the way - like it doesn't affect him but
3 it's like if he does a night he gets knocked around quite a
4 bit so we decided we'd - we were kind of doing the nights
5 and just the way the roster fell that when this period of
6 intense thing happened it just so happened the doubling up
7 work that Rob and I ended up on the same time. There's no
8 real plan to it. That's just the way it sort of - Terry's
9 in the process of getting signed off as a senior duty flood
10 engineer. The application's in and he's probably in a
11 flood sense because he worked for the Bureau for 20, 30
12 years, I mean he knows as much if not more than Rob and I
13 in terms of general sort of flood forecasting sort of
14 stuff, so yes. But yes, I mean it looks - I know it looks
15 seen but that was just the luck of the - that's just the
16 way the rosters panned out when things started to get
17 heavy.

18
19 Q. So you weren't involved in that initial phase?

20 A. We all got informed on it and prior to that like we'd
21 all been - I'd been monitoring - I'll speak for myself.
22 I'd been monitoring over that whole holiday period and
23 that, and in my departmental role I'd been called in to sit
24 in a few of the teleconferences of what was happening
25 around the State and just offer some comment on the work -
26 you know, the flooding around Emerald and what was
27 happening, so I'd sort of been doing that over that holiday
28 period as well. (Mobile ringing). Apologies that's mine.
29 I'll just turn it off. So over the holiday period I'd been
30 monitoring because the system has for the data collection
31 there's a remote - well the things we were getting, we were
32 getting QPFs coming on to our phones so we knew what the --
33

34 Q. When you say us you mean the duty engineers?

35 A. All the duty engineers getting the QPFs telling what
36 us the forecasts were. We were getting those messages.
37 Terry who was looking at it was also giving us - keeping us
38 informed in terms of the things he was seeing. From the
39 point of view the remote, we have a remote system where we
40 can actually log in and download and run the data
41 collection system from home PCs and I was doing that and
42 having a look at what was going on and keeping abreast of
43 the situation, so yes. But initially this early initial
44 start there was no real indication that this was going to
45 be a big event. It was more like it's a little - another -
46 a bit like maybe something like we had in December and
47 October. Initially there's no real indications that this

1 is anything special.

2

3 Q. And when did that change, John?

4 A. I guess as we moved through the strategies you sort of
5 - it got to - that first peak, by the time we got to the
6 first peak we'd been in - you knew you were getting a
7 reasonable size event that you were managing, but the point
8 at which it became this extraordinary event was - you know,
9 you had the rainfall happen in the Lockyer which was pretty
10 big but it still wasn't - at that stage it was still in the
11 manageable - like it still was talking about what can we do
12 and then on that day, like on that - where we started to
13 get the rainfall on the dam, in that morning it started 4
14 o'clock, and the fact that we got that big - that's where
15 the big rare rainfall bits that fell over the dam. That's
16 the stuff that's the really rare stuff. That's the stuff
17 that drove the flood in North Pine and that's the stuff
18 that really where you had the rapid rates of rise and
19 things like that. So you had a really - you had a
20 significant event. You had a big - you had a big event
21 going on and then you got that rainfall event in that
22 period which sort of - really got special with it. And as
23 I said there was nothing in those forecasts that was
24 telling us that it was going to go that way.

25

26 Q. Just in relation to page 13 and this is period 4 of
27 20?

28 A. Yes.

29

30 Q. I don't know that these were actually decisions that
31 you were involved in but just the third paragraph there in
32 the background column?

33 A. Yes.

34

35 Q. You talk about bypassing strategy W2?

36 A. Yes.

37

38 Q. This is because the calculated naturally occurring
39 peaks at Lowood and Moggill were 530 is it metres Q?

40 A. Cubic metres a second.

41

42 Q. Cubic metres a second, yes, and 770 cubic metres per
43 second respectively?

44 A. Yes.

45

46 Q. And then you say, or someone sorry writes, "limiting
47 releases to these naturally occurring peak flows would also

1 have compromised the dam drain down requirements". I
2 wasn't quite sure?

3 A. Okay. One of the things that the dam has to do is to
4 empty the flood storage within seven days of the peak.

5
6 Q. Yes.

7 A. Now the reason for that is that in south-east
8 Queensland we have a history of closely spaced flood events
9 occurring.

10
11 Q. And that's mentioned in the manual?

12 A. So the idea is that you have to drain that down within
13 seven days. Now what was happening, if you limited it to
14 that Lockyer creek flow then you wouldn't have got enough
15 volume out of the dam within that seven days to achieve
16 that drain down period within seven days. Now there's a
17 little bit of flexibility - like it's not - there's a
18 little bit of flexibility in terms of that seven days,
19 depending on thing, but in terms of this again, you're not
20 really going to hit the money on those sort of things.
21 You've really got to go to that - we're at that higher sort
22 of criteria already. But that's not - you know, that's not
23 a - that's not - you know, think of the strategies about -
24 it's just where your objectives are moving. It's really -
25 and this is - the thing is there the strategies are
26 hierarchical and as you move through a flood your
27 objectives, your flood mitigation objectives change and
28 that was a shift to this higher objective happened at that
29 point in time.

30
31 Q. This is period 5 of 20 on page 14 which commenced on
32 Saturday, 8 January, at 2pm and was completed on Sunday, 9
33 January at 1am. I didn't quite follow the third paragraph
34 there in the strategy column. Could you just run through
35 that? I found that difficult to follow?

36 A. Okay. This is just sort of saying that - you might
37 want to ask John exactly the thing but my read of that at
38 the moment is that if you'd cranked up - if we'd cranked
39 the releases up further than where we were at that
40 particular point in time then you would have dropped the
41 lake levels to such a thing that you would have
42 transitioned back down to a lot lower strategy, so
43 therefore the setting in terms of where the discharges were
44 at that particular point in time were the ones to hold.

45
46 Q. So just looking through this, you've mentioned before
47 - like when did you get a sense that this was going to be

1 an extraordinary event in terms of - was it after the 10
2 January, after the flash flooding in the Lockyer Valley?
3 A. Well, the flash flooding in the Lockyer Valley on
4 that, as I sort of said we were - it took a little while,
5 like it happened - because it happened like that was about
6 midday on the Monday and then it sort of happened, so it
7 took a little while to figure out how big that was going to
8 be and the rates of rise were rapid. You know, it was like
9 eight metres in half an hour in places and stuff like that,
10 so it was all kind of happening at that time. But at that
11 stage it was still - you hadn't got the second bit of
12 rainfall over it, because - in the Lockyer there were two
13 bits of rain that fell. Like there was that and then when
14 the other stuff happened, the other day, so the first bit
15 it was only so much is like sharp but like what you're
16 trying to sort of see, well how big is this in volume and
17 can you do something about it. That's when things started
18 to - you talk about where - I'd look at - the situation -
19 if you really want to get a good sense of it I think the
20 situation reports in there are the ones that we sort of did
21 - did at periodic times. They're probably the best things
22 to refer to because that was when we really sat down and
23 said what is our understanding of what's happening at this
24 point in time and we'd kind of - better than the logs,
25 better than anything else. Like that's the one we were
26 given - okay right, we're giving advice to people outside
27 the flood room, in these situation reports what is our best
28 understanding at this time about what's going on. So I
29 think they're the - the situation reports are the best at a
30 given point in time.

31

32 Q. Record?

33 A. A record of like here's where we've actually put the
34 thought in and said this is what we think is happening. So
35 you'll sort of see through - if I - if you have a look at
36 those, then --

37

38 MS HEDGE: They are the front of appendix 2, that one
39 there.

40 A. Okay. If you have a look at those and it also - on
41 those it sort of says, well, who sent it out and where the
42 thinking is. So if you look at - go back.

43

44 MS HENDY: Q. Number 8 I think is the first one from you?

45 A. Yes. So each of those situation reports gives an
46 indication about what we think where we're heading in terms
47 of the downstream impacts and what we think is - what - and

1 we give an indication of like, well, what rainfall has
2 happened in the last bill bit, what we think in terms of
3 rainfall is happening, is going to be happening, and where
4 we think the - where we think the lake levels and stuff
5 like that that are heading. So I think that's the best
6 indication. So effectively the event grows as these sort
7 of things and as the event grows through the thing you're
8 shifting objectives. You're shifting objectives, you're
9 shifting from the low flow - the lower flow objectives of
10 the bridges, capacities, we're going no. Then we get to a
11 point where we go, can we keep Fernvale open, yes or no,
12 and in the end you've got to leave that. Once you've left
13 that, then you're moving to the objectives of what can we
14 do in terms of minimising downstream flooding, the urban
15 flooding impact. So you just move through those sort of
16 shift of objectives. And it also sort of says in these we
17 started to say well what do we - a little bit of - have we
18 got any sense that sort of - sense that we think that
19 things are going to potentially get worse. So we started
20 sort of - when we started to sort of go well - and that's
21 why - I guess if you look there on the Monday, Monday we
22 sort of say maybe this is starting to get a little bit
23 worse and where it might go with it.

24
25 Q. So in the second last paragraph you've got if the
26 predictive rainfall eventuates in the downstream tributary
27 catchments the resultant combined flows in the lower
28 Brisbane may exceed the threshold of damaging discharge in
29 the urban areas within the next --

30 A. Which one is this?

31
32 Q. 24 to 48 hours. This is page 24, so this is situation
33 report 13?

34 A. Yes, that would be right.

35
36 Q. So when was the flash flooding in the Lockyer? Was it
37 the 9th.

38
39 MS HEDGE: The 10th and the 11th.

40
41 MS HENDY: And then the 11th was the flooding around
42 Forest Hill, wasn't it?

43 A. That's right. The Lockyer stuff was in Monday big
44 day.

45
46 MS HEDGE: In Toowoomba. Because Grantham wasn't kind of
47 until 4pm.

1 MR RUFFINI: This is where you need to look at what these
2 - what the forecasts were and where it was heading and
3 where you're getting sort of - and some of the outlooks at
4 that stage were pointing to heavy rainfall over Brisbane.

5
6 MS HENDY: Q. Yes.

7 A. They had the system sort of slipping south and sort of
8 hitting over - hitting over Brisbane. So that was sort of
9 indicating, well, we've still got a bit of a drain on and
10 what - potentially what happens. But that's where we're
11 starting to flag, well look, just depending where this -
12 it's a worst case scenario and the event moving down as
13 you're releasing, so that's kind of picking up on that -
14 picking up the thrust of that.

15
16 Q. I guess as you weren't involved in preparing the flood
17 event summary, there's probably not much use me going
18 through that with you, so I'll probably just move on to the
19 event log, unless you've got anything else you want to add?

20 A. No. As I sort of said, John can give you more. As I
21 sort of said I'm in general agreement with it but if you
22 want to go through that process a bit more he's the better
23 person to talk to about that.

24
25 Q. Just something I did want to ask you about the
26 Lockyer. There's mention somewhere, and I forget by whom,
27 about the fact that it was easier to predict the flows from
28 the Bremer than from the Lockyer. Is that simply because
29 of the nature of the rainfall in the Lockyer or was there
30 some particular issue with the modelling in the Lockyer?

31 A. No. It's just as I said that rainfall was first in the
32 Lockyer and also the gauges at the bottom of the Lockyer -
33 Lockyer has a pretty incise channel but then it breaks out.
34 It breaks out and some flow bypasses the gauges above
35 certain things. So really sort of - like if you look at
36 Rifle Range Road and Lions Bridge which are the two most
37 downstream gauging stations, these big flows actually have
38 flood runners and it breaks out and you get flows sort of
39 thing. If you look at - if you look at the - in that
40 series of reports that we did in the 90s there's a report
41 on - there's a hydraulic model report which does hydraulic
42 modelling which has the Lockyer Valley and there's plots of
43 inundation maps for that area there. If you look at those
44 maps you can sort of look at the gauges and you can see
45 that there's bypassing flows, so you know that the gauge
46 there isn't going to be - so you're a little bit sort of
47 unthing. Now in this case because the flood was so big in

1 the Lockyer, some of the gauges were taken out, some of
2 them were over topped, so we really - yes. So it was quite
3 difficult from that point of view that you didn't quite
4 know what was going on in the Lockyer, yes. Well, it was
5 difficult because the data wasn't great.

6

7 Q. And from memory I think the Bureau's told us that they
8 didn't become aware of the flash flooding in the Lockyer
9 until something like 4 o'clock in the afternoon?

10 A. That's right.

11

12 Q. So I assume you weren't aware of it until --

13 A. No. Well, yes, by the time - when we started hearing
14 reports of it and then there's some footage started
15 happening and then - and as I said when I came on shift
16 that night that's when we put a bit of attention into it
17 and started to go - well the guys they'd started to do a
18 little bit but they weren't really - it was still - we were
19 still awaiting advice. There'd been some dialogue. The
20 Bureau was sort of telling us at that stage that, look gee,
21 something's happening. We're not quite sure what and then
22 it took a little while to really sort through that.

23

24 Q. I might just move on now to the flood event log?

25 A. Yes.

26

27 Q. Just I guess to give us a bit of a sequence of what
28 was happening. I won't go through all of it honestly, just
29 there's some entries of interest or that require
30 clarification. I take it that you were seeing all the
31 information that came in from the Bureau of Meteorology?

32 A. In terms of the QPFs?

33

34 Q. Yes?

35 A. Yes.

36

37 Q. And the emails did they address the emails to the duty
38 engineer address or were they emailing you separately?

39 A. Some of them came to me directly and some of them came
40 - if they came to the duty engineer they would have been
41 forwarded on if they were relevant but we'd have a look at
42 stuff when we came on shift but I'd have to check what ones
43 I did and didn't get and things like that. I can't
44 specifically say.

45

46 Q. Sure. So I take it that you were speaking to them
47 pretty much constantly when you were on shift?

1 A. Yes, we spoke to them on a pretty regular - well they
2 had a lot going on as well. It just wasn't Brisbane they
3 were dealing with, they were dealing with Emerald and
4 things like that. Now what they do also is they published
5 - we had access to their register user site where they
6 actually published their latest forecast runs. Now in
7 particular for Brisbane they would try and do early -
8 they'd have shift hand over at 4 o'clock and then they'd
9 try and do a model run, a model run before the morning kind
10 of new cycle. So we were trying to get our latest release
11 strategy to them, so we would email them here's what the
12 releases are and then they would put them into their models
13 and come up with a level in Brisbane. So we'd try and fit
14 in with their cycle and when it got a little bit busier
15 with things. But in leading up to doing that we'd also
16 have conversations with them about this is what our model
17 is saying, what's yours saying, and try and get some
18 consensus in terms of what we were thinking the event was
19 doing.

20

21 Q. And was there anyone in particular that you were
22 dealing with all the time?

23 A. I guess Peter Baddiley was probably - Peter and Jim,
24 Jim --

25

26 Q. Davidson?

27 A. Yes, Jim and - were the two main ones, yes, but they'd
28 have a record who was on shift and stuff like that.

29

30 Q. Sure. I wanted to ask you about a conference of the
31 duty engineers which is listed in the event log at 3.30pm
32 on Sunday, 9 January?

33 A. Let me just get --

34

35 MS HEDGE: I think it's appendix M in volume 3.

36

37 MS HENDY: It's page 82.

38

39 MS HEDGE: It's in volume 3, appendix 3, and then it's M
40 in that. That's my memory of it. Isn't that right?

41 A. Yes. Okay.

42

43 MS HENDY: Q. So at page 82?

44

45 A. Yes.

46

47 Q. And we're looking at 3.30 there?

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49 A. Yes.

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Q. Duty engineer conference?

A. Yes.

Q. I know you've said in your comments in your statement that you can't recall the exact words at the meeting but can you give me a bit more of an idea about what actually happened at that meeting?

A. Well, this was just a meeting that we had to make sure we were all on the same page about where we thought we were at with the event, so this is where we're at. You know, where did we think it was headed. You know, where do we think this event - so where is the thing and just touched base and say have we considered everything. Are we all sort of thing. So this is kind of just to make sure we're all on the same page. We all have a clear understanding about where we're at at this point in time and we have a shared understanding about where do we think this event is heading. So that kind of was the purpose of the meeting.

Q. And were there any significant differences in opinion expressed at that meeting about where you were at or where you should be going?

A. No, not that I can recall.

Q. So it wasn't the case at that point that someone was suggesting that we should be ramping up increases?

A. No.

Q. Just because those bridges, Fernvale bridge and Mount Crosby weir bridges are closed, I guess it's an issue for me - well, there is a potential issue about the priority given to those bridges as against some of the other I guess priorities or aims of the manual, including flood - you know, protection of urban areas of Brisbane from inundation?

A. But I think you can't read this in isolation.

Q. No.

A. You really need to read this in terms of where the situation report is at that stage, what the forecasts were at that particular stage and with that sort of strategy, there's - the danger that's happening at the moment is that people are looking at stuff in hindsight. People are looking after the event and saying this is the hydrograph, should you have been doing that then and that's like hang on you didn't know.

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Q. Even leaving outside this present --

A. You didn't know that sort of thing.

Q. Leaving aside this present event but just looking at the manual itself, it seems to give a very high priority I guess to maintaining those bridges, and I understand like there obviously has to be a lead time into the inundation of those bridges because of reasons of safety obviously but I just wondered if you had a view about --

A. Okay. I wouldn't share that view because the way the manual was worked out is that the original stuff that all the historical floods were routed through the vent and the rules were set to deliver on these string of objectives. Now the danger here is that once - once you let water out of a dam, then you can't pull it back and there are - if you look through the historical record there are plenty of floods that - and the only way you can get early mitigation stuff, you can say look let's get rid of all these low flow objectives and basically we'll crank up as high as we can as early as we can and what that means is that you're probably on - on other occasions you create flooding in Brisbane that didn't need to happen because the flow, the rainfall goes down the bottom and the flow happens down the bottom.

Q. Because the rainfall event's concentrated in Brisbane, is that what you mean?

A. Or below in the catchments below and once you release it you can't sort of pull it back, so they're the --

Q. That's the risk?

A. They're the risks. They're the risks that you have going. And you'd have - if you wanted to change that philosophy you'd have to say get rid of all the low flow mitigation things and there's merry hell to play with - there's a lot of geological reasons and things like that if you're suddenly the only flows you let out there are 2,000 cumec flows. There are those sort of things. They're things that can be looked at in the context of the thing. But in terms of we have to deal with the settings that we have in place at this sort of time, at this particular time. But like you really need to be very careful because it works - it's a two edged sword. If you go with bigger earlier releases, if you go with bigger earlier releases, then you will create more frequent flooding in Brisbane at a lower time.

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Q. So what you're saying the bridges remaining open are really a byproduct of that low release strategy, they're not really the goal of the low release strategy?

A. Well, the low release strategy it's still about draining the dam in seven days, and as part of that sort of thing if you drain it in seven days and you don't need to take all those bridges out you don't. If you're going to take a bridge out then you might release a little bit more quickly so that you actually get the lower ones out earlier. They're the sorts of judgments that you make at those sort of lower flow objectives but they're not - but you quickly sort of get passed those ones when you get into those higher flow objectives. So it's not - but you really - you can't look at one event and just do your assessment on one event. You've actually got to take all the historical events, run them through, do the assessment on that. If you want to change your rules then you've got to do that. You can't assume that you know exactly what the hydrograph is. You've got to assume that this is all I know at this time and put those sort of rules in and test them and then go and see what the outcomes in, and then you need to put in your design floods, your big floods, bigger than what you've seen, and test the rules and that's the process that was run through when the manuals were original - and there was a lot of work put into originally do that. And I think it's a good thing. Like let's throw everything up in the air and question the rules and have a look at them but like just caution that we don't - don't make - don't fall into the trap that says we knew everything and that you've got to say, well, here's the basis that we have a rule and just recognise, well that's fine but let's go and sort of do a proper test for it. And you know it might be - there might be a shift in those objectives. I mean, they're - you might go raise all these bridges and get rid of all the low flow objectives. I think they're things to be looked at in detail.

Q. But then what you're saying is if you do get rid of the low flow objectives, then you run the risk of creating a flood downstream if by the time, and it's something like 24 hours at least till the water gets to the Port Office gauge, isn't it?

A. Yes. It's always going to be a risk. No matter what set of rules you come up with, there'll be a circumstance --

1 Q. Which doesn't match it?
2 A. -- where this works really well for it. Like you know
3 the '99 event was a big event. The rules worked
4 fantastically well for '99. And this the rules worked but
5 the outcome wasn't as good but it doesn't mean that - but
6 you've got to be really careful and go, well, if we had
7 this set of rules, like what would do a '74 flood, what
8 would do an 1893 flood, what would it do for all those.
9 You really need to look at it in detail but as I said I
10 think it's worth - I think all those things are worth
11 having a look at for sure but you need to run it through
12 the rules. But also like part of that as well you need to
13 really run through what your water supply strategies are.
14 You've got to run that through. Get a starting level at
15 the beginning of the flood, run the flood through. Do all
16 that sort of stuff.
17
18 Q. There's a telephone call at 7.15pm on 9 January?
19 A. Yes.
20
21 Q. To the CEO?
22 A. 7am?
23
24 Q. 7.15pm, page 83?
25 A. Yes.
26
27 Q. Flood Operations Centre called Seqwater CEO. Was that
28 you making that call or was that someone else?
29 A. Flood office 6 made that.
30
31 Q. Well flood officer 6 has made the entry but I don't
32 know --
33
34 MS FAAS: Are you saying this is Director Dam Safety?
35
36 MS HENDY: No, this is the entry above.
37
38 MR RUFFINI: Is that when - am I on shift that time?
39
40 MS FAAS: I don't know. Has anyone gone through and
41 matched up the roster to the log?
42
43 MS HENDY: No, not at this stage.
44 A. I can't directly recollect. Like I can't say yes or
45 no on that.
46
47 Q. Because there's some confusion created by - when it

1 says Flood Operations Centre, it's just unclear who it
2 actually was. Sorry, yes, you were according to this -
3 from 7pm to 7am.
4
5 MS HEDGE: But engineer 2 stayed around, so there was
6 three of you in there, engineer 3, 1 and 2.
7
8 MS HENDY: Q. This is from - so you were on duty from the
9 7 o'clock on the 9th, 7pm?
10 A. Yes. I can't - I don't have a recollection of making
11 that exact call.
12
13 Q. No, that's okay.
14 A. It might have been Terry, given it was to the CEO so
15 it could have been a thing. But it could have been - I'm
16 not sure.
17
18 Q. Okay. And the next call there's also a call at 7.15pm
19 logged there Flood Operation Centre called Director, Dam
20 Safety. Now would that have been - who's the Director of
21 Dam Safety?
22 A. That's Peter Allen.
23
24 Q. Isn't he the dam safety regulator?
25
26 MS FAAS: It's the same thing. Director Dam Safety is his
27 title. Dam Regulator is his, what he does under the Act,
28 his function under the act.
29
30 MS HENDY: Q. Because there's also someone else, I think
31 at Seqwater called the Director of Dam Safety. It gets
32 quite confusing?
33 A. Right. Barton?
34
35 Q. Barton Marr?
36 A. Yes.
37
38 Q. Okay. Would that have been you calling Peter Allen?
39 Don't know?
40 A. Don't know. There is another call that I did speak to
41 Peter on that I recollect but I couldn't say with that one.
42
43 Q. What was the other one that you recollect, John?
44 A. That was the - when we had some discussions with him
45 re the --
46
47 Q. Above the '74?

1 A. Yes, about the '74 and just making some clarification.
2 There was some issues in terms of - that, yes, we just - I
3 think I've given some comments on that one in there.
4 That's where we were thinking we could potentially - we
5 were thinking - we were just flagging that we might - we
6 were considering whether we would ask for a variation in
7 the manual there and if we did ask it, would he look
8 favourably on that in terms of discretion. In the end we
9 didn't ask for it because the situation moved passed that
10 but that was the call I had to Peter.

11

12 Q. Now just going back to this meeting, sorry, at 3.30pm
13 on Sunday, the 9th, the duty engineer conference which you
14 all attended?

15 A. Yes.

16

17 Q. And engineer 4, who I think is Mr Malone, by
18 telephone. Did you discuss modelling at that meeting and
19 forecasts or - I'm interested in how the meeting actually
20 ran. Did you sit round a table?

21 A. There was three of us round the table, and we probably
22 did but I didn't - like I didn't - you know, sorry, my
23 memory just doesn't - like if I told you something I'd just
24 be making it up because I don't have a direct memory of it
25 but normally that's what we would do. Normally we would
26 discuss the situation report. We'd discuss the modelling
27 runs and I would have expected that's what we would have
28 done. That's normally what we do at these sort of meetings
29 but, yes, I wouldn't - I can't say I've got a direct
30 recollection of exactly what we spoke about. There's a lot
31 to be said for recording.

32

33 Q. Yes, that's right. Again on Sunday, 9 January 2011
34 there's a call logged at 9.10pm - dam operations manager
35 called and spoke with engineer 1. Is that Rob Kehoe? Is
36 he the dam operations manager?

37 A. Rob Drury.

38

39 Q. Rob Drury, righto.

40 A. Rob Kehoe is the SunWater.

41

42 Q. He's at SunWater, yes. So when it says that dam
43 operations manager confirmed that releases will need to be
44 ramped up, were you involved in that conversation at all or
45 were you just involved in a discussion about someone needs
46 to call him?

47 A. It's not his decision.

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Q. No.

A. It's nothing to do with him.

Q. That's why I'm wondering?

A. So that's like bullshit because he's got no say in that. We'd just be informing him what was happening.

Q. So this information from him, Brisbane Flood Information Centre has not yet been mobilised?

A. Well that was probably us telling him that because we'd been sort of ringing that number and sort of letting him know that - letting him - trying to let them know that situations were evolving and we were starting to release out sort of more information. I think there was a few calls made to - before we finally got on to Ken.

Q. Ken Morris?

A. Yes.

Q. So there's a call there just beforehand at 8.55 BCC called - sorry, there's first one at 8.50 engineer one, so Rob Ayre called BCC to request copy of flood damages occurred from 2007 study. Which 2007 study do you know, John?

A. Alright. The council - the council - and this is kind of a little - and there's some further correspondence - phone calls relating to this issue. Ken was on the revision of the manual, Ken Morris was on the revision of the manual sort of thing. Now part of that - part of that - and in 2007 they ran a study where they revisited the damage curves in Brisbane and redid them in terms of that. Now I was on the steering - I was involved in the reference group for that. I think Rob was as well. So we were - and Peter Allen, so we were all fully apprised of the outcomes of that, and they pretty much told the same story that all the previous studies on damage curves in Brisbane said, which was like at round this 4000 there's a kink. There's a kink in the curve. So at some point you just get this transition and you start getting more - while the rates had changed the point at transition had sort of - had not sort of changed at all. So when the manual revision was done and they were involved in the process, they were going, well yes, there's no real issue in terms of that - in terms of that level. Now some of those later conversations, which I've offered some comment on, was that the conversation that I'd had with Ken Morris which was about

1 the --

2

3 Q. Three and a half?

4 A. No. The three to 4,000. Yes, the --

5

6 Q. This is on the 10th, at 12.45 on page 3 of your
7 comments. Is that the later conversation?

8 A. Yes.

9

10 Q. Sorry, page 85 there.

11 A. So what have I said there?

12

13 Q. Well you said the 4,000 cumecs refers to the combined
14 flow - I'll just --

15 A. That's it, yes.

16

17 Q. At Moggill. And then you just mention that they
18 participated in the latest revision?

19 A. And the issue there was that in one of the situation
20 reports that went out we'd put that that was below, the
21 4,000 was below non-damaging flows in Brisbane and they
22 were saying, look, that's not correct. Like in reality -
23 and by the way, you know, you shouldn't really be
24 communicating that. Just because it's up to the Bureau to
25 do the forecast and we translate it into what the damages
26 were and they were worried that if that message got
27 misunderstood then people would think that they weren't
28 going to be damaged. And so from that point of view they
29 were sort of saying hang on, is there - you know, there are
30 people getting damaged at those levels and can you - and
31 don't communicate that in that sort of communication, yes.

32

33 MS FAAS: Q. Who's "they"?

34 A. That's council.

35

36 MS HENDY: Ken Morris?

37 A. And it was a fair enough point because it was not
38 really - yes, no, we agreed with it.

39

40 Q. So the prospect was that some people, even a limited
41 number, might be affected at three and a half thousand?

42 A. There are people affected and while - we were putting
43 exactly what was in the manual but that could be
44 interpreted as there's no damage at all and they're just
45 saying well look that's not correct. There is stuff going
46 on, so you shouldn't - and by the way why are you even
47 saying that, just say what you're doing and where you're at

1 which was fair enough.

2

3 Q. Just to go back to those calls on the 9th at 8.50 and
4 8.55, the one when you spoke - first of all, Rob Ayre's
5 called BCC to request a copy of the flood damages curve.
6 Why was that, John, to - so you could just sort of make
7 reference to that in the situation reports?

8 A. Well just sort of - just so we knew the numbers of
9 properties and things and stuff like that, just so we had
10 it there as reference. I mean, it wasn't really used as
11 such but we just thought it would be good - it had been
12 promised as part of that thing that we'd get it and we'd
13 never got it but like in a material sense we're really not
14 - it's not really making --

15

16 Q. Any impact?

17 A. It's not really making a difference to the things but
18 it's just good to have it in terms of that sort of info, so
19 yes.

20

21 MS HEDGE: It's a quarter past one Lisa.

22

23 MS HEDGE: Q. Were you aware as to what the arrangements
24 were in relation to the Brisbane City Council flood
25 information centre?

26 A. As in?

27

28 Q. What was your understanding of what their role was in
29 all of this?

30 A. Well, their role is they take the forecasts. When
31 they're getting above my - when they are anticipating
32 they're getting above the minor flooding levels, then
33 that's when they - that's their trigger, something around
34 there exactly where they trigger their flood centre, and
35 the Bureau then provides them with the forecasts at the
36 Port Office gauge. They then turn that into predictions of
37 houses and information packages for people to access and
38 then - and have their websites and stuff like that set up
39 to do that sort of thing. Now that's consistent with the
40 protocols they set up. Like Seqwater dam - we provide the
41 discharge releases to the BoM. The BoM incorporate them in
42 that modelling. They produce a height at the Port Office
43 and then the council take those predictions --

44

45 Q. Translate them?

46 A. -- and translate it into a thing which is a response,
47 yes.

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Q. And did Ipswich City Council have similar arrangements do you know?

A. Similarly they take a different point. They take - and convert it into their own local information as well. And that was one of the outcomes has always been that you don't want multiple - you don't want different people saying - you all want to be working off the same hymn sheet in terms of what the forecasts are, yes.

MS HEDGE: Sure. I might just have a five-minute break. What time is it, quarter past?

MS HEDGE: 16 past.

MS HENDY: We'll just come back in five minutes.

SHORT ADJOURNMENT

MS HENDY: So we're recommencing the interview with John Ruffini at about 1.30.

Q. We're just going to continue going through the flood event log, John?

A. Yes.

Q. Just returning to those conversations with Brisbane City Council?

A. Okay. They're on the midnightish ones.

Q. Yes?

A. Yes. Monday midnight.

Q. Was there some attempt to accommodate that three and a half thousand in the releases at least for some short period?

A. The following day, like the following day the guys had a look at it in terms of the --

Q. Is that Terry and John Tibaldi?

A. Yes, Terry and John had a look at what they could - I guess it's within the realms of like what are we - there were a couple of things. By the following day you had a couple of things happening. You had the flood in - the flood - it was only for a very short period of time because we suddenly had the flood happening in like Lockyer and whatever but in terms of the - you'll need to ask them

1 directly but they had a look at it after we went off shift
2 and this is to see whether - whether within the broad scope
3 of the objectives there was some capacity meeting the drain
4 times and that sort of stuff to be able to - and you always
5 - you know, you're able to accommodate those sort of
6 things. So I think they're better to talk to that and I
7 believe there are some entries in the things that sort of
8 talk a little bit about that.

9

10 Q. Sure. The next sort of significant ones I wanted to
11 ask you about were on Monday, 10 January, at 12.45?

12 A. Yes.

13

14 Q. So again that's basically - that's an accurate summary
15 of what you said?

16 A. Yes. For 12.45, BCC spoke to engineer, indicated -
17 and then I've sort of said that was - in terms of that
18 situation report was the thing that they didn't want us to
19 mention non-damaging --

20

21 Q. Levels?

22 A. Non-damaging flood levels. That was the thing in
23 there that they had the issue was, when we were reporting
24 it that was their main - the main issue in talking at that
25 point in time was say, look, don't put that in your reports
26 because people can misinterpret it in terms of that sort of
27 thing.

28

29 Q. Sure. And then you called?

30 A. Rob Drury.

31

32 Q. Rob Drury. And he agreed that the mention about the
33 damage levels should be left out?

34 A. Yes, it was just that Rob was doing - the reason Rob
35 was doing that - in the communications protocol he was
36 doing the - he was Seqwater's man for under the protocol
37 for that outside sort of thing. So I was just relaying to
38 Rob the BCC's thoughts on, well, just don't put that sort
39 of thing into reports that are going outside because it can
40 be misinterpreted. Agree, the situation would not allude
41 to damaging levels and sort of thing. Now that second
42 comment in that one, engineer 3 confirmed that flows were
43 kept below three and a half - I've got no recollection of
44 saying that. And certainly in the situation report that I
45 prepared at 1 o'clock that went out on the same day - where
46 is that? So on the Monday - have a look at on the Monday -
47 the Monday, situation report 13, which is the one - that's

1 the one I sent out - that's right time, isn't it? Yes. So
2 situation 13. Now that's really my considered view of what
3 the situation was at that time.
4

5 Q. So you don't remember any discussion about FEWS plugs
6 at that stage?

7 A. No. I gave Rob a call just to sort of - before I - to
8 sort of say did he recall me mentioning any. I said I
9 didn't have any recollection of me mentioning anything
10 about FEWS plugs in that discussion. So I don't know.
11

12 Q. Is that when you saw this log?

13 A. Yes. Yes. So I just sort of - because I just checked
14 with him before I wrote that because I said I just didn't -
15 I'm not saying I don't have a recollection of doing that,
16 and I've checked my situation report and said, well --
17

18 Q. It's quite a way from?

19 A. Sorry?
20

21 Q. The predictable level is quite away from --

22 A. Yes, and in the situation report it's not really about
23 that. So just whether it's been taken out of context,
24 whether we just had a - you know - I'm just not sure
25 because - the trouble with the way the logs were done is we
26 had the guys writing --
27

28 MS FAAS: Q. Flood officer 6?

29 A. We had the flood officer 6 recording what they thought
30 was said and what we didn't do was go back and check --
31

32 MS HENDY: Q. At the time?

33 A. At the time whether we agreed with what they put down,
34 so it was - and the idea we had - the idea in doing that
35 was to free up the duty engineer so we weren't focussing on
36 writing out the things. Now as a general comment the log's
37 a bit ordinary, like for this sort of forensic. We really
38 - you know, in previous flood reports we would have just
39 done an abridged version of the log taking out the salient
40 key - we would have taken out the points in the log that
41 demonstrated where we made decisions. So normally what we
42 would have done is done an abridged version of the log that
43 takes out here's the critical decision points and here's
44 our log entries that validate the logic and reasoning
45 behind why we made that decision at that point in time.
46 And in some ways the situation reports, because we've done
47 those in a very formal way, really are reflective of that

1 sort of thing. So, yes, so it's just - you know, they're
2 deficient in that we don't always have who said what and
3 whatever. They're hearing one side of the conversation. I
4 mean, for this exercise you would have been better off just
5 recording all the phone conversations. Maybe that's
6 something to look at in terms of that if you really wanted
7 a verbatim sort of thing. So as I said, I can't - I don't
8 - I don't recollect saying anything about that at that
9 time. The situation report that I prepared ten minutes
10 after that had no mention of it in terms of I hadn't really
11 - and that would have been - and the situation reports are
12 the ones where I've sat down and you've really thought
13 about what you wanted to say because it's going externally
14 and it's going to everyone and it's kind of - and that's
15 what we're asking Rob Drury to communicate to other people
16 through that communication report, so that's a better
17 reflection of what was going on at the time. Or sorry,
18 yes. Yes, that's right. It's a better reflection of what
19 was going on at the time. Having said that, as I said
20 that's been - I think it's already been quoted in the
21 paper.

22
23 Q. So at 8pm on the - sorry, I should say on the 10th,
24 the records that we have suggest that you were back on at
25 7pm until 7am from the 10th?

26 A. Yes.

27
28 Q. On 10 January?

29 A. Uh-huh.

30
31 Q. There's record at 8 o'clock about the receipt of
32 information from BoM about --

33 A. Okay. This is on the - sorry, yes, go on.

34
35 Q. So that is just advice about the flooding in the
36 Lockyer Valley and then at 8.20 there there's a log entry,
37 spoke to BoM regarding reducing Wivenhoe release to
38 accommodate peak of Lockyer flash flood. Was that you do
39 you recall?

40 A. Yes. We just considered whether we'd have any scope
41 to do that. So it sort of - we're sort of - we'd spoken to
42 them and it was about saying did they have an idea about -
43 the idea was, well, if it was a really - if there wasn't a
44 lot of volume in it, if it was just a really - like if it
45 was a flash flood that didn't have a lot of volume and it
46 was just a spike, then you might have some - you know, you
47 might have had some ability to make a little bit of a hole

1 in it and just have the spike fall in the hole and not have
2 it but there wasn't. It was just - it was something that
3 was considered but it wasn't possible to do.

4
5 Q. And then you've got that telephone call at 9 o'clock
6 there?

7 A. Yes. And that's - the same logic that flows up to
8 that is sort of saying look, if we - if that's possible, if
9 it's possible to do that, but at that stage we're saying
10 it's probably not possible without it going over 74 but
11 we'll see what happened. And this is prior to the - the
12 big rain that started over the dam happened - started the
13 next morning. So up to that point we were still --

14
15 Q. Maintaining?

16 A. We were still potentially having some - potentially we
17 could have - we're starting to get on the edge but maybe,
18 maybe we can - maybe we can do - maybe we can do something
19 to do that. But it was quickly abandoned. Now by 5
20 o'clock the next morning we're saying, look, that's just
21 not possible. 5.15am.

22
23 Q. Is that you do you think?

24 A. Probably. Me or Rob. As I said it's just - yes.

25
26 Q. Just in relation to that entry 5.15am there?

27 A. Yes.

28
29 Q. Consensus was that reducing release from Wivenhoe
30 would no longer be feasible due to --

31 A. That's probably consensus amongst the two engineers on
32 duty.

33
34 Q. All right. And when there's reference there to "due
35 to attenuation of Lockyer peak", what does that mean?

36 Sorry, I'm not really across that language, John?

37 A. That's just saying, because of the timing, like how
38 long it's taking to get through the system, and the
39 rainfall that's - there was additional rainfall above it,
40 it just wasn't - you know, we just didn't have the capacity
41 to do it. It's not brilliantly worded but it's just - what
42 it's saying is that just the timing of the peaks in the
43 Lockyer.

44
45 Q. So you weren't actually on then but I take it that --

46
47 MS HEDGE: No, he was. It's in that one. Up to 7am.

1
2 MS HENDY: Up to 7am you were there. .
3
4 MS FAAS: Q. John, the question being attenuation, that
5 just means going down, doesn't it?
6 A. Well like attenuation is this, like if the peak's like
7 that, then it attenuates and it goes like that and that
8 becomes longer in time compared to that. So if that took
9 two hours that might take six hours and that'd be a little
10 bit lower. Like that's lower. So it's longer, fatter and
11 longer.
12
13 MS HENDY: Q. But you didn't have six hours?
14 A. No. As I sort of said, it's just - the original stuff
15 was when the Lockyer one, it was just - we thought it might
16 have just been a little, just something like that, but then
17 they got extra rain on it and it was like that and then it
18 started to go up again and so you ended up with 4,000
19 cumecs plus coming down so it was just - it wasn't
20 possible. And that's just - as the night went on, we just
21 learnt more about what had actually happened in the
22 Lockyer. So our original - see originally you thought
23 maybe it's just this little thing that's happened up at
24 Grantham or something like that, but it was slightly - it
25 was a bigger kind of concept than that once more
26 information came in.
27
28 Q. Although you're off at 7 o'clock there on the 11th,
29 7am?
30 A. Well officially rostered off. There was a little bit
31 of bleed either side of it just with handing over and
32 just --
33
34 Q. I imagine things are starting to get pretty serious to
35 you too?
36 A. Yes. And as I sort of said, I probably - I'm not sure
37 exactly when I left but then I left and went home and then
38 that day - like when it started to get hairy, I was
39 probably back about - you know, after I got up, which is
40 sort of just after midday I was sort of - like I think I
41 got back in 2, 3 o'clock, something like that.
42
43 MS FAAS: There's an entry for you at 3.49pm.
44
45 MS HEDGE: The roster says 1pm.
46 A. Yes, that'd be right.
47

1 Q. So engineer 1 and 3 assisted from 1pm on 11 January
2 2011. That's part 3 of the report.

3 A. Well then it was getting hairy --

4

5 MS FAAS: That's recorded station now, so it's not the
6 same as the roster.

7

8 MS HEDGE: No. That's the notes to the roster in the
9 Seqwater report.

10

11 MR RUFFINI: So it's like the other guys are still on but
12 by then we're coming back and having a look at it because
13 you don't - you don't want to come in cold at shift hand
14 over when it's that intense. You really need - when I came
15 back in probably would have taken about an hour to get my
16 head round exactly what was happening again I reckon.

17

18 MS HENDY: Q. There's a conference at - I might just
19 actually ask you first of all. There's an entry at 2.19 on
20 page 92, email to various agencies advising "Wivenhoe ALERT
21 gauge is reading low"?

22

23 A. Yes.

24

25 Q. That's made by engineer 2 but what's your knowledge

26

27 about that, John?
28 A. That's correct. I mean, that was that thing we were
29 talking about, the sort of thing. So we just thought we
30 wanted to make sure that councils were aware of it in that
31 - and we'd made you know I think BoM aware of it as well.
32 We'd had - just so that it wasn't - yes, we just wanted -
33 just started to get that message out there that it was -
34 that it wasn't working properly because it would be
35 inconsistent with the situation. The situation reports we
36 were putting out there had the correct manual read gauge
37 and if they were looking at it, because they had access to
38 ALERT, those that were receiving our messages that had
39 access to ALERT we just wanted them to know - so they
40 understood that it wasn't working properly.

39

40 Q. Now at 3.49 there's a conference with BoM with the
41 four engineers?

42

43 A. Yes.

44

45 Q. Can you tell me anything more about that conference?

46

47 A. Well that was just really sort of exchanging notes on
what their modelling was telling them. Like they'd done
their forecasts and we were trying to get a handle on did

1 they - you know, what did they know, what did they think
2 was happening, where did they think this was going. Did
3 they know - had they spoken to their mets and were the
4 meteorologists telling them anything that we didn't know.
5 Did they have anything to add to what was going on.
6 Probably - I assume we discussed the water level issue and
7 things like that in that as well, so just kind of trying to
8 get on the same page with it.

9

10 Q. At 4.41 there's an entry --

11 A. But once again I can't be completely definitive about
12 everything we spoke about, yes.

13

14 Q. There's a request by the Director of Dam Safety at
15 4.41 for more technical information in the status reports?

16 A. Yes.

17

18 Q. Something I did want to ask you about is there's the -
19 I think they're described as the situation reports and
20 there's the technical situation reports. Is there a
21 different audience for those?

22 A. The situation reports, that is the document that the
23 duty engineers prepare in the Flood Control Centre. The
24 technical situation reports, that's the official - under
25 that protocol that's the thing that --

26

27 Q. Seems to go through the water coordinator --

28 A. Yes. So that sort of thing. And that tends to be
29 like a precis of the things that we've got. Our situation
30 reports they go to all the councils as well. So the
31 situation reports go to all the councils, all the - BoM and
32 those anyway - as well I should say.

33

34 Q. So the Director of Dam Safety who we've clarified I
35 think is - that's?

36 A. Peter Allen.

37

38 Q. Peter Allen, yes. Okay. Can you remember what
39 aspects of the technical information he was wanting
40 enhanced?

41 A. No, not offhand. I think that was just in response to
42 the - during - what had happened is when things got pretty
43 busy in the flood room on that particular day, that the
44 situation reports - where is it. The situation reports
45 were quite short and less information than we'd previously
46 had because they were still trying to get a handle around
47 what the hell was happening. So if you look at the one, so

1 - so I'm just not sure if that was in response to that. So
2 if you look at situation report 19 and 20, they were just -
3 they were a little bit truncated in that sense.
4

5 Q. So you're still opening the gates at that stage. And
6 then this reference at 5.22 in the entry there it says that
7 "BoM engineer 2 and engineer 3 discussed current Wivenhoe
8 inflows and anticipated outflows. Engineer 2 confirmed
9 that seven and a half thousand cumecs is still likely early
10 tonight". So is that on the basis of the current inflows
11 to keep it below?

12 A. Yes. That's on the - you know, once you get in that
13 procedure four, based on the rates of rise that we were
14 seeing in the dam and the things and the need to equalise,
15 equalise the inflow to the outflow, then we'd anticipated
16 that sort of thing, and as I sort of said the modelling -
17 the modelling at that stage was struggling in terms of
18 getting the exact rate of rise. So obviously rainfall was
19 missing, so we were actually looking at rates of rise and
20 discharges and other supporting information at that time as
21 well.
22

23 Q. At 6.07pm there's a recap of current release strategy
24 amongst duty engineers?

25 A. Yes.
26

27 Q. Were there other options visited during that
28 conversation?

29 A. We were just confirming - and this is like, you know,
30 just sanity check where are we at. Have we got any other
31 options or not. Are we on the right path. Have we done
32 everything. Has everything been done the way it is. Have
33 we missed anything or not. And it was just - for us it was
34 just to go through our mental check list of where we were
35 at and just sort of going are we missing anything. Have we
36 picked it all up. Are we on the money with what we were
37 doing.
38

39 Q. There's a conversation at 8.35pm, "Seqwater CEO called
40 Flood Operations Centre to speak with all duty engineers on
41 the operating strategies for Wivenhoe releases". Was that
42 just for you to tell him what you were doing?

43 A. Because of the seriousness of where it's at and he's
44 seen the things he just wanted a bit of a briefing of
45 exactly where it's at.
46

47 Q. There's a call from the Seqwater CEO noted at 8.55.

1 Did you have any involvement in that call?
2 A. I don't know. Probably not. I mean that's probably
3 engineer 2. Well as in, you know, speaking on the phone
4 but like - I'd endorse that. We were looking at it and
5 seeing what we could do and when we could - looking at the
6 rates, looking at the discharge rates and looking at what
7 point we were able to act on it.

8
9 Q. At 9.35 there's a call noted there, "Engineer 4 rang
10 to discuss the latest directive to raise Wivenhoe dam.
11 Engineer 4 suggested not raising". Do you have any
12 recollection of that?

13
14 MS FAAS: Q. Is this a time when you're on?

15 A. No, not - it's just --

16
17 MS HENDY: Q. Was he ringing in to say --

18 A. We were all in there, so - like I rang who? He's not
19 out the room, he's in there.

20
21 Q. Anyway we'll ask him.

22 A. Like we started - the conversations, as I said we were
23 starting about when we were starting to think about when we
24 could shut down and hold and where were we at and what was
25 the rate of rise, what were the things. They were the
26 general thrust of the things we were rolling around at that
27 point. You know, what was the discharge. Had it
28 stabilised or was it still going up. Did we have - when we
29 were going to be at that point where we could - the
30 intention was to always bring it down as soon as we could.
31 Could reasonably sort of start to do so.

32
33 Q. I just wanted to ask you about there's an entry on 12
34 January at 6.35am, "DERM hydrographer rang". What's the
35 role of the DERM hydrographer in this, John?

36 A. We - that was probably Paul Martin, maybe, because we
37 were just discussing possibilities of doing measurements at
38 Jindalee. Paul was suggesting it. So we did have our
39 hydrographic staff work with Seqwater's hydrographic staff
40 to do some measures off Jindalee bridge, like we did some
41 measurements in '74, so Seqwater were keen to get another
42 one - you know, some measurements in there. It's not an
43 official departmental gauging site, so they were just sort
44 of seeking some assistance in sort of doing that. I would
45 assume that that's - maybe what that's about. But talk to
46 engineer 4. They'd probably --

47

1 Q. There was a visit by BoM on the 12th at 12.55 to
2 liaise with duty engineers. Well it's noted in the log.
3 A. Yes.

4
5 Q. What was the purpose of that, John, or what happened
6 during that meeting?
7 A. I'm not sure.

8
9 Q. I don't think you were there. Sorry. Not you?
10 A. I'm sleeping. Yes, there you see "4.25 DERM called.
11 ... (read)... DERM will be gauging at Jindalee all night to
12 catch peak". That's probably what he rang about in the
13 morning.

14
15 Q. Do you have anything further from that John, in the
16 log?

17 A. No. Just that I guess the general observation that
18 the log, as I previously said, you know, the way we did it
19 this time with the external third parties recording the
20 stuff in there probably I don't think worked really
21 brilliantly, given some of those things are a bit thing,
22 and as I said we didn't, as a process thing we didn't go
23 and at the end of the shift vet it or something to go
24 through it, so it's probably - probably would have been a
25 little bit deficient, and as I said previously we've used
26 the log in a fashion of really just going and picking out
27 the salient communications that link into the points of -
28 to support when and how we made decisions. And a lot of
29 that's really - in a sense the situation reports are
30 probably a more reflective way of capturing that sort of
31 thing.

32
33 MS HENDY: All right. I don't have anything further.
34 Thank you.

35
36 MS HEDGE: I've got 2 o'clock on the dot.

37
38 **AT 2PM THE INTERVIEW CONCLUDED.**

39
40
41
42
43
44
45
46
47

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