

**IN THE MATTER OF  
THE QUEENSLAND FLOODS COMMISSION OF INQUIRY 2011**

**A COMMISSION OF INQUIRY UNDER THE  
COMMISSIONS OF INQUIRY ACT 1950**

**AND PURSUANT TO THE  
COMMISSIONS OF INQUIRY ORDER (No. 1) 2011**

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**WRITTEN SUBMISSIONS ON BEHALF OF QUEENSLAND BULK WATER SUPPLY  
AUTHORITY**

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## I INTRODUCTION

1. These submissions are made on behalf of Queensland Bulk Water Supply Authority (“Seqwater”).
2. The broad thrust of the case being advanced is that:
  - (a) the flood event report dated 2 March 2011, which was produced by the four flood engineers, conveyed a false account of the operating strategies adopted by the flood engineers during the flood event, and of the times at which they were adopted; and
  - (b) the four flood engineers colluded to produce that false account.
3. It is being suggested that:
  - (a) The methodology by which the report was prepared was inherently corrupt. That is, the methodology was not designed to produce an account of what in fact occurred; rather, it was designed to produce what counsel assisting characterise as a “reconstruction”. The suggestion appears to be that the report, being the product of a “reconstruction”, necessarily does not reflect what in fact occurred.
  - (b) The manual required a transition to strategy W2 or W3 when the lake level exceeded 68.5m AHD. However, over the weekend of 8 and 9 January 2011, the flood engineers were in fact applying strategy W1. This constituted a breach of the manual.
  - (c) From the time that transition ought to have been made, the manual required that the flood engineers consciously apply strategy W2 or W3 as appropriate. This did not occur over the weekend of 8 and 9 January 2011. This constituted a breach of the manual.
  - (d) The manual required the flood engineer on duty to make a conscious selection between strategy W2 and W3 when the lake level exceeded 68.5m AHD, and no such conscious selection was made by Mr Ayre at 8am on Saturday, 8 January 2011. This constituted a breach of the manual.
  - (e) The flood event report conveyed that:
    - (i) throughout the weekend of 8 and 9 January 2011, the flood engineers were:

- A. applying strategy W3; and
  - B. doing so consciously; and
- (ii) at 8am on Saturday, 8 January 2011, Mr Ayre had consciously selected W3 as the strategy to be used.
- (f) The flood event report was false and misleading because:
- (i) on the weekend of 8 and 9 January 2011, the flood engineers were:
    - A. in fact applying strategy W1; and
    - B. not consciously applying strategy W3; and
  - (ii) Mr Ayre did not, at 8am on Saturday, 8 January 2011, consciously select W3 as the strategy to be used.
- (g) Each of the four flood engineers:
- (i) intended that the flood event report would convey the messages referred to in subparagraph (e) above;
  - (ii) knew that:
    - A. on the weekend of 8 and 9 January 2011:
      - (1) the flood engineers were applying strategy W1; and
      - (2) not consciously applying strategy W3; and
    - B. Mr Ayre did not, at 8am on Saturday, 8 January 2011, consciously select W3 as the strategy to be used;
  - (iii) knew that this amounted to a breach of the manual;
  - (iv) colluded with the others to produce a false account of what had occurred;
  - (v) did this in order to cover up what he knew to be a breach of the manual; and
  - (vi) has given evidence to the Commission which he knows to be false.

4. These allegations require the Commission to make findings of two different kinds.

5. Primarily, the Commission is required, in accordance with the terms of reference, to make findings as to:
  - (a) What in fact occurred in the operation of Wivenhoe dam during the flood event.
  - (b) Whether what in fact occurred was in compliance with the manual.
  - (c) Whether the dam could and should have been operated differently in the prevailing circumstances.
  - (d) Whether a better outcome could and should have been achieved by operating the dam differently.
6. The second category comprises findings as to credit. The credit of the flood engineers is relevant insofar as it bears upon the Commission's task of making findings as to what in fact occurred in the operation of the dam during the event.
7. For reasons developed more fully below, the task of the Commission is not to make ultimate findings as to whether the flood engineers have committed perjury or any other offence.
8. These considerations have important implications in terms of how the final report of the Commission should be structured and published. In summary:
  - (a) The primary findings described in paragraph 5 above should be contained in the part of the report which is to be made public.
  - (b) As to the findings of credit:
    - (i) If the Commission ultimately finds that the serious allegations made against the flood engineers cannot be sustained, and that they have not been guilty of the wrongdoing with which they have been charged, then that should be contained in the report which is to be made public. Given the extensive reporting of the allegations made against the flood engineers, fairness would require that their vindication be made public.
    - (ii) However, if the Commission ultimately finds that the serious allegations made against the flood engineers have been proven, then the findings reflecting that should be contained in a separate part of the report which should not be made public. There would be a fundamental objection to the publication of findings of this kind. In essence, the objection is that publication of the Commission's findings (made on the basis that the

Commission is not bound to apply the rules of evidence or the criminal standard of proof) may deny the flood engineers a fair trial in any subsequent criminal proceedings.

## II GOVERNING PRINCIPLES

9. The allegations being advanced are of the most serious kind.
10. Although not bound to do so,<sup>1</sup> Commissions of Inquiry have adopted an established practice that where serious allegations involving criminality or fraud are concerned the Commission will approach any finding it is required to make having regard to the seriousness of the allegation in question, the inherent unlikelihood of the occurrence alleged and the gravity of the consequences flowing from a particular finding.<sup>2</sup>
11. The application of the civil standard of proof in cases involving serious allegations was discussed by Dixon J in *Briginshaw v Briginshaw* (1938) 60 CLR 336 at 361:
 

...reasonable satisfaction is not a state of mind that is attained or established independently of the nature and consequences of the fact or facts to be proved. The seriousness of an allegation made, the inherent unlikelihood of an occurrence of a given description, or the gravity of the consequences flowing from a particular finding are considerations which must affect the answer to the question whether the issue has been proven to the reasonable satisfaction of the tribunal. In such matters 'reasonable satisfaction' should not be produced by inexact proofs, indefinite testimony or indirect inferences.
12. Similarly, in *Neat Holdings Pty Ltd v Karajan Holdings Pty Ltd* (1992) 110 ALR 449 at 449-450, the majority of the High Court stated (citations omitted):
 

The ordinary standard of proof required of a party who bears the onus in civil litigation in this country is proof on the balance of probabilities. That remains so even where the matter to be proved involves criminal conduct or fraud. On the other hand, the strength of the evidence necessary to establish a fact or facts on the balance of probabilities may vary according to the nature of what it is sought to prove. Thus, authoritative statements have often been made to the effect that clear or cogent or strict proof is necessary "where so serious a matter as fraud is to be found". Statements to that effect should not, however, be understood as directed to the standard of proof. Rather, they should be understood as merely reflecting a conventional perception that members of our society do not ordinarily engage in fraudulent or criminal conduct and a judicial approach that a court should not lightly make a finding that, on the balance of probabilities, a party to civil litigation has been guilty of such conduct.

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<sup>1</sup> Given provisions such as s17 of the *Commissions of Inquiry Act 1950* (Qld).

<sup>2</sup> See Hon. Terence Cole *Final Report of the Royal Commission into the Building and Construction Industry*, Vol 2, pp 48-49 (February 2003); Hon. Neville Owen *Final Report of the HIH Royal Commission*, Vol 1, [1.2.6] (April 2003); Hon. Terence Cole *Report of the Inquiry into Certain Australian Companies in relation to the UN Oil-for-Food Programme*, Vol 1, [6.17]-[6.18] (November 2006).

13. To the extent that the Commission proposes to make findings on the basis of circumstantial evidence the words of the unanimous High Court in *Bradshaw v McEwans Pty Ltd* (1951) 217 ALR 1 at 5 are apposite:

In questions of this sort, where direct proof is not available, it is enough if the circumstances appearing in evidence give rise to a reasonable and definite inference: they must do more than give rise to conflicting inferences of equal degrees of probability so that the choice between them is mere matter of conjecture...<sup>3</sup>

14. In *Jones v Dunkel* (1959) 101 CLR 298, Dixon CJ quoted that passage and then stated (at 305):

But the law which this passage attempts to explain does not authorise a court to choose between guesses, where the possibilities are not unlimited, on the ground that one guess seems more likely than another or the others. The facts proved must form a reasonable basis for a definite conclusion affirmatively drawn of the truth of the fact which the tribunal of fact may reasonably be satisfied.

15. Accordingly, where circumstantial evidence before the Commission is consistent with conflicting inferences of equal probability, the Commission ought not make any adverse finding.
16. In addition, the Commission ought not make any finding that the conduct of any person has amounted to a criminal offence or could give rise to civil liability. Even in inquiries established for the express purpose of reporting on whether certain matters might have constituted a breach of the law, Commissioners have refrained from drawing any conclusion that the law has been breached.<sup>4</sup>
17. The reasons for that were explained by Justice Owen in the *Final Report of the HIH Royal Commission*,<sup>5</sup> in a passage quoted with approval by Justice Cole in the *Final Report of the UN Oil-for-Food Inquiry*:<sup>6</sup>

There are several reasons for following that course. First, a finding in those terms would not be binding on or enforceable against anybody. It could become binding or enforceable only as

<sup>3</sup> That passage has frequently been cited with approval: e.g. *Luxton v Vines* (1952) 85 CLR 352 at 359 (Dixon, Fullagar and Kitto JJ); *Holloway v McFeeters* (1956) 94 CLR 470 at 480-481 (Williams, Webb and Taylor JJ); *Jones v Dunkel* (1959) 101 CLR 298 at 304-305 (Dixon CJ); *Girlock (Sales) Pty Ltd v Hurrell* (1982) 149 CLR 155 at 161 (Stephen J) and 168 (Mason J); *Palmer v Donovan* [2005] NSWCA 361 at [35] (Ipp JA); *Asim v Penrose* [2010] NSWCA 366 at [143] (Tobias JA, with whom Macfarlan and Young JJA agreed); *Employment Services Australia Pty Ltd v Poniatowska* [2010] FCAFC 92 at [106] (Stone and Bennett JJ); *Hilliard v Westpac Banking Corporation* (2009) 25 VR 139 at 151 [47] (Maxwell P and Osborne JA, with whom Dodds-Streeeton JA agreed). See also *Batiste v State of Queensland* [2002] 2 Qd R 119 at 145 [110] (Muir J, dissenting).

<sup>4</sup> Hon. Neville Owen *Final Report of the HIH Royal Commission*, Vol 1, [1.2.6] (April 2003); Hon. Terence Cole *Report of the Inquiry into Certain Australian Companies in relation to the UN Oil-for-Food Programme*, Vol 1, [6.17]-[6.18] (November 2006).

<sup>5</sup> Hon. Neville Owen *Final Report of the HIH Royal Commission*, Vol 1, [1.2.6] (April 2003).

<sup>6</sup> Hon. Terence Cole *Report of the Inquiry into Certain Australian Companies in relation to the UN Oil-for-Food Programme*, Vol 1, [6.17] (November 2006).

a consequence of subsequent proceedings before or actions by other bodies. For example, a finding that the law has been breached is of no effect until it has been made by a court of competent jurisdiction.

Second, specific findings of that type could give rise to the serious risk of inconsistency with subsequent findings by courts or other bodies whose task it is to make binding and enforceable determinations in these areas. The rules of evidence would apply in any subsequent proceeding; they do not apply in this inquiry. The practices and procedures in the court before which proceedings might subsequently come will be quite different from those adopted in the inquiry and include additional evidentiary and other safeguards. For these reasons alone, the inquiry's findings of fact may not necessarily be the same as those that a court would make...

Third, an expression by me of a concluded view could prejudice any subsequent proceedings. This is especially so because the evidence adduced in the later proceedings may differ from that presented to the inquiry...

There is a further reason for declining to make finding of criminal (or, for that matter, civil) liability. A court makes legally binding determinations and because of that will not make a finding unless it is satisfied to a specific standard. My determinations are not legally binding and there is no specific standard to which I must be persuaded before making a finding that there might have been a breach of the law.

18. It is respectfully submitted that those reasons are compelling and apply to the proceedings of this Commission.
19. In addition, the Commission ought not make any finding to the effect that any person has committed a criminal offence because:
  - (a) an adverse finding would affect the reputations of the individuals involved and could cause those individuals and their families to be the subject of abuse, threats or assaults; and
  - (b) the inevitable publicity given to any adverse findings may prejudice a fair trial in any subsequent criminal proceedings.
20. Further, if the Commission finds that the serious allegations against the flood engineers have been proven, the findings to that effect should be contained in a confidential annexure to the report. The practice of placing material relating to the alleged commission of criminal offences into a confidential annexure was adopted by Justice Cole in the *Final Report of the Inquiry into the Building and Construction Industry*: see Vol 2, p 48 and Volume 23 (Confidential Volume).



### III CONSCIOUS SELECTION AND USE OF STRATEGIES

#### Introduction

21. A key question in the case is whether the manual required the flood engineer to make a conscious decision in order to invoke strategy W3 when the lake level reached 68.5m AHD.
22. The question needs to be examined from two perspectives.
23. First, it needs to be examined as a matter of legal interpretation. Here we are concerned with the correct legal interpretation of the manual. This is the perspective that will govern the inquiry as to whether there was compliance with the manual.
24. Secondly, it needs to be examined from the perspective of the flood engineers. Here we are concerned with what they believed the manual to mean. This is the perspective that will inform the inquiry as to:
  - (a) the methodology employed in the writing of the flood event report;
  - (b) what the flood engineers intended to convey by the words used in the flood event report; and
  - (c) whether, by the use of those words, they intended to deceive the Commission.
25. The importance of this second perspective derives from the principles reflected in *Krakowski v Eurolynx Properties Ltd* (1995) 183 CLR 563 at 576-577:
 

The sense in which a representation would be understood by a reasonable person in the position of the representee is prima facie the sense relevant to the question whether the representation is false. The sense in which a representation is understood by the representee is relevant to the question whether the representation induced the representee to act upon it. And the sense in which the representor intended the representation to be understood is relevant to the question whether the representation was made fraudulently.
26. The following passage from *Akerhielm v De Mare* [1959] AC 789 at 805-806 was cited in support of the last proposition:
 

The question is not whether the defendant in any given case honestly believed the representation to be true in the sense assigned to it by the court on an objective consideration of its truth or falsity, but whether he honestly believed the representation to be true in the sense in which he understood it albeit erroneously when it was made. This general proposition is no doubt subject to limitations. For instance, the meaning placed by the defendant on the representation made may be so far removed from the sense in which it would be understood by any reasonable person as to make it impossible to hold that the defendant honestly understood the representation to bear the meaning claimed by him and honestly believed it in that sense to be true ... (For the general proposition that regard must be had to the sense in

which a representation is understood by the person making it, see *Derry v Peek*; *Angus v Clifford*; *Lees v Tod*, which authorities must, in their Lordships' view, be preferred to *Arnison v Smith* so far as inconsistent with them.)

### **Application of the manual in the circumstances prevailing on Saturday 8 January at 8am**

27. The manual allows a transition from W1 to a higher strategy in each of two situations:
- (a) where the lake level is below but likely to exceed 68.5m, and the flood engineer makes a decision to transition to a higher strategy: pages 23, 27 and 28 of the manual;
  - (b) where the lake level reaches 68.5m, in which case a transition is mandated by the manual: page 26, last sentence.

Mr. Ruffini said that based on experience in the October and December 2010 floods, the flood engineers' practice was not to transition in advance of the level reaching 68.5m.<sup>7</sup>

28. At the time the level reached 68.5m, the dam was releasing 927m<sup>3</sup>/s, which was considerably greater than the naturally occurring downstream flows at Lowood and Moggill. Consequently, at the time the manual mandated a transition to a higher strategy, the releases from Wivenhoe were greater than the then maximum permissible release under W2. In those circumstances, W2 was inapplicable (or, as some of the experts put it, irrelevant). Consequently, in the circumstances prevailing at 8am, the manual mandated that W3 be used. The flood engineer had no choice in the matter. This was the view of the experts, Professor Apelt,<sup>8</sup> Mr. Roads,<sup>9</sup> Mr. Shannon<sup>10</sup> and Mr. Babister.<sup>11</sup> It was also the view of each of the four flood engineers.<sup>12</sup>
29. If at the time the lake level reached 68.5m, the naturally occurring peak flows at Lowood and Moggill were in excess of releases from Wivenhoe, then both W2 and W3 would have been available, and the flood engineer would need to make a choice between them. But in the circumstances that prevailed at 8am, W2 was unavailable (because the then rate of release from Wivenhoe was outside the maximum rates of release permissible at that time under W2). Consequently, there was no choice. Rather, the manual mandated the transition to W3. If the

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<sup>7</sup> T5395/1 - 10

<sup>8</sup> T5734 /15 - 35

<sup>9</sup> T5768/40, T5772/8, T5795/50 and T5796 to T5797/30

<sup>10</sup> T5819/20 - 30, T5820/9 - 13, T5841/1 - 60

<sup>11</sup> T5894/40 - T5895/30

<sup>12</sup> Mr Ruffini's evidence is at T5441/50-T5442/16; Mr Ayre's evidence is at T5262/35-T5265/35; Mr Tibaldi's evidence is at T5070/5-T5071/30; T5154/30-40; Mr Malone's evidence is at T5357/35-T5358/7

flood engineer at the time had wished to employ W2, the flood engineer could have scaled back the releases until they were less than the naturally occurring peaks at Lowood and Moggill and, once that state was reached, then transitioned to W2. That would be a transition to W2 by decision of the flood engineer. But it would not avert the manual's requirement to use W3 as from 8am. All it would involve is that, after W3 was imposed by the manual, some hours later (when the releases from Wivenhoe had been scaled back), the flood engineer could make a transition by choice to W2. But the scaling back of the releases after 8am would not alter the fact that, at the time the lake level reached 68.5, a transition was invoked by the manual, and was necessarily invoked as a transition to W3 (as W2 was then unavailable). This was the effect of the evidence of Mr. Roads,<sup>13</sup> and should be accepted.

30. The task the manual imposed on the flood engineer was to use W3 in managing the dam from the time the lake level reached 68.5m. That was the view of each of Professor Apelt,<sup>14</sup> Mr. Roads,<sup>15</sup> Mr. Shannon<sup>16</sup> and Mr. Babister.<sup>17</sup> It was also the view of each of the four flood engineers.<sup>18</sup> In addressing whether there was compliance with the manual, the critical question, therefore, is whether the flood engineers did use W3 in managing the dam at and from 8am on Saturday the 8<sup>th</sup>.

### **What the manual requires in order to use strategy W3**

31. Applied to the circumstances existing in the period 8 to 10 January, to manage the dam in accordance with W3 the manual required (in essence) that when making decisions on water releases:
- (a) primary consideration be given to protecting urban areas from inundation;
  - (b) secondary consideration be given to lower level objectives; in particular minimising disruption to downstream rural life;
  - (c) the maximum rate of release be that which will produce a flow in the Brisbane River at Moggill of 4,000m<sup>3</sup>/s;

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<sup>13</sup> T5798/47 - 57

<sup>14</sup> T5734/30 - 35

<sup>15</sup> T5797/10 - 30

<sup>16</sup> T5842/5 - 10

<sup>17</sup> T5895/30 - 32

<sup>18</sup> Mr Ruffini's evidence is at T5441/50-T5442/16; Mr Ayre's evidence is at T5262/35-T5265/35; Mr Tibaldi's evidence is at T5070/5-T5071/30; T5154/30-40; Mr Malone's evidence is at T5357/35-T5358/7

- (d) the rate of release is not to be limited by reference to the naturally occurring peak flows at Lowood and Moggill.
32. It will be seen that two of the requirements engage the flood engineer's state of mind, namely (a) and (b). But if the flood engineer has that state of mind, and meets the other requirements ((c) and (d)), then the flood engineer has met the performance criteria of W3. In those circumstances, the flood engineer has discharged the obligations imposed by the manual as regards the use of W3.
33. It is not necessary under the manual that the flood engineer thinks to himself "I am now using W3" or, as some of the experts put it, subjectively place a label or chapter heading on the strategy he is using. Nor is it necessary that the flood engineer communicate to others that he is using W3, or write that down. The manual, properly construed, establishes that W3 is a collection of performance criteria. So long as the flood engineer achieves those criteria in making decisions about releases, then the flood engineer is discharging the obligation under the manual to use W3. This was the view of Professor Apelt,<sup>19</sup> Mr. Roads<sup>20</sup> and Mr. Shannon.<sup>21</sup> It should be accepted.
34. It would be a mistake to interpret the manual as though it included a command "The flood engineer must at all times be conscious of the identity of the strategy in use in managing the dam". There are no words to that effect in the manual. Nor is there any written requirement to communicate what strategy the flood engineer is employing, or to record it. It may be that the manual should be changed in the future to require those things. But it did not require them at the time of the January 2011 flood event. As Professor Apelt, Mr. Roads and Mr. Shannon variously said, if the flood engineer appreciates the relevant change in lake level, applies the criteria to which he is required to have regard when the lake reaches that level, then he would be acting in accordance with the manual, whether or not in his own mind he subjectively attaches a particular strategy label to the situation.<sup>22</sup>
35. Professor Apelt said:

COMMISSIONER: So you don't think it is necessary to consciously decide what strategy you were in, or what is it that you are saying?-- I don't think it is necessary for you to advert explicitly to the fact that "This is W3". It is essential that you are conscious of the fact that the dam has passed a certain threshold. For that condition we must do certain things. So it is

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<sup>19</sup> T5732/50 - 60

<sup>20</sup> T5775/20 - 27 and T5805

<sup>21</sup> T5820/43 to T5821/10, T5824/40 - 45, T5848/20 - 43

<sup>22</sup> Shannon at T5820/43 - T5821/20, T5825/10 - 20 and T5848/20 - 42; Mr. Roads T5775/20 - 27 and T5805; Professor Apelt T5727/30 - 43, T5728/40 - 60 and T5732/10 - 15

essential that they have a clear understanding of what is required for them to do. Whether they think, "This is W3", or whatever, is not for me the essence.<sup>23</sup>

36. Mr. Roads said:

Alternatively, if they believe they were under W2, their actions were, you would say, non-compliant with the strategy that they believed they were in?-- I - I must admit, I struggle with this to try and work out what only - what matters is not what label they give it, it is what they actually released and whether those releases were in compliance with the manual.

...

Look, to be very direct about it, what you've done is look at what they did and you've determined retrospectively what manual strategy they were under?-- Yes, and looked as whether they've satisfied the criteria in each of those strategies.<sup>24</sup>

37. Mr. Shannon said:

Because the primary considerations, you have to take into account that, and you have to take into account what's in the manual?-- Sure.

Now, is it the case that - it's not the case, is it, that you go through a flood event and then you work back through the flood event to work out when the strategies were engaged?-- To put the terminologies of the formal strategies, that might be required because you mightn't be logging it according to the defined strategies. It might be the defined levels and the outflows. So when you put the report together, you would be cross-referencing the flood manual and putting the appropriate labels on it, yes.

But each flood engineer who was operating the dam at any particular time during the flood event would know what strategy he was operating the dam under?-- He would know what the requirements were according to the circumstances at the time. Whether it would be in the front of his mind to put the label of the strategy on it, I wouldn't be too concerned.

So you wouldn't be concerned if the report was prepared not on the flood engineer's recollection of their choices as to strategy, but based on a reconstruction of the events having regard to when the lake reached certain levels?-- I would expect them to know exactly when they needed to consider varying their operating strategy according to the lake levels, which is the primary requirement under the manual. You can look up to the heading of that requirement and it will say what strategy that falls under.<sup>25</sup>

### **Did the flood engineers meet the performance requirements of W3 at and from 8am on Saturday the 8th?**

38. The evidence in respect of this is dealt with in more detail in Part IV below. But it can immediately be said that the following are important pieces of evidence:

- (a) Mr. Ruffini said that towards the end of his shift (which ended at 7am on Saturday 8<sup>th</sup>), he had an appreciation that the lake level would shortly reach 68.5, that that

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<sup>23</sup> T5732/50 - T5733/5

<sup>24</sup> T5775/18 - 25 and 40 - 50

<sup>25</sup> T5824/50 - T5825/20

would require a transition to a higher strategy, and that the prime consideration would become protecting against urban inundation.<sup>26</sup>

- (b) Mr. Ayre swore<sup>27</sup> that, on Saturday 8<sup>th</sup>, he had an actual recollection of noticing that the lake level reached 68.5, that under the manual a transition to a higher strategy was now required because of the 68.5m level, and that he thereafter managed the dam with protecting urban areas from inundation as his primary consideration.
- (c) At 8.15am Mr. Ayre issued a Wivenhoe gate directive which had the effect of increasing the releases from about 920m<sup>3</sup>/s to 1247m<sup>3</sup>/s by 2pm. The expert opinion of Mr. Roads<sup>28</sup> and Mr. Shannon<sup>29</sup> was that this increase in releases was appropriate to a shift to urban protection as the prime consideration, and was neutral as regards minimising disruption to downstream rural life.
- (d) At 11.30am on Saturday 8<sup>th</sup>, Mr. Ayre issued Somerset gate directive 3.<sup>30</sup> The language of this directive suggests a flood engineer who is watching for changes in key levels under the manual, who is appreciating that reaching the level of 100.45 mandates the use of a different strategy (namely strategy S2) and who is seeking to maximise the mitigation storage benefits in both dams. Mr. Ayre swore that he was seeking to utilise the maximum storage benefits of both dams in order to provide protection against the risk of urban inundation.<sup>31</sup> This was supported by the evidence of Mr. Shannon.<sup>32</sup>
- (e) At 12pm on Saturday 8<sup>th</sup> Mr. Ayre issued his situation report, which recorded "... it is intended to increase the release from Wivenhoe to 1250m<sup>3</sup>/s by 14.00 ... This will maintain flows of up to 1600m<sup>3</sup>/s in mid Brisbane River throughout the afternoon". Mr. Ayre gave evidence that, from information gleaned during the October and December floods, a flow of 1600m<sup>3</sup>/s in the mid Brisbane River was a level at which interference started to be caused (e.g. to low lying areas such as bikeways, paths, carparking, interruption to ferry services, etc).<sup>33</sup> This was confirmed by the

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<sup>26</sup> T5442 - 3 and T5445 - 6

<sup>27</sup> T5266/55 - T5267/15. NB - in the question at T5267/6 the words "a natural" are a mistake. The words should be "an actual".

<sup>28</sup> T5802/10 - 20 and T5802/45 - 50

<sup>29</sup> T5844/8 - 32

<sup>30</sup> Flood Report appendix L at page 66

<sup>31</sup> T6119/50 - T6120/43

<sup>32</sup> T5845/35 - T5847/10

<sup>33</sup> T6118 - 9

evidence of Mr. Morris from the BCC,<sup>34</sup> the telephone call recorded in the Flood Log on 8 January 2011 at 11.30am and the evidence of Mr. Ablitt.<sup>35</sup> Mr. Ayre gave evidence that pitching releases at a level which would produce flows not greater than 1600m<sup>3</sup>/s in the mid-Brisbane River was designed to balance not causing urban inconvenience with maximising the flood storage capacity of Wivenhoe (and Somerset) so that, if the flood event worsened, the dams would have maximum ability to avoid releases which would cause urban inundation.<sup>36</sup>

- (f) During the remainder of Saturday and Sunday, the level of releases was maintained and, gradually increased (from about 1250m<sup>3</sup>/s to about 1400m<sup>3</sup>/s). The opinion of the experts was that this increase in the rate of release on the Saturday and Sunday was appropriate to protecting urban areas against inundation, but was neutral as regards minimising disruption to downstream rural life.<sup>37</sup>
- (g) The situation reports which issued on the 8<sup>th</sup> at 6pm, on the 9<sup>th</sup> at 6am and 5pm each recorded that the strategy was to maintain releases which would produce a flow of around 1,600m<sup>3</sup>/s in the mid-Brisbane River. That was a strategy of urban protection, namely by balancing releases so as not to cause urban interference with maximising flood storage capacity at both dams.
- (h) By 4pm on Sunday the 9<sup>th</sup>, the flood engineer had decided upon a pattern of releases which would exceed 2,000m<sup>3</sup>/s (i.e. above the maximum level in W1). This can be seen from ex.22 (model run 19) and is confirmed by the 9pm situation report.
- (i) Mr. Malone gave evidence that throughout his shift on Sunday the 9<sup>th</sup> from 7am he appreciated that the lake level was above 68.5m, that the manual dictated the use of a higher strategy and that his primary consideration throughout his shift was protecting urban areas from inundation. Mr. Malone said that the language used in the situation report he issued at 9pm (“... the objective for dam operations will be to minimise the impact of urban flooding ... etc”), was not a change of approach, but reflected the approach he had taken throughout his shift commencing at 7am.<sup>38</sup>

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<sup>34</sup> T2166/17-55; Statement of Mr Morris, paragraphs 33-36; KJM-3 at page 10 of 15

<sup>35</sup> T5317

<sup>36</sup> T5268 - 5270

<sup>37</sup> Mr. Roads at T5803/1 - 15 and Mr. Shannon at T5847

<sup>38</sup> T5335/20 - 25, T5367/35 - 50

- (j) Each of the experts expressed the opinion that, upon an analysis of the decisions as to releases made over those two days by reference to the information available to the engineers, the decisions as to releases complied with operating the dam under W3.<sup>39</sup>
- (k) The pattern of releases over the Saturday and Sunday was at all times considerably greater than the naturally occurring peak flows at Lowood and Moggill (as can be seen from comparing ex.22 with the flood report at pages 155 - 157). That is consistent with the use of W3, and inconsistent with the use of W2.<sup>40</sup> This supports a conclusion that W3 was in use, not W2.
- (l) It seems highly unlikely that all four flood engineers working shifts over those two days would have overlooked the significance of the lake level being above 68.5m, and that a transition to a higher strategy was mandated by the manual. There are three key levels in the manual, 67.0m, 68.5m and 74.0m. It is improbable that the four experienced flood engineers would all have missed the fact that one of the key levels had been exceeded, and that that triggered a need to utilise a higher strategy in operation of the dam. The evidence established that on at least an hourly basis the flood engineers were receiving information as to the current lake level, and entering those levels in the gate operations spreadsheets. It also established that Mr. Ayre was a man who was conscious that a change in lake levels on Somerset triggered a need for a different strategy for that dam. Mr. Tibaldi, of course, was the author of the manual, and asserted strongly that he would at all times closely follow the manual.<sup>41</sup>
- (m) Mr. Roads (whose speciality is in flood modelling)<sup>42</sup> said that he could discern from the flood modelling carried out by the engineers on the Saturday (after 8am), the Sunday and the Monday what the flood engineers were considering in their decisions, and what their primary objectives were. His evidence was that he discerned from the flood modelling they carried out that the primary objectives over those three days were to prevent inundation of properties through Brisbane and Ipswich by keeping flows below 3,500m<sup>3</sup>/s, 4,000m<sup>3</sup>/s at Moggill. He also said that he could discern from their modelling that their operating strategy had not changed significantly over those three days.<sup>43</sup>

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<sup>39</sup> Professor Apelt T5735/1 - 10 and T5736/10 - 20; Mr. Roads T5799/15 - 40 and T5799/55 - T5800/3; Mr. Shannon T5847/30, T5848/10

<sup>40</sup> Mr. Roads at T5804/20 - 35 and Mr. Shannon T5842/30 - 50

<sup>41</sup> T6126/50 - T6127/10

<sup>42</sup> T5769/17

<sup>43</sup> T5799/30 - T5800/5



39. The above matters justify a finding by the Commission that the flood engineers met the requirements of the manual for the use of W3 over the period from Saturday to Monday. Most compelling, of course, is the unanimous opinion of the experts that the decisions the flood engineers made regarding releases satisfied the requirements of W3.

### **The Flood Report**

40. By reference to the principles discussed at paras. 24 - 26 above, in determining whether the four flood engineers deliberately misled by what was said in the flood report, the first thing is to arrive at the sense in which the four flood engineers understood the meaning conveyed by the relevant parts of the flood report.
41. Each of the flood engineers gave evidence that, to his understanding in the circumstances operating at 8am on Saturday 8<sup>th</sup>:
- (a) the manual dictated an automatic transition from strategy W1 to strategy W3 as the lake level had reached 68.5 and the releases from the dam exceeded the then maximum rate of release permissible under W2; and
  - (b) the role of the flood engineer in those circumstances was not to subjectively select a strategy, but rather to use the strategy mandated by the manual.<sup>44</sup>
42. The reasonableness of this view is supported by the experts, including Mr Babister.<sup>45</sup>
43. Read against this background, the flood report is not saying that W3 was invoked by a decision of the flood engineer at 8am on Saturday 8<sup>th</sup>. Rather, it is saying that W3 was used from that time. That is supported by the language appearing at p.190 "... strategy W3 was adopted for use at 8.00 on Saturday 8 January 2011." The language used to describe the adoption for use of W3 is in contrast to the language used to describe the transition to W4: "... at the start of this period it was decided to transition to strategy W4" (page 194).
44. In summary, the flood report (as understood by the flood engineers) conveys that as from Saturday at 8am the flood engineers began using strategy W3 in managing the dam.

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<sup>44</sup> Mr Ruffini's evidence is at T5441/50-T5442/16; Mr Ayre's evidence is at T5262/35-T5265/35; Mr Tibaldi's evidence is at T5070/5-T5071/30; T5154/30-40; Mr Malone's evidence is at T5357/35-T5358/7.

<sup>45</sup> Professor Apelt's evidence is at T5734/15-35; Mr Roads's evidence is at T5795/30-T5799/15; Mr Shannon's evidence is at T5841/48-T5842/10; and Mr Babister's evidence is at T5332/45-T5333/33.

45. The flood report also addresses the by-passing of W2. This is expressed in different ways at pages 13 and 190. At page 13 it was said "... strategy W2 couldn't be applied". And it is also said:

Strategy W2 was by-passed as it was not possible to achieve this strategy by limiting the flow in the Brisbane River to less than the naturally occurring peaks at Lowood and Moggill.

Read against the understanding of the four flood engineers as to what the manual mandated when the level reached 68.5m, these passages should be understood as conveying that W2 could not be applied (because the then level of releases was above the rate of release at that time permissible under W2), and that strategy W2 was by-passed by circumstances, rather than by a decision of the flood engineer. The reasonableness of that understanding is supported by each of the experts, including Mr. Babister.<sup>46</sup>

46. The phrase "adopted for use" suggests conscious action by the flood engineer to commence to use strategy W3 in managing the dam. It should be found that that is what occurred. That is based on the evidence that:
- (a) on Saturday 8<sup>th</sup> when the lake level reached 68.5m, Mr. Ayre swears that he had an actual recollection of appreciating that the dam level had reached 68.5m, and that that required a transition to a higher strategy;
  - (b) Mr. Ayre swears that from 8am on that Saturday his primary consideration became that of protecting urban areas from inundation;
  - (c) Mr. Ayre sought to give effect to that by:
    - (i) increasing releases from Wivenhoe to about 1250m<sup>3</sup>/s, which would produce a flow in the mid-Brisbane River of 1,600m<sup>3</sup>/s;
    - (ii) managing the releases from Somerset into Wivenhoe so as to maximise the benefits of the flood mitigation storage in both dams;
  - (d) Mr. Ayre did not seek to limit releases from Wivenhoe to the naturally occurring peak flows at Lowood and Moggill, but at all times from 8am decided upon releases from Wivenhoe which were substantially above that permitted under W2.

On the basis of this evidence, it should be found that there was conscious deployment of W3 by Mr. Ayre at and from 8am on Saturday 8<sup>th</sup>. The conscious use of strategy W3 is met by

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<sup>46</sup> T5894 - 5

Mr. Ayre consciously performing each of the four key criteria of W3. It did not also require that Mr. Ayre subjectively think to himself “I am now in W3” or otherwise subjectively label what he was doing (much less record it or communicate it to others).

47. It follows that there was therefore nothing deliberately misleading in the flood report regarding this change of strategy.

#### IV THE INDIVIDUAL FLOOD ENGINEERS

##### Introduction

48. Given the allegations of collusion, it is instructive to consider the position of each of the flood engineers separately. The state of mind of each of them was informed by their own experience over the relevant period.
49. A number of observations may be made at the outset in respect of the evidence given by the flood engineers as to what they were doing and thinking over the relevant period.
50. *First*, their evidence is supported by the gate operations spreadsheets that they were actually using at the time. Those spreadsheets are in evidence in Ex 524, Attachment 34. They are important because they show unambiguously what the flood engineers knew and did at the time, and are consistent with their evidence.
51. *Secondly*, the proposition that over the relevant period the flood engineers were actually using W3 and giving primary consideration to protecting urban areas from inundation is corroborated by the fact that, as set out in Part VIII below, there is a unanimous body of expert evidence to the effect that the releases actually made by the flood engineers over the relevant period were appropriate and reasonable:
- (a) for operations under strategy W3 in the prevailing circumstances; and
  - (b) for giving primary consideration to protecting urban areas from inundation.
52. On the case being advanced by counsel assisting, this must have occurred by accident. However, the inherent likelihood is otherwise. That is, the inherent likelihood is that the flood engineers chose release rates that were appropriate and reasonable for operations under W3, and for giving primary consideration to protecting urban areas from inundation, because they were consciously using W3, and were consciously giving primary consideration to protecting urban areas from inundation.

53. **Thirdly**, each of the flood engineers gave evidence they would not have given if they were dishonest witnesses endeavouring to cover up any suggested non-compliance with the manual. For example:
- (a) Mr Tibaldi said he could not recall whether he turned his mind to whether he was in W2 or W3 when he came on shift at 7pm on Saturday, 8 January 2011.<sup>47</sup> If Mr Tibaldi was a dishonest witness intent on covering up any suggestion of breach, it would have been simple for him to assert that he actually recalled appreciating that he was in W3 at that time.
  - (b) Similarly, Mr Ruffini acknowledged that he could not recall specifically turning his mind to the unavailability of strategy W2 early on the Saturday morning.<sup>48</sup> Mr Ayre said he could not recall whether at 8 o'clock on Saturday he was consciously aware that they were in W3.<sup>49</sup> Mr Malone said he could not recall thinking at the start of his shift on Sunday "Oh, now we are at W3".<sup>50</sup> Again, if they were dishonest witnesses intent on perpetrating a cover up, they would not have given this evidence.
  - (c) Also, the flood engineers did not attempt to deny that the words recorded in the entry in the flood event log for 3.30pm, 9 January 2011 were used during the teleconference.<sup>51</sup> It would have been easy for a dishonest witness to seek refuge in the recognised infirmity of the flood event log, and seek to pass the entry off as yet another inaccurate account. Yet none of the engineers did this.
54. **Fourthly**, there are important parts of the flood event report which show that Mr Tibaldi was endeavouring to be candid, rather than to cover up.
55. A prime example here concerns the by-passing of W2. Mr Tibaldi had an honest concern that going straight from W1 to W3 might have constituted a breach of the manual because it did not appear to be permitted by the flowchart on page 23. Yet he did not attempt to conceal this fact in the flood event report. He would not have done this if he was attempting to fabricate a report which put paid to any suggestion that there might have been a breach of the manual.
56. Other examples include the clear statements in the flood event report about attempts to keep the Fernvale and Mt Crosby Weir bridges open over the course of the weekend. If he was

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T5052/7-18.

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T6084/43-T6085/12.

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T5220/50-52.

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T5360/53-57.

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Ruffini: T5402/29-50; Ayre: T5193/25-40; Tibaldi: T5058/28-53 Malone: T5301/10-20.

attempting to avoid any argument about the engineers' primary consideration over the course of the weekend, he would have omitted these statements, or at least given them less emphasis.

### **Mr Ruffini**

57. Mr Ruffini was on shift from:

- (a) 7pm on Friday, 7 January 2011 to 7am on Saturday, 8 January 2011; and
- (b) 7pm on Sunday, 9 January 2011 to 7am on Monday, 10 January 2011.

### *Mr Ruffini's first shift*

58. Prior to Mr Ruffini coming on shift at 7pm on Friday, 7 January 2011, Mr Malone had produced a version of the gate operations spreadsheet which showed a release pattern which, if followed, would take the lake level over 68.5.

59. Mr Ruffini looked at that spreadsheet when he came on shift.<sup>52</sup>

... when I came on to the shift, Terry Malone had started producing a spreadsheet which had, if you like, a record of the releases - the release strategy - not strategy. Sorry. The release pattern, if you like, that he'd proposed for the next period moving forward. Now, during that period after I took over, I reviewed that spreadsheet and reviewed the releases that would happen over the next period. Now, within that spreadsheet it had it starting to lift flows during my shift, but at the end of the shift it's getting towards the 68.5, which is the transition into W3. So when I took over in terms of that, then we would have been W1 strategy. At the end of the shift - towards the end of the shift after Rob took over, it would have - the lake level would have hit the 68.5 and you would have transitioned into the W3.

60. The actual spreadsheet Mr Ruffini was referring to is in evidence.<sup>53</sup> Mr Ruffini asked for it a number of times when he was giving his evidence, but he was not permitted to see it. He said it was described as "SDWD-201101071800".<sup>54</sup> It accords precisely with his evidence. In particular:

- (a) The code suggests that it was created at "1800". That appears from the last four numbers of the code. This was whilst Mr Malone was on shift, and an hour before Mr Ruffini was due to commence his shift.
- (b) The entries in the body of the "gate operations" tab of the spreadsheet suggest that it was being worked on by Mr Ruffini throughout the whole of his shift. That appears from, inter alia, the fact that in the "Rec Gauge Boards" column, entries were being made until "0700" on Saturday, 8 January 2011. Those entries are made manually by

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<sup>52</sup> T5390/20-35.

<sup>53</sup> Ex 524, Attachment 34.

<sup>54</sup> T5391/39.

the flood engineer on duty by reference to information relayed from the dam as to the lake level according to a manual reading of the gauge board.<sup>55</sup> The entry at “0700” was obviously Mr Ruffini’s final entry before departing.

- (c) It is apparent from this tab of the spreadsheet that:
- (i) The entries in the “Rec Gauge Boards” column had risen steadily during Mr Ruffini’s shift. The entry for “1900” on Friday, 7 January 2011 (the start of his shift) was 68.17. The entry for “0700” on Saturday, 8 January 2011 (the end of his shift) was 68.48.
  - (ii) According to the planned gate operations, the lake level would exceed 68.5m on the morning of Saturday, 8 January 2011.
  - (iii) The current releases from Wivenhoe were 891 cumecs.
  - (iv) According to the planned gate operations, releases would be increased to 1247 cumecs by 2pm on Saturday, 8 January 2011, and that releases would plateau at that point.
  - (v) According to the planned gate operations, the lake level:
    - A. would peak at 68.511 at 1400 on Saturday, 8 January 2011; and
    - B. would be drained back below 67m by 1300 on Tuesday, 11 January 2011.
- (d) When Mr Ruffini conducted model run 9 at 7am on Saturday, 8 January 2011, the final version of the spreadsheet was saved as “run9”. The particular spreadsheet within “run 9” to which attention must be directed is “SDWD\_run9\_nr.xls”. Within that spreadsheet, the “summary” tab is of particular importance. It shows the peak flows at Lowood and Moggill (without Wivenhoe) very clearly as being 531 and 691 cumecs respectively.
61. Paragraphs 51 to 54 of the submissions of counsel assisting betray a misunderstanding of the significance of the spreadsheets within “SDWD-201101071800” and run 9.
62. If the witnesses had been permitted to see the documents and explain them, this misunderstanding may not have occurred.

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T5163.

63. A copy of the salient parts of “SDWD-201101071800” and run 9 are annexed to these submissions as Annexures A and B respectively.
64. It is clear enough on the face of the documents that “SDWD-201101071800” was *created* by Mr Malone whilst he was on shift at “1800”.
65. However, in paragraph 53 of their submissions, counsel assisting suggest that this document was “*presumably saved* at 6.00pm, 7 January 2011”. The suggestion is that it did not capture information added after this time.
66. This suggestion, based on presumption rather than evidence, is plainly wrong. As has already been observed, it is apparent from, inter alia, the manual entries made in the “Rec Gauge Boards” column in the “gate operations” tab that it captured information that was being added by Mr Ruffini right through his shift until 7am on Saturday, 8 January 2011.
67. Further, it is important to appreciate that “SDWD-201101071800” thus *superseded* the version Mr Malone saved when he did model run 8 at 3pm that afternoon.
68. In paragraphs 53 and 54 of their submissions, counsel assisting fix upon the 3pm spreadsheet (“SDWD-run8\_nr”), suggesting that Mr Malone had no expectation of moving out of W1 when he set his gate operations sequence, and that Mr Ruffini’s expectation must have been the same.
69. Mr Malone’s expectations, as reflected in the spreadsheet he *saved* at 3pm, cannot be equated with his expectations later that evening, as reflected in the spreadsheet he *created* at 6pm.
70. The situation had moved on and expectations had changed.
71. Moreover, when one examines the spreadsheet created at 6pm, it is perfectly clear that it was contemplating that the lake level would exceed 68.5 (and thus that there would be a transition to a higher strategy).
72. The “Cal Lake Level” column in the “gate operations” tab shows:

<b>Date/Time</b>	...	<b>Cal Lake Level</b>
Sat 08/01/11 1100	...	68.498
Sat 08/01/11 1200	...	68.505
Sat 08/01/11 1300	...	68.509

Sat 08/01/11 1400	...	68.511
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73. If (as appears to be the case) the hypothesis of counsel assisting is that this document was *saved* by Mr Malone at 6.00pm, it is impossible for counsel assisting to sustain their submission that Mr Malone's work that afternoon did not reveal any expectation that the lake level would go over 68.5 or that there would be a transition to a higher strategy.
74. The true position is that "SDWD-201101071800" reflects the work commenced by Mr Malone at 6pm, and continued by Mr Ruffini throughout that night and the following morning. Moreover, that work plainly suggests an expectation that the lake level would go over 68.5 and that there would be a transition to a higher strategy.
75. At 4.50am, Mr Ruffini issued Wivenhoe Directive 3, which required each of gates 1, 3, 4 and 5 to be opened by half a metre.<sup>56</sup>
76. Mr Ruffini was now implementing the release pattern identified in "SDWD-201101071800". As that spreadsheet shows, implementation of that release pattern would inevitably lead to the lake level exceeding 68.5. It also involved releases from Wivenhoe that were higher than the peak flows at Lowood and Moggill.
77. The decision to have releases higher than those peak flows was quite deliberate, as Mr Ruffini explained:<sup>57</sup>
- It had to do with the drain time, in terms of the - because W2 was controlled by the flows, you know, the naturally occurring flows in the Lockyer Creek, moving to W2 you wouldn't have got enough discharge out to actually get it - get a reasonable drain time. So that's why the higher, going to W3, and the higher discharge, that's why the release pattern had it going to a higher - higher release rate to get that drainage within seven days.
- And all of that was, or would have been part of, the thought process undertaken by you during your shift; is that correct?-- Yes.
78. Mr Ruffini's approach to the drain down is significant:<sup>58</sup>
- When you spoke of a draindown time for the dam, in this case at the conclusion of your shift, being about three days, what's the significance of a draindown period? Can you just briefly explain that to us?-- Okay. The - the - the - an important component of each procedure is that you have to empty the flood storage of Wivenhoe from the peak elevation.
- So from when Wivenhoe peaks you need to empty that flood storage in seven days. The reason being that there's a history of closely-spaced floods about a week apart, and there's sound meteorological reasons about why this happens, so that's effectively a big component - a big component open of the thinking.

<sup>56</sup> Ex 24, Appendix L, page 4.

<sup>57</sup> T5400/15-25.

<sup>58</sup> T6090/30-T6091/17.



So when you say empty the flood compartment, the full supply level is 67 metres?-- That's right.

When the event starts you aim to store water in the dam and then release it an draindown within seven days back to full supply level?-- That's correct, yes.

So as at the end of your shift on the 8th of January, the morning of - the Saturday morning, had the peak occurred, the peak inflow?-- No, the peak - Wivenhoe was predicted to peak not that day but, you know, in a - I could look it up, but sometime after that, and then there was a drain time associated with that, yes.

And that was all factored into the way you were managing the event at that time?-- Yes, it was.

And as at that time you had factored in a draindown time, in theory, of three days?-- I think it was about three days, yes.

So that was an aggressive management of the event?-- It was and it was to take into account of the fact that the rainfall - the forecast stuff that had been done was showing a bit more coming along, so we were on - wanted to be on the - I wanted to be on the shorter end of the drain period for that point in time. So you wanted to drain it more quickly than seven days so you had the capacity, if necessary, to expand that draindown period to a maximum of seven?-- That's right, yes.

So you exercised some judgment about the time you might need, given what the forecast told you?-- Correct, yes.

79. This shows that he was taking an aggressive approach to releases and the drain down phase so as to maximise the storage capacity of the dam in case rain that had been forecast should fall. This aggressive approach pointed unequivocally to Mr Ruffini contemplating a transition to W3 rather than W2 when the lake level reached 68.5. Releases were being ramped up quite deliberately beyond the peak flows at Lowood and Moggill.
80. At 6.32am, Mr Ruffini issued situation report 8.<sup>59</sup>
81. Under the heading "Wivenhoe (Full Supply Level 67.00 m AHD)", the report stated:
- At 0600 Saturday, Wivenhoe Dam was 68.45m AHD and rising steadily with all five gates open and releasing about 890 m<sup>3</sup>/s. River levels upstream of Wivenhoe Dam were rising again, generating further inflow to the dam. It is intended to ramp up the release from Wivenhoe to 1,200m<sup>3</sup>/s by midday Saturday 08/01/2011. Further assessments will be undertaken to determine increases above this level. However, given the high likelihood of significant inflows in the next week, this may be increased.
82. This confirms that:
- (a) the then current releases from Wivenhoe (890 cumecs) had already well exceeded the naturally occurring peak flows at Lowood (531 cumecs) and Moggill (691 cumecs); and
  - (b) Mr Ruffini's intention was that the release pattern that would inevitably lead to the lake level exceeding 68.5m would continue through the course of that day.

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<sup>59</sup> Ex 24, Appendix E, pages 13-14. Drury, RD5-123-124.

83. Under the heading “Impacts downstream of Wivenhoe”, the report stated:

The projected Wivenhoe release of 1,200m<sup>3</sup>/s combined with Lockyer flows and local runoff will mean that all crossings downstream of Wivenhoe (Twin Bridges, Savages Crossing, Burton’s Bridge, Kholo Bridge and Colleges Crossing) will be adversely affected for several days. At this stage Fernvale and Mt Crosby Weir Bridge are not expected to be affected but they could potentially be affected if the predicted rainfall totals eventuate.

The current available assessments indicate that the combined flow in the lower Brisbane R would only add 50mm to an upper limit of 100mm to the recorded water levels in the City Reach of the Brisbane Rive (sic). However, it is noted that tides in the lower Brisbane R will be 0.4 to 0.5 metres higher than predicted tides.

84. This suggests that:

- (a) Mr Ruffini was contemplating that 5 of the 7 bridges would be closed.
- (b) Mr Ruffini was giving careful consideration to impacts in urban areas.
- (c) At that stage Mr Ruffini considered that the impacts in urban areas would be minimal (50mm to 100mm, with a tide that would be higher than predicted by 0.4 to 0.5 metres).
- (d) Mr Ruffini was giving careful consideration to balancing the protection of rural and urban areas. In effect, he was recognising that rural areas could no longer be protected absolutely (hence the inundation of the 5 bridges), but that there would not yet be material impacts in Brisbane.

85. At 7.00am, Mr Ruffini conducted model run 9. That model run shows that:<sup>60</sup>

- (a) The current lake level was 68.48.
- (b) The predicted peak lake level was 68.8.
- (c) The predicted peak outflow from Wivenhoe was 1,480 cumecs.
- (d) The peak flows at Lowood and Moggill were 530 cumecs and 690 cumecs respectively.

86. The events during that shift made it clear to Mr Ruffini that there was soon going to be a shift to W3.

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<sup>60</sup> Ex 22, Appendix A1, page 2.

87. Mr Ruffini said:<sup>61</sup>

I would have looked at - if you had the spreadsheet in there, I would have said here's the lake levels, and then I would have referred to these levels and strategies about where the lake level - where we were with lake levels. So during my shift I'm looking at that. The release pattern, that sort of - that I'm proposing - that was given to me and then I futurely endorsed and went out there was proposing that we would move to - after the shift, or very soon after the shift, you would hit that 68.5 and move to a - move to a W3.

88. Mr Ruffini gave evidence as to his recollection, as well as the practices adopted in previous flood events:<sup>62</sup>

Did you understand that during the January event as the manual compelling a transition to a higher strategy if the water level actually crosses 68.5?-- Yes.

In other words, it's not an election by the flood engineer. The manual says if the water crosses that level-----?-- You're in it.

-----automatically transition to the higher strategy?-- Yes.

You said also that you had had that experience several times before?-- That's correct, yes.

You said the water level had crossed 68.5 in the '99 flood event?-- That's right, yes.

You said the October 2010 flood event?-- Yes. Can I suggest it also crossed during one of the December 2010 flood events. 31 December it reached 69.93?-- Yes.

Does that ring a bell?-- Yes, it's a reasonable - it wasn't big, but it was, you know, a sizeable event and in reality we had four events in a row before - including the 2011.

And you were a flood engineer involved in each of those events?-- Yes.

As was Mr Ayre?-- Yes.

Mr Malone and Mr Tibaldi were involved in the October and December 2010 flood events?-- That's correct, yes.

And you knew from those prior events that there was - it was obvious to you, wasn't it, during the January 2011 flood event if the water crosses 68.5, that's a significant event. There is an automatic transition to a higher strategy?-- That's correct, yes.

You recall now that being your thinking towards the end of your shift on that Friday night/Saturday morning?-- I think that would have been my thinking, yes.

You also said the practice we have been adopting was not to transition until we hit 68.5?-- That's right, yes.

So the practice was not for the flood engineer managing the event to make a decision in advance of the - a decision to transition to a higher strategy in advance of the water reaching the level, but to allow the water to reach the level where you get an automatic transition?-- Correct.

That practice had been employed in previous flood events, had it?-- Yes, that's true.

The ones we've mentioned?-- Yes.

You said also that - I'm sorry. You said also in answering some other questions that during that shift you had recognised that when the transition occurred, that is, when the water level got to 68.5, W2 would be inapplicable?-- Correct.

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<sup>61</sup> T5396 /46-56.

<sup>62</sup> T5442/5-T5443/10.

89. Further, there was this exchange.<sup>63</sup>

You said also that when the water level crosses to 68.5, our emphasis shifts to protecting urban inundation?-- Correct.

That was your thinking during the January flood event?-- That's right, yes.

And had been for some time?-- Yes.

...

It's one of the fundamentals of managing-----?-- And given the - it is. And given it was sharply in focus because of there was a lot of publicity about it during the October event as well, so it was sort of always there in the forefront and there were probably even - because there hadn't been flows for a long time, there was a lot of sensitivity around about urban flooding, yes

90. See also T6084/55-T6085/12.

91. In the result, Mr Ruffini's evidence is that:

- (a) he has an actual recollection of thinking at the time that, when the lake level crossed 68.5, there would be an automatic transition to a higher strategy and that the prime consideration would become protecting against urban inundation; and
- (b) based on his gate operations spreadsheet (which is a good record of his thinking at the time) he believes he was thinking at the time that, when the lake level crossed 68.5, W2 would be inapplicable.

92. It was obvious to Mr Ruffini that they were not dealing with a W2 situation.<sup>64</sup>

Towards the end of your shift Wivenhoe is releasing about 890 CUMECs?-- Correct.

The downstream flows naturally occurring at Lowood and Mogill are well below that, aren't they?-- That's correct.

And you had that information available to you?-- Yes, I did.

In your operational-----?-- Spreadsheet.

-----spreadsheet?-- Mmm.

Which you were working on during your shift?-- Yes.

A simple comparison of the figures would tell you that W2 would be unavailable?-- That's correct.

Wouldn't it have just been obvious to you?-- I believe it would have been, yes.

You didn't have to do any complicated calculation or working out?-- No. No.

93. Finally, Mr Ruffini gave evidence as to the handover to Mr Ayre at the end of his shift.<sup>65</sup>

In relation to what you actually recall, the positive recollection, do you positively recollect speaking to him about the Wivenhoe Dam level?-- Yes, definitely about the dam level and I

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<sup>63</sup> T5445/42-T5446/5.

<sup>64</sup> T5443/17-39.

<sup>65</sup> T5431/51-T5433/5.

have a recollection and we would have - definitely would have gone through the spreadsheet, yes.

The situation report we are looking at, do you have a recollection, a positive recollection, that you went through the situation report itself?-- Yes. Yes, for sure.

Quite apart from your positive recollection, what was your practice at a changeover?-- I do it every time. There's not a time I wouldn't do that.

Are you aware of Mr Ayre's background?-- Yes, I am.

What level of experience would you say, to your knowledge, he has in relation to managing dams?-- Rob has a vast professional experience in managing dams and both he and myself were intimately involved in a massive - in a large comprehensive study in the early nineties which effectively set the - set these rules. We did all the modelling to establish the rules and established the risk profiles as part of a large modelling exercise.

When did that occur?-- That occurred in the early nineties. It was a three year study - three, four year study.

In that sense is it necessary - well, I won't ask that

question. Can we go to the dam operation manual then, please. Exhibit 21. Can I ask you to go to page 27, please. Before we look at the document, strategy W2, is this a fair assessment: that it's a strategy which deals with a situation where there is significant downstream flows in the Bremer and the Lockyer?-- Yes.

Where the lake level's over 68.5 and below 74?-- That's correct, yes.

What W2 is essentially about is tapering your releases from the dam so that they don't exceed what is the predicted natural peak at Lowood and at Moggill?-- That's correct.

If one has a predicted natural peak of a thousand CUMECS at Lowood and Moggill and the release is 500, you can taper the release with the real release which is going on contemporaneously but not to exceed that thousand CUMEC level; is that correct?-- That's correct, yep.

There was reference - I think the Commissioner asked you this - that a W2 situation wasn't in play here, was it?-- That's correct, yes.

Not when you were ending your shift at least?-- That's right, yes.

I think you have identified that there was an issue about the draining the dam, the seven day period, but the predicted peak, natural peak at Lowood, was about 530 CUMECS?-- That's correct. It was around that mark. That's correct at that stage, yes.

At that stage eight to 900 CUMECS was already being released from the Wivenhoe Dam?-- Correct.

So in that respect W2 simply wasn't an option at that stage, was it, because you couldn't achieve W2 because of the releases from the dam?-- That's right, yes.

94. The suggestion that Mr Ruffini did not appreciate that when the lake level crossed 68.5:

- (a) there would be a transition from W1 to a higher strategy;
- (b) W2 would be inapplicable; and
- (c) W3 would apply,

cannot be sustained.

95. It is obvious from the data in his gate operations spreadsheet and model run that this was the position. It is inherently probable that he appreciated the significance of the data he was actively using at the time.
96. He is an experienced flood engineer whose sole function at this time was to conduct flood operations.
97. He knew the significance of the lake level reaching 68.5, and of the relationship between releases from the dam and the peak flows at Lowood and Moggill. He knew it from the manual and from previous experience. Such “figures were in [his] head”.<sup>66</sup>
98. He was actively monitoring lake levels and making manual entries into his gate operations spreadsheet. At 7.00am, he manually entered a lake level of 68.48. And the electronically calculated lake level showed that it would exceed 68.5 that morning. There is no foundation for rejecting Mr Ruffini’s evidence and finding that he did not appreciate the significance of this.
99. Further, he was actively planning release strategies (as reflected in his gate operations spreadsheet and model run) which were plainly an application of W3, and not W2. Again, there is no foundation for rejecting Mr Ruffini’s evidence and finding that he did not appreciate the significance of what he was doing.
100. His situation report is consistent with his having appreciated the position. It is not to the point that it does not expressly mention that a transition to W3 would soon occur, or even that it might be regarded by some as equally consistent with the continued application of W1. If the situation report is equivocal, it cannot properly be used to draw an adverse inference (to the effect that Mr Ruffini was contemplating the continued application of W1), especially where the weight of the other evidence tells against the drawing of such an adverse inference.
101. A final matter which suggests that Mr Ruffini must have been thinking about W3 and not W2 is the nature of the event at that stage. On the evidence:
- (a) W2 events are those where the rainfall is predominately downstream of the dam, where the flows from the Lockyer and Bremer will dominate;
  - (b) W3 events are those where the rainfall is predominantly upstream of the dam, where the flows from dam will dominate.

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<sup>66</sup> T5441/50-56.

102. Mr Ruffini understood this. It is inherently probable that Mr Ruffini recognised that W2 was simply not in play at the end of his shift, and that they were looking at a W3 situation. As Mr Shannon said, that was “entirely predictable”:<sup>67</sup>

Is it fair to say W2 you would see as a situation that applies where the main flood event is happening downstream of the dam-----?-- Yes.

-----where the major rainfall is downstream and the major flows are coming from Lockyer and Bremer into Brisbane River-----?-- That's right.

-----and therefore you regulate your releases from Wivenhoe at rates which are below the naturally-occurring peaks downstream?-- Yes.

W2 isn't something that's applicable where the main rainfall event is in the Wivenhoe catchment?-- Exactly.

You agree with that?-- Yes. I think I said something along those lines, would only be applicable when - where the rainfall is predominantly below Wivenhoe - below the upper Brisbane, as it's referred to.

So you could understand a flood engineer's thinking that if you've got a substantial flood event, you know, you were over your 68.5, if the main rainfall is in the Wivenhoe catchment, then a flood engineer just naturally thinks of W3 and doesn't have regard to W2?-- Oh, well, the manual dictates that he must, sort of thing, but, as I say in the report, it is entirely predictable on average that W2 won't be relevant. So it's not that he wouldn't be mindful of W2 but it is predictable that W2 won't be relevant in the circumstances, there will be a direct move from W1 to W3.

103. In the result, the Commission should find that, when Mr Ruffini left his shift at 7am on the morning of Saturday, 8 January 2011, he fully expected that the transition to W3 would occur in the very near future.

*Sunday, 9 January 2011, prior to 7pm*

104. Mr Ruffini's next involvement came on Sunday, 9 January 2011.<sup>68</sup>
105. He had received Mr Malone's email of 11.02am that day.<sup>69</sup>
106. That email<sup>70</sup> stated that the forecast for the next few days is for heavy rainfall and that:

Based on the approximate runoff conversion rates and the forecast rainfall, estimated runoff volumes (ML) generated could be in the order of:

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<sup>67</sup> T5839/13-46.

<sup>68</sup> There has been no suggestion that Mr Ruffini's state of mind is affected by Mr Ayre's situation report of 5.53am on Saturday, 8 January 2011. He was not on shift at all between 7am Saturday and 7pm Sunday. And by the time of Mr Ruffini's next involvement on Sunday afternoon (at the 3.30pm engineers' conference), Mr Ayre's situation report had been superseded by, inter alia, Mr Tibaldi's later situation report (10) and by Mr Malone's email of 11.02am on Sunday. The situation report issued immediately prior Mr Ruffini commencing his shift on Sunday evening was situation report 11 sent by Mr Malone at 5.51pm. There has been no suggestion that Mr Ruffini did, or had occasion to, absorb the contents of Mr Ayre's situation report from the previous evening.

<sup>69</sup> T5447/8-13.

<sup>70</sup> Drury, RD5-200-201.

Catchment	Monday	Tuesday	Wednesday	Three Day Total
North Pine	10,000-20,000	35,000-55,000	25,000-35,000	70,000-110,000
Somerset	50,000-100,000	200,000-300,000	75,000-150,000	325,000-550,000
Wivenhoe	125,000-250,000	250,000-500,00 (sic)	125,000-250,000	500,000-1,000,000

The lower limit of the inflow to Somerset and Wivenhoe will be similar to the October 2010 flood while the upper limit is similar to the February 1999 floods. However, the starting level of the dams is much higher than in these historical events.

This points to continued flood operations for Somerset and Wivenhoe until at least the weekend of 15/16 Jan and maybe a shorter time for North Pine.

107. It was foreshadowing possible inflows to the dam of up to 1,000,000 ML, which was in excess of the flood storage capacity of the dam between 67m AHD and 74m AHD (910 ML<sup>71</sup>). This, together with the comparisons with the October 2010 and February 1999 floods,<sup>72</sup> suggest that this was being recognised as a significant flood.
108. Next, Mr Ruffini participated in the conference between the four flood engineers at 3.30pm on Sunday, 9 January 2011.
109. Although Mr Ruffini could not recall the precise details of what was said during the conference, he accepted that the “general thrust of [the log entry in respect of the meeting] was probably okay”.<sup>73</sup> Given his lack of recollection, he had difficulty explaining what might have been meant by the sentence in the log which reads:
- At this stage operating at the top end of W1 and the bottom end of W2.
110. This entry in the flood event log is addressed below.
111. Otherwise, Mr Ruffini’s evidence in respect of the conference was:<sup>74</sup>

... when you enter that meeting at 3.30, did you know what was the then level of Wivenhoe Dam?-- At that point in the meeting? Because I was coming - I wasn't on duty, I was coming in there, probably - I'm not sure whether I refreshed myself with the details or not when I got in there or whether they were mentioned, so, you know, I probably wasn't current when I first walked in there if that's what you're saying.

During the meeting did you become aware of what was the level?-- During the meeting? I would have thought that it would have been mentioned during the meeting, yeah, but I can't recall.

The reference you just saw to 300,000 megalitres, that of itself would tell you the level was over 68.5, wouldn't it?-- Yes, it would.

<sup>71</sup> Ex 21, pages 52-53.

<sup>72</sup> The October 2010 flood had a flood volume of in excess of 623,000 ML and was categorised as having an annual exceedance probability of less than 1 in 50. The peak outflow from the dam was 1,490m<sup>3</sup>/s (see Ex. 1146 pp1 and 46). The February 1999 flood had a flood volume of in excess of 1,200,000 ML. The peak outflow from the dam was 1,787m<sup>3</sup>/s (see Ex. 400 p11).

<sup>73</sup> T5402/19-35.

<sup>74</sup> T5438/2-T5439-36.



Because you think of 67 to 68.5 as temporary storage of about 190,000 megalitres?-- That's correct.

So you are well above that?-- Yes.

So in your mind that would trigger a recognition that you're well above W1?-- I would expect so, yes.

Did you have an understanding during the meeting of what strategy was in use in managing the dam at that time?-- My understanding at that point was that we were focussing on the urban inundation. The urban inundation objectives were in play.

Do you have a recollection that that was your understanding during the meeting?-- Yes.

...

Do you have a recollection of what was your understanding during the meeting as to what strategy was being followed at that time in the management of Wivenhoe?-- I believe it was W3, yes. We were managing for the downstream movement objectives, yeah.

You can actually recall that being your understanding at the time?-- Right now, today, twelve months on, do I have an exact recollection, you know, ... I couldn't say definitively ... if I look at this information and I look at this thing, then yes, I can sort of say I can, you know - I recall, like, the first time I looked at this in general I believe this stuff's right, in terms of that context, but I - do I definitively say, you know, I can think W3? In my mind at the moment, no, but, like, if I look at that and I look at the information around it, then I would say yes.

So that's, you indicate, the dam's been managing in accordance with W3?-- Yes.

Can I suggest that's for a couple of reasons. One, the reference that 300,000 megalitres of the dam flood storage has already been used up?-- That's correct, yes.

A second is it discusses the risk of flooding in lower Brisbane?-- Correct.

Suggesting that a major consideration is risk of urban inundation?-- Mmm.

The third is the - do you see the second last sentence commencing, "If required, releases from Wivenhoe Dam will be reduced to contain the flood in Brisbane at 1,600 CUMECS and 3,000 CUMECS in lower Brisbane ." Now, the Commissioner said to you why isn't that consistent with W1? Doesn't that sentence indicate that the strategy is to constrain releases from the dam so as not to produce a greater flow in Brisbane than 3,000 CUMECS?-- That's correct.

In other words, it's constraining the flow - releases from the dam by reference to the impact on the urban area?-- That's correct, yes.

If one was operating in W1, your primary consideration is the effect on rural?-- That's right, yes.

Downstream of the dam, not impact on urban areas at all?-- That's right, yes.

Doesn't that suggest to you that that's a clear reference to a primary consideration of avoiding urban inundation?-- Yes, it does.

112. Later, his evidence was:<sup>75</sup>

What was the situation you were facing at 3.30 on the Sunday afternoon? Is that what you would regard as a flood engineer as a small flood?-- It wasn't a small flood. It was building, and we had forecasts for more rainfall, so we knew we were on a building flood still.

You've got, I think, roughly 900,000 megalitres of floor storage capacity within Wivenhoe?-- Correct.

A third of that had been used up?-- Correct.

So you've only got two-thirds to play with if the situation gets worse?-- That's right, yes.

Is that what you regard as just a small flood?-- No. As I said, that's a - we've got a significant flood on.

It's the situation, isn't it, where your primary consideration is what's going to be the urban impact of this current flood event?-- That's correct, yes.

Was that the thrust of the meeting on the Sunday afternoon?-- Yes, that's what we were saying.

And you have an actual recollection that was the primary consideration discussed in the meeting; the urban impact of this flood event?-- That's why - in essence, that's because that situation was developing and happening. That's why the meeting was, you know - the intent of the meeting. As I said, I can't recall direct exact words and things like that, but yeah, that's a good representation of the need for the meeting.

113. Mr Ruffini's evidence was thus to the effect:

- (a) The flood engineers were recognising that they were dealing with a significant flood event.
- (b) Their primary consideration was the urban impact of the flood event.
- (c) The need for the meeting lay in these two factors; there was a significant flood event that required consideration of urban impacts.
- (d) The thrust of the meeting was their primary consideration of urban impacts.
- (e) Although he cannot now recall, he believes he understood at the time that they were operating under strategy W3.

114. The particular considerations identified in the flood event log which corroborate Mr Ruffini's evidence are:

- (a) The reference to storing 300,000 ML at present. The evidence<sup>76</sup> is to the effect that the flood engineers think about the dam in terms of storage compartments, with the 170,000 ML between 67 and 68.5 being regarded as W1 storage and the 740,000 ML between 68.5 and 74.00 being regarded as W2/W3 storage. The fact that the engineers were giving specific attention to how much storage was being used, and were mentioning figures which showed that the W1 compartment of 170,000 ML had been exceeded, suggests that they were conscious that they had moved beyond W1.
- (b) The reference to "the risk of flooding in the Lower Brisbane" suggests that they were giving specific attention to protecting urban areas from inundation. Within W1, and within the early stages of W2 or W3, urban areas can be protected absolutely. That is,

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<sup>76</sup> T5378 - 5379; T5435 - 5436

by using the available storage, the Lower Brisbane can be insulated completely from the risk of flooding. In that state of affairs, there is no occasion to mention the risk of flooding in the Lower Brisbane (even though consideration was obviously being given to protecting Brisbane from inundation, and that protection was being achieved). The fact that, during this meeting, they were referring expressly to the risk of flooding in the Lower Brisbane suggests that they were no longer able to insulate the Lower Brisbane from the risk of flooding. It shows that heightened attention was being given to the protection of urban areas from inundation.

- (c) The reference to containing the flow in the mid Brisbane River to 1600 cumecs and 3000 cumecs in the lower Brisbane again suggests that they were giving specific attention to protecting urban areas from inundation. There is a substantial body of evidence (discussed below) to the effect that the flood engineers were conscious that constraining flows in the mid Brisbane River to 1600 cumecs had the effect of minimising urban damage, as recent experience had shown that flows above this level started to cause flooding of low-lying areas and infrastructure in Brisbane.

115. These considerations are consistent with a belief on the part of Mr Ruffini that, at that time:

- (a) the primary consideration was protecting urban areas from inundation; and
- (b) they were operating under W3.

116. The reference in the flood event log should not lead to the conclusion that this was not Mr Ruffini's belief at the time. As to this:

- (a) The meaning of the entry is obscure.
- (b) However, one thing is clear. It cannot be taken to mean that they were **actually operating under W1 and W2** at that time. Every witness agreed that you cannot be operating under two strategies simultaneously. Thus the entry cannot be taken as a statement of the strategies that they were actually operating under at that time.
- (c) A more likely construction of the entry is that it is referring to **release rates**. The maximum release rate under W1 is 1900. According to model run 18 (conducted at 3.00pm on Sunday), the peak outflow from the dam was going to be 1,520.<sup>77</sup> But things were known to be escalating (that was why the conference was called in the first place). And, according to model run 19 (conducted at 4.00pm on Sunday), the

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<sup>77</sup> Ex 22, Appendix A1, page 2.

peak outflow from the dam was going to be 2,740.<sup>78</sup> In these circumstances, the entry makes sense if it is taken to refer to the release rates applicable to strategies W1 and W2. At 3.30pm, the peak releases from the dam were thought to be 1,520 and escalating. Those releases could properly be said to be at the top end of W1 and the bottom end of W2. This is the preferable construction of the entry. It is likely that the discussion at the conference was to this effect. And this is not inconsistent with Mr Ruffini's belief. Those rates of release are permissible under W3, and consistent with the dam being operated under W3.

117. In the result, the Commission should find that, on the afternoon of Sunday, 9 January 2011, Mr Ruffini honestly believed that, at that time:
- (a) the primary consideration was protecting urban areas from inundation; and
  - (b) they were operating under W3.

*Mr Ruffini's second shift*

118. Mr Ruffini came back on shift at about 7pm on Sunday, 9 January 2011. He was joined by Mr Ayre. And Mr Malone stayed on in the flood operations centre for 2 to 3 hours after his shift.
119. When Mr Ruffini commenced this shift, he was certain that his expectation from the previous day had been fulfilled and that the dam was now being operated under Strategy W3. The Commission should make a finding to this effect.
120. His evidence is:<sup>79</sup>

Sunday at 7 p.m. Do you want to take a moment and refresh yourself what was the situation, the lake level, inflows----Sunday, 7 p.m.?

Yes, please?-- I'll just read the situation reports. Yes.

Tell us what was the situation then?-- The situation then was that the lake - we're in W3. The lake level at Wivenhoe is at 68.7 and it's rising. We've had fair bit - we've got 5000 coming down the Brisbane River. The dam is rising reasonably quickly.

...

You said a moment ago when you came on duty you understood it was W3 that was in use?-- Sorry?

You said a moment ago - you referred to W3?-- Yes. What was your understanding as to what strategy was being used for managing the dam when you came on duty?-- With these sort of inflows and the lake level where it is, we're managing - at that stage we were managing for the

<sup>78</sup> Ex 22, Appendix A1, page 2.

<sup>79</sup> T5446/28-46; T5447/19-T5448/40.

urban impacts. In other words, you're trying to use as much as we can of the flood storage, but - and release as much water to get that drain done within seven days.

Do you have an actual recollection that was your thinking during that shift?-- It is, because that's what I did in the spreadsheets. You can sort of have a look at those, and you can see that that's - they are the things we were playing with about trying to get rid of the flood storage, but also balance off this issue that we had, that we had a saturated catchment downstream, so we didn't want to - you know, we wanted move in a pretty structured way not to have this chance with this rain that's coming down to trigger unnecessary flooding.

Did you have an appreciation when you began that shift that this was not a small flood event; this is a quite substantial flood event?-- Yes. This was getting big. The flood at this point was getting big. I had had that experience in the '99 flood, so it's - at this stage it's not as big as the '99, but certainly I knew we - in '99 we had the benefit of the dam being somewhat drawn down at the start of the event, so we knew we were in - we knew we were in a really significant event at this point in time.

Was your prior primary consideration at the start of this shift protecting against interruption to rural life just downstream of the dam?-- No.

Or was it protecting against urban inundation?--Urban.

Quite clear about that?-- Yes.

And you swear that's true?-- Yes.

Thank you. Did you have an appreciation as to - you said before W3. Did you have an appreciation that at that time the releases from Wivenhoe made the W2 strategy inappropriate?-- Yes, I believe I would have.

Based upon what?-- Based upon the fact that if they weren't, we should have been shutting down at that stage and reducing them, and we weren't doing that.

If W2 was in use, you would have to constrain the flows out of Wivenhoe?-- That's right.

To be below the naturally occurring peaks at Lowood and Mogill, wouldn't you?-- You would, yes.

No attention was given to that, was it, during your shift?-- No.

There had been no discussion of that in the 3.30 p.m. engineers' conference?-- No.

It just wasn't in play, was it?-- There was no discussion about - there was no discussion about that, no.

It just wasn't in play, was it?-- No.

It was obviously a W3 event, wasn't it?-- Yes.

One of the complaints made is that on a handover, no one tells the incoming flood engineer, "This is a W3 event." Now, I think you've said, or other witnesses have said, that's not normally discussed at a handover. Would it be fair to say that to an experienced flood engineer, the situation was just obvious?-- Yeah. At this stage it's very obvious what we're doing. We're managing for that downstream impact, and the focus and concentration then is on balancing off - balancing off those risks.

Flood engineers don't just sit around talking about things that are obvious to them. They talk about vital information such as release rates, inflows to the dam, lake levels, and forecast rainfall?-- That's correct.

121. Further, Mr Ruffini's response to the suggestion that the transition to W3 did not occur until part way through his shift on the Sunday night was as follows:<sup>80</sup>

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<sup>80</sup>

T5449/11-27.

It was put to you that essentially that was the strategy that was adopted halfway through the shift and----?-- No, that's incorrect.

----as I took down your answer, you said, "We had been doing minimising impact of urban flooding for quite some time"?-- That's right, yes.

For how long?-- For that shift, it was on for the whole shift, yes. But we'd been doing it since we transitioned into W3.

On your understanding at that time, when had that occurred?-- That occurred on the Saturday morning. When the water level crossed 68.5?-- 68.5.

122. It was suggested to Mr Ruffini that there was some significance in the following language that appears in situation reports 12, 13, and 14:

The objective for dam operations will be to minimise the impact of urban flowing in areas downstream of the dam and, at this stage, releases will be kept below 3,500m<sup>3</sup>/s and the combined flows in the lower Brisbane will be limited to 4,000m<sup>3</sup>/s ...

123. The suggestion seemed to be that (given the tense of the expression "will be") this conveyed that, when this was written, the objective for dam operations had not yet been to protect urban areas from inundation. The suggestion cannot be sustained. As to this:

- (a) There is an important distinction between absolute protection and minimisation.
- (b) In the lower stages of W3, absolute protection can be given to urban areas. There will be no damage at all, and no question of minimisation arises. The absence of references to minimisation in the lower stages of W3 is thus perfectly understandable. The absence of such references does not imply that the objective is not protection of urban areas from inundation. It is simply a reflection of the fact that the pursuit of the objective of protecting urban areas from inundation has been successful; the protection provided has, at this stage, been absolute.
- (c) However, when the event escalates to the point where absolute protection can no longer be provided, attention must be directed to how impacts in urban areas can be minimised. That is, when we have reached the higher stages of W3, some impacts have become inevitable, and the question then becomes one of minimising those impacts.
- (d) The entries in these situation reports simply confirm that the event had escalated and the higher stages of W3 had been reached.

**Mr Ayre**

124. Mr Ayre was on shift from:
- (a) 7am to 7pm on Saturday, 8 January 2011; and
  - (b) 7pm on Sunday, 9 January 2011 to 7am on Monday, 10 January 2011.
125. His first shift is the critical one for present purposes.
126. Seqwater does not submit that Mr Ayre made a conscious selection of strategy W3 at 8am on Saturday, 8 January 2011. (For the reasons already given, Seqwater contends that, upon its proper construction, the manual did not require the flood engineer to make a conscious selection between strategies W2 and W3 at that time.)
127. Rather, Seqwater submits that the evidence supports findings to the effect that, from 8am on Saturday, 8 January 2011 until the conclusion of his shift that day, Mr Ayre was:
- (a) conscious of the conditions he was in;
  - (b) conscious that, in those conditions, he was required to give primary consideration to protecting urban areas from inundation;
  - (c) consciously giving primary consideration to protecting urban areas from inundation;
  - (d) consciously applying strategy W3; and
  - (e) taking action which gave effect to the primary consideration of protecting urban areas from inundation.
128. In examining these matters, it is important to pay careful attention to what Mr Ayre actually did during his shift.
129. At the handover at the commencement of his shift, Mr Ayre and Mr Ruffini discussed Mr Ruffini's situation report and the gate operations spreadsheet. Mr Ruffini gave evidence that he has an actual recollection of this, and that it was his invariable practice.<sup>81</sup>
130. Thus, at the commencement of his shift, Mr Ruffini shared his approach and thinking with Mr Ayre. From this, Mr Ayre would have known at once that:

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<sup>81</sup> T5431/51-T5432/10.

- (a) The lake level was about to cross 68.5.
- (b) The release pattern in the gate operations spreadsheet involved maintaining releases throughout that day that were higher than the naturally occurring peaks at Lowood and Mogill.
131. It may also safely be concluded that Mr Ayre looked at the results of model run 9 which Mr Ruffini had conducted. The matters referred to in the preceding paragraph would have been obvious to Mr Ayre from this model run also.
132. By about 8am, Mr Ayre must have seen that the lake level had reached 68.5. Faxes were generally received hourly from the dam with the manual gauge board readings.
133. All of this supports Mr Ayre's sworn evidence<sup>82</sup> that, on Saturday 8<sup>th</sup>, he had an actual recollection of noticing that the lake level reached 68.5, that under the manual a transition to a higher strategy was now required because of the 68.5m level, and that he thereafter managed the dam with protecting urban areas from inundation as his primary consideration.
134. Having been acquainted with the conditions, at 8.15am, Mr Ayre issued Wivenhoe Directive 4, which required gates 1 and 5 to be opened by half a metre and gates 2 and 4 to be opened by a metre (in 2 increments of half a metre).<sup>83</sup> The directive recorded that:
- At the completion of these gate operations the dam will be releasing 1,247m<sup>3</sup>/s.
135. This was a deliberate continuation of a pattern of releases from the dam that exceeded the known peak flows at Lowood and Moggill.
136. Viewed objectively, this was consistent with W3, inconsistent with W2, and neutral as regards W1. No attempt was being made to reduce the releases so as to bring them back within the constraints of W2. And rural protection did not call for an *increase* in releases at this time.
137. The expert opinion of Mr. Roads<sup>84</sup> and Mr. Shannon<sup>85</sup> was that this increase in releases was appropriate to a shift to urban protection as the prime consideration, and was neutral as regards minimising disruption to downstream rural life.

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<sup>82</sup> T5266/55 - T5267/15. NB - in the question at T5267/6 the words "a natural" are a mistake. The words should be "an actual".

<sup>83</sup> Ex 24, Appendix L, page 5.

<sup>84</sup> T5802/10 - 20 and T5802/45 - 50

<sup>85</sup> T5844/8 - 32



138. From Ex 524, Attachment 34, it is evident that at 9.00am, Mr Ayre created spreadsheet “SDWD-201101080900” (the time of creation being evident from the last four numbers of the code).
139. This was the spreadsheet that Mr Ayre was evidently working from during his shift. Yet he was never shown it during his questioning. The criticism being levelled at Mr Ayre is quite unfair when one considers that he was not shown this important document. It was a document he was actively working with at the time. Had Mr Ayre been shown the document, it would no doubt have assisted him to refresh his memory.
140. An examination of the “gate operations” tab in the document reveals that:
- (a) Mr Ayre made a manual entry in the “Rec Gauge Boards” column for “0800” on Saturday, 8 January 2011 that the lake level was then 68.52.
  - (b) Mr Ayre then made a series of manual entries in the “Rec Gauge Boards” column hour by hour as follows:

<b>Date/Time</b>	...	<b>Rec Gauge Boards</b>
Sat 08/01/11 0900	...	68.55
Sat 08/01/11 1000	...	68.56
Sat 08/01/11 1100	...	68.59
Sat 08/01/11 1200	...	68.60
Sat 08/01/11 1300	...	68.61
Sat 08/01/11 1400	...	68.61
Sat 08/01/11 1500	...	68.63

- (c) The current releases from Wivenhoe as at 0800 were 940 cumecs.
- (d) According to the planned gate operations, releases would be increased to 1300 cumecs by 2300 on Saturday, 8 January 2011, and would later peak at 1472 cumecs at 0100 on Monday, 10 January 2011.
- (e) According to the planned gate operations, the lake level:

- (i) would peak at 68.643 at 2000 on Saturday, 8 January 2011;
  - (ii) would be drained back below 67m by 0800 on Sunday, 16 January 2011.
141. Further, when Mr Ayre conducted model run 10 at 2pm on Saturday, 8 January 2011, the spreadsheet was saved as “run 10”. The particular spreadsheet within “run 10” to which attention must be directed is “SDWD\_run10\_nr.xls”. Within that spreadsheet, the “summary” tab is of particular importance. It shows the peak flows at Lowood and Moggill (without Wivenhoe) very clearly as being 528 and 771 cumecs respectively.
142. All of this suggests that at all times during his shift, Mr Ayre was acutely aware of:
- (a) the lake levels;
  - (b) the releases being made from Wivenhoe; and
  - (c) the peak flows at Lowood and Moggill.
143. In these circumstances, any suggestion that Mr Ayre did not know precisely what conditions he was in during the course of his shift that day cannot be sustained.
144. That Mr Ayre was paying careful attention to the manual, to lake levels, and to the regulation of release rates is also evident from the directive he gave in respect of Somerset Dam at 11.30am.<sup>86</sup> That directive stated:
- Somerset dam is expected to peak at around mid-day at about EL100.48. As we have exceeded EL100.45m (fixed crest level), but Wivenhoe Dam is still rising we will need to implement strategy S2.
- This strategy is aimed at maximising the benefits of the mitigation storage in both Somerset and Wivenhoe dams. Consequently we will endeavour to follow the target line as defined in the manual.
- Please open Sluice M to 100% at 1200
145. Counsel assisting have submitted that “all indications are that the engineers were just getting on with the management of the dam, without reference to the manual”.<sup>87</sup> That is not true, as this directive demonstrates.
146. Mr Ayre was in fact adopting a sophisticated approach to the management of the dams – an approach which was enshrined in the manual (at pages 39-41) after the findings of the

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<sup>86</sup> Ex 24, Appendix L, page 66.

<sup>87</sup> Paragraph 467 of their submissions.

“Somerset-Wivenhoe Interaction Study” dated October 2009.<sup>88</sup> That study had been undertaken by Mr Malone and Mr Tibaldi, and Mr Tibaldi had written revision 7 of the manual in light of it. On the case being advanced by counsel assisting, Mr Tibaldi, Mr Malone and the others were ignoring a manual which embodied the results of months of hard work which they had undertaken personally. This is improbable in the extreme.

147. The adoption of strategy S2 is of significance. That strategy is adopted when lake levels are getting higher, and its express intent is to “maximise the benefits of the flood storage capabilities of the dam while protecting the structural safety of both dams” and to minimise “flows in the Brisbane River downstream of the Wivenhoe dam”. This suggests that it is concerned with significant flood events which are dominated by rainfall upstream of Wivenhoe. The evidence suggested that such events are recognised as W3, rather than W2, events.
148. Mr Ayre swore that he was seeking to utilise the maximum storage benefits of both dams in order to provide protection against the risk of urban inundation.<sup>89</sup> This was supported by the evidence of Mr Shannon.<sup>90</sup>
149. The flood event log records:
- (a) a call from Mr Morris to the flood operations centre on 8 January 2011 at 11.30am “asking about combined flows down the Brisbane River”; and
  - (b) that Mr Morris was “advised that at this stage flows would not exceed 1500m<sup>3</sup>/s”.
150. Then there is the situation report issued by Mr Ayre at 12pm, which recorded:
- ... it is intended to increase the release from Wivenhoe to 1250m<sup>3</sup>/s by 14.00 ... This will maintain flows of up to 1600m<sup>3</sup>/s in mid Brisbane River throughout the afternoon
151. Mr Ayre gave evidence that, from information gleaned during the October and December floods, a flow of 1600m<sup>3</sup>/s in the mid Brisbane River was a level at which interference started to be caused (e.g. to low lying areas such as bikeways, paths, carparking, interruption to ferry services, etc).<sup>91</sup>
152. This was confirmed by the evidence of Mr Morris from the BCC.<sup>92</sup>

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<sup>88</sup> That study is in evidence as “JT-1” to Mr Tibaldi’s second statement sworn on 1 April 2011.

<sup>89</sup> T6119/50 - T6120/43

<sup>90</sup> T5845/35 - T5847/10

<sup>91</sup> T6118 - 9

<sup>92</sup> T2166/17-55.

... when we talk of flow rates in Brisbane, what are the sources of that water that we're concerned with? The water that's coming from either the Bremer River, the Lockyer River, or across Wivenhoe.

...

But if we talk of those combined flow rates, can you tell the Commissioners, please, at about what level do you start getting flows in Brisbane that cause difficulties?-- And we only learned about it the year before last, so on a very low level, at 1,000 CUMECS we've found that that starts picking up debris and having it floating down the river and causing an interruption to our ferry services. So, right down at 1,000 CUMECS, as long there hasn't been a flush beforehand, then debris starts floating down the river and causing the Council to stop running its ferry services which disrupts a whole range of people trying to get to or from work.

All right. Then beyond 1,000 CUMECS combined flow, what's the next level of interruption or dislocation to Brisbane?—The next level is generally below the City gauge. It's to do with flows that are sitting on top of the high tide. So, if there's no big tide, there's not going to be much consequences, but we're talking about 1,500 CUMECS and upwards where, on top of the high tide, it starts affecting properties and roads and parked cars, so we get places like Victoria Street and Sandgate Road that gets cut with salt water, and people have left their cars in those locations during the day to go to work, to come back to find that their car had been inundated with salt water. Some businesses can't open their doors because the water is stopping them from getting into their offices.

All right. At about what range are we talking? 1,500 to----?-- Yeah, 1,500 it starts. It gets worse as it goes up.

All right. Thank you. And then after those - are they relatively isolated incidents?-- They are isolated pockets along the lower part of the river.

All right. Then after - what is the sort of next jump from those isolated pockets?-- The next jump is the 3,500 or thereabouts. That's where we start getting inundation into properties and start affecting people's homes and, as it goes up, it starts to get about floor level. So, once we get to 4,000, we are above floor level in certain houses.

153. Mr Morris confirmed in his statement that such information was passed on to Seqwater at a technical meeting on 22 October 2010.<sup>93</sup>
154. The evidence of Mr Ablitt was also to the effect that it was known that damage would occur at these levels.<sup>94</sup>
155. Mr Ayre gave evidence that pitching releases at a level which would produce flows not greater than 1600m<sup>3</sup>/s in the mid-Brisbane River was designed to balance not causing urban inconvenience with maximising the flood storage capacity of Wivenhoe (and Somerset) so that, if the flood event worsened, the dams would have maximum ability to avoid releases which would cause urban inundation.<sup>95</sup>

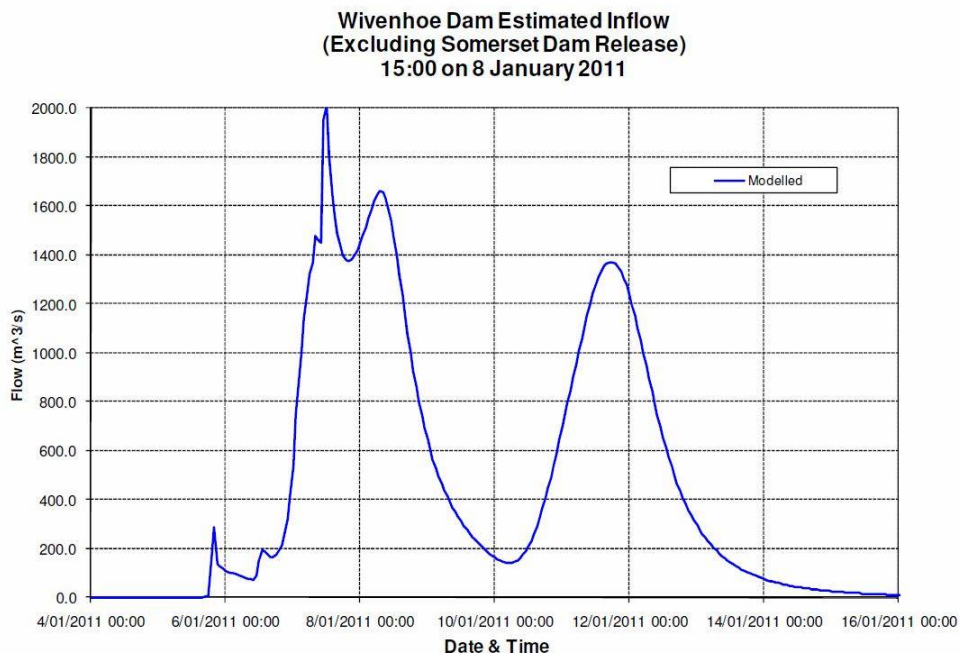
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<sup>93</sup> Statement of Mr Morris, paragraphs 33-36. See also KJM-3 at page 10 of 15.

<sup>94</sup> T5317

<sup>95</sup> T5268 - 5270

156. At 2pm, Mr Ayre conducted model run 10. This showed that:
- (a) the lake level was 68.56;
  - (b) the predicted peak outflow from the dam was 1480 cumecs; and
  - (c) the peak flows at Lowood and Mogill were still only 530 and 770 respectively.
157. Between 2pm and 3pm, Mr Ayre was working on another, quite different, model run.
158. It is the model run that appears in Ex 24, Appendix K at pages 217-224. As appears from page 217, it was produced at “1500” on the 8<sup>th</sup>.
159. It is based on forecasts described as “SILO-Forecast Rain”. These are not the 24 hour QPFs that form the basis of the model runs in Ex 22. Rather, they are a 3 to 5 day forecast based on the BOM’s ACCESS Model.<sup>96</sup>
160. Thus, this was not a model to be used for making actual releases from the dam that day. Rather, it was looking into the future to see what *might* occur over the next 3 to 5 days.
161. The results of that model included the hydrograph shown at page 224:



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Ex 24, pages 55-56.

162. The hydrograph:
- (a) Shows inflows to Wivenhoe falling dramatically from late on the 8<sup>th</sup> or early on the 9<sup>th</sup>.
  - (b) Thus suggests the possibility that the lake level (which at that point was just over 68.5) would drop below 68.5 (if releases were maintained so that they exceeded the dramatically diminishing inflows).
  - (c) Shows a further significant rainfall event occurring from the 11<sup>th</sup> and perhaps into the 12<sup>th</sup>.
  - (d) Thus suggests the possibility that the lake level would rise again (so that, from a base of below 68.5, it again exceeded 68.5).
163. This is what was plainly in Mr Ayre's mind when he came to write his situation report at 5.53pm that afternoon.
164. There are a number of important observations to make about the passage in that situation report upon which counsel assisting place so much reliance:
- (a) **First**, it does not appear in the part of the situation report that concerns how the dam is actually being operated at that time.
  - (b) **Secondly**, it plainly concerned with future possibilities only, as is evident from the heading "**Forecast Scenario – Based upon mid-range rainfall forecasts**".
  - (c) **Thirdly**, the heading makes it plain that it is addressing the situation that might unfold having regard to the predictions of the 3pm "SILO-Forecast Rain" model run.
  - (d) **Fourthly**, that Mr Ayre is not addressing himself to the model results based on the 24 hour QPFs, but rather was addressing a more distant outlook, is confirmed by an examination of the results of model run 10 conducted at 2pm that day (in ex. 22). Model run 10 shows flows in the Bremer which are dramatically less than the 1200 cumecs referred to in Mr Ayre's situation report.
  - (e) **Fifthly**, Mr Ayre's explanation in evidence in this round of hearings sits comfortably with what is shown in the 3pm model run. On the inflows shown in the hydrograph, one can see easily how the lake level might drop below 68.5 (dropping you back into W1), and then rise above 68.5 again with the significant new inflows (taking you into

W2, having regard to the flow of 1200 cumecs identified from the Bremer catchment).

(f) **Sixthly**, it is significant that the most contemporaneous of documents (the 3pm model run) supports Mr Ayre's explanation.

(g) **Seventhly**, the discrepancies in Mr Ayre's evidence on this question must, at least in part, be attributable to the manner in which his evidence was elicited. When he was questioned last year, he was not taken to his contemporaneous model run. He evidently had not refreshed his memory by reference to it. Had he done so, he might then have been in a position to give the perfectly plausible explanation which he is now able to give for passage he included in his situation report.

165. In the result, this situation report does not provide a sound foundation for a finding that Mr Ayre (or any of the other flood engineers) thought that they were still in W1 at 5.53pm on the 8<sup>th</sup>.

166. The remainder of Mr Ayre's Saturday shift was uneventful. Inflows to the dam had been receding since 3pm.<sup>97</sup> And by the end of the shift at 7pm, the lake level had stabilised at 68.65.<sup>98</sup>

167. Mr Ayre was also involved in the engineer's conference at 3.30pm on the 9<sup>th</sup>. That topic has been addressed in the previous section of these submissions concerning Mr Ruffini. As was said there, the preferable construction of the obscure entry in the flood event log in respect of the conference is that it is referring to **release rates**, and does not bear upon the strategy under which the flood engineers were actually operating at the time.

168. Finally, Mr Ayre joined Mr Ruffini from 7pm on the 9<sup>th</sup>. This was the first double shift of the flood event. The substance of what happened during that shift has been addressed in the previous section of these submissions concerning Mr Ruffini. The only additional point to be made is that the commencement of double shifts at this time reflects the seriousness with which the event was being treated. By this time, it was plainly escalating into the higher stages of W3.

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<sup>97</sup> Ex 24, page 156.

<sup>98</sup> Ex 24, page 156.

**Mr Tibaldi**

169. Mr Tibaldi had been called back from holidays to fulfil his duties in the flood operations centre.
170. His first shift commenced at 7pm on the 8<sup>th</sup> and finished at 7am on the 9<sup>th</sup>. It was an uneventful shift.
171. The lake level had stabilised at 68.65 by the time his shift commenced.<sup>99</sup>
172. Inflows were falling.<sup>100</sup>
173. By midnight, the lake level had started to fall.<sup>101</sup>
174. As reflected in his situation report issued at 6.15 am on the 9<sup>th</sup>,<sup>102</sup> little rain had fallen and Mr Tibaldi had merely continued the gate operations strategy of maintaining flows of around 1600 cumecs in the mid Brisbane River.
175. Mr Tibaldi's evidence as to his state of mind during this shift is:<sup>103</sup>
- In terms of what strategy we were in, whether - I couldn't say if it was in the forefront of my mind or not if I put my mind to it. I could easily see that we weren't in strategy W1 because it was over 68.5, and I could easily see we weren't in strategy W2, if I had checked, because of the fact that we were just releasing too much water. As I said, whether that was in my mind at that time, I couldn't say.
176. This redounds to Mr Tibaldi's credit. He did not pretend he could recall what was in his mind at the time. But he said that, if he had turned his mind to the question at the time, he could have answered the question easily.
177. In effect he was allowing the possibility that he might have been in the position described by Professor Apelt:<sup>104</sup>
- ... if I was a flood engineer and somebody said, "Where are you at?" and you're at 68.55, I'd say, "Oh, well, that really is W3." In other words, I may not have consciously formulated that view or that - that thing but if I was asked that would be immediately their response, yes.
178. Of course, Professor Apelt's opinion was that this state of affairs was in accordance with the manual.

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<sup>99</sup> Ex 24, page 156.

<sup>100</sup> Ex 24, page 156.

<sup>101</sup> Ex 24, page 156.

<sup>102</sup> Ex 24, Appendix E, pages 17-18.

<sup>103</sup> T5052/7-18.

<sup>104</sup> T5749/6-T5750/58.



179. Finally, it remains to observe that each of the experts expressed the opinion that, upon an analysis of the decisions as to releases made over, inter alia, this shift by reference to the information available to the engineers, the decisions as to releases complied with operating the dam under W3.<sup>105</sup>

### **Mr Malone**

180. Mr Malone's shift commenced at 7am on the 9<sup>th</sup>.

181. Reference has already been made to his email of 11.02am that day.<sup>106</sup> This was a significant development. It was the catalyst for the engineers' conference later that day. We shall not repeat what we have already said about those matters.

182. By 4pm on Sunday the 9<sup>th</sup>, Mr Malone had decided upon a pattern of releases which would exceed 2,000m<sup>3</sup>/s (i.e. above the maximum level in W1). This can be seen from ex.22 (model run 19) and is confirmed by the 9pm situation report.

183. Mr. Malone gave evidence that throughout his shift on Sunday the 9<sup>th</sup> from 7am he appreciated that the lake level was above 68.5m, that the manual dictated the use of a higher strategy and that his primary consideration throughout his shift was protecting urban areas from inundation. Mr. Malone said that the language used in the situation report he issued at 9pm ("... the objective for dam operations will be to minimise the impact of urban flooding ... etc"), was not a change of approach, but reflected the approach he had taken throughout his shift commencing at 7am.<sup>107</sup>

184. Like Mr Tibaldi, Mr Malone did not pretend to remember whether he consciously gave thought to being in W3 during that shift. But all of his actions accord with his having operated under W3. This was the unanimous view of the experts.

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<sup>105</sup> Professor Apelt T5735/1 - 10 and T5736/10 - 20; Mr. Roads T5799/15 - 40 and T5799/55 - T5800/3; Mr. Shannon T5847/30, T5848/10

<sup>106</sup> Drury, RD5-200-201.

<sup>107</sup> T5335/20 - 25, T5367/35 - 50

## Documents and communications relied upon against the flood engineers

*Situation Report sent at 5.53pm on Saturday, 8 January 2011*

185. This situation report has been addressed above.
186. The passage upon which counsel assisting rely should not be taken as evidence that Mr Ayre (or any of the other flood engineers) thought they were still in W1 at 5.53pm on Saturday the 8<sup>th</sup>.
187. To recap:
- (a) **First**, the contentious passage does not appear in the part of the situation report that concerns how the dam is actually being operated at that time.
  - (b) **Secondly**, it plainly concerned with future possibilities only, as is evident from the heading “*Forecast Scenario – Based upon mid-range rainfall forecasts*”.
  - (c) **Thirdly**, the heading makes it plain that it is addressing the situation that might unfold having regard to the predictions of the 3pm “SILO-Forecast Rain” model run.
  - (d) **Fourthly**, that Mr Ayre is not addressing himself to the model results based on the 24 hour QPFs, but rather was addressing a more distant outlook, is confirmed by an examination of the results of model run 10 conducted at 2pm that day (in ex. 22). Model run 10 shows flows in the Bremer which are dramatically less than the 1200 cumecs referred to in Mr Ayre’s situation report.
  - (e) **Fifthly**, Mr Ayre’s explanation in evidence in this round of hearings sits comfortably with what is shown in the 3pm model run. On the inflows shown in the hydrograph, one can see easily how the lake level might drop below 68.5 (dropping you back into W1), and then rise above 68.5 again with the significant new inflows (taking you into W2, having regard to the flow of 1200 cumecs identified from the Bremer catchment).
  - (f) **Sixthly**, it is significant that the most contemporaneous of documents (the 3pm model run) supports Mr Ayre’s explanation.
  - (g) **Seventhly**, the discrepancies in Mr Ayre’s evidence on this question must, at least in part, be attributable to the manner in which his evidence was elicited. When he was questioned last year, he was not taken to his contemporaneous model run. He evidently had not refreshed his memory by reference to it. Had he done so, he might

then have been in a position to give the perfectly plausible explanation which he is now able to give for passage he included in his situation report.

188. Further, not all of the engineers have been shown to have knowledge of the document. Mr Ruffini and Mr Malone were a long way from being on shift when it was sent. By the time they came back on, it had been superseded by more recent reports. They had no occasion to study the document. And there is no evidence that they did so. Thus, even if there were something sinister in the document (which there is not), it has not been established that Mr Ruffini and Mr Malone were aware of its contents.

*Entry in flood event log for 3.30pm on Sunday, 9 January 2011*

189. This entry has been addressed above.
190. It should not be taken as evidence that any of the other flood engineers thought they were operating under W1 or W2 at 3.30pm on Sunday the 9<sup>th</sup>.
191. To recap:
- (a) The meaning of the entry is obscure.
  - (b) However, one thing is clear. It cannot be taken to mean that they were **actually operating under W1 and W2** at that time. Every witness agreed that you cannot be operating under two strategies simultaneously. Thus the entry cannot be taken as a statement of the strategies that they were actually operating under at that time.
  - (c) A more likely construction of the entry is that it is referring to **release rates**. The maximum release rate under W1 is 1900. According to model run 18 (conducted at 3.00pm on Sunday), the peak outflow from the dam was going to be 1,520.<sup>108</sup> But things were known to be escalating (that was why the conference was called in the first place). And, according to model run 19 (conducted at 4.00pm on Sunday), the peak outflow from the dam was going to be 2,740.<sup>109</sup> In these circumstances, the entry makes sense if it is taken to refer to the release rates applicable to strategies W1 and W2. At 3.30pm, the peak releases from the dam were thought to be 1,520 and escalating. Those releases could properly be said to be at the top end of W1 and the bottom end of W2. This is the preferable construction of the entry. It is likely that the discussion at the conference was to this effect. And this is not inconsistent with

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<sup>108</sup> Ex 22, Appendix A1, page 2.

<sup>109</sup> Ex 22, Appendix A1, page 2.

Mr Ruffini's belief. Those rates of release are permissible under W3, and consistent with the dam being operated under W3.

192. Further, it is important to appreciate that the balance of the log entry suggests that the flood engineers recognised that they were dealing with a significant flood event which required the application of W3. As has already been observed, the following aspects are important:

- (a) The reference to storing 300,000 ML at present. The evidence<sup>110</sup> is to the effect that the flood engineers think about the dam in terms of storage compartments, with the 170,000 ML between 67 and 68.5 being regarded as W1 storage and the 740,000 ML between 68.5 and 74.00 being regarded as W2/W3 storage. The fact that the engineers were giving specific attention to how much storage was being used, and were mentioning figures which showed that the W1 compartment of 170,000 ML had been exceeded, suggests that they were conscious that they had moved beyond W1.
- (b) The reference to "the risk of flooding in the Lower Brisbane" suggests that they were giving specific attention to protecting urban areas from inundation. Within W1, and within the early stages of W2 or W3, urban areas can be protected absolutely. That is, by using the available storage, the Lower Brisbane can be insulated completely from the risk of flooding. In that state of affairs, there is no occasion to mention the risk of flooding in the Lower Brisbane (even though consideration was obviously being given to protecting Brisbane from inundation, and that protection was being achieved). The fact that, during this meeting, they were referring expressly to the risk of flooding in the Lower Brisbane suggests that they were no longer able to insulate the Lower Brisbane from the risk of flooding. It shows that heightened attention was being given to the protection of urban areas from inundation.
- (c) The reference to containing the flow in the mid Brisbane River to 1600 cumecs and 3000 cumecs in the lower Brisbane again suggests that they were giving specific attention to protecting urban areas from inundation. There is a substantial body of evidence to the effect that the flood engineers were conscious that constraining flows in the mid Brisbane River to 1600 cumecs had the effect of minimising urban damage, as recent experience had shown that flows above this level started to cause flooding of low-lying areas and infrastructure in Brisbane.

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<sup>110</sup> T5378 - 5379; T5435 - 5436

*Documents produced in the period 15-17 January 2011*

193. We are concerned here with:
- (a) The document Mr Malone produced at some stage between 11.30am and 1.02pm on 15 January 2011 whilst he was on duty in the flood operations centre conducting flood operations.
  - (b) The strategy summary log which appears to have been created on the afternoon of 15 January 2011.
  - (c) The ministerial briefing note, the salient part of which (the “Event Decision Making” table) was written by Mr Tibaldi at some stage between 6.34pm<sup>111</sup> and 9.10pm<sup>112</sup> on 15 January 2011.
194. Before addressing each of these documents in turn, it is necessary to say something about the context in which they were being prepared.
195. The flood operations centre was still operational. The flood event was still being managed. The flood engineers had had what could only be described as a traumatic week. They had been working under extreme pressure. They had had little sleep. They were exhausted. Mr Tibaldi in particular was obviously having difficulty coming to terms with the decision he had had to make (together with Mr Malone) on the Tuesday morning to invoke W4 for the first time in the history of the dam. All of this was occurring in the shadows of the tragedy of the Toowoomba and Grantham flooding.
196. In these circumstances, quite unreasonable demands were being placed on the engineers over that weekend. They were being asked to do things which were extraneous to their core function of conducting flood operations during a flood event which was still ongoing at that time.
197. Mr Tibaldi was asked to parade at a media conference. He said he simply could not do it.<sup>113</sup>
198. They were being asked to prepare a briefing for the Minister within the space of a single day, over a weekend, between 12 hour shifts.

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<sup>111</sup> Ex 1095 shows that it was not in the draft as at 6.34pm.

<sup>112</sup> Ex 1053 includes the first draft to contain the table. The table did not change in later drafts.

<sup>113</sup> T5064/37-43; T5067/10-20.

199. Mr Ruffini's observations about this were accurate:<sup>114</sup>

Quite frankly, you know, during the event people are asking us to produce stuff and do that when you have still got full dams and things like that, just put a real lot of undue pressure on the team to do things that you knew there were going to be bloody errors in. So, you know, this craziness about that - which is why, you know, in my statement I said, "Look, for God sakes in future let's have some proforma staff. Let's have you know, briefings so people" - you know, before that. So they have training, they understand what we put in it so that we don't have this crazy situation where you get people who have been flogged for over two months are asked at short notice to do stuff when you know there is going to be bloody mistakes in it.

200. This is made all the more nettlesome when one considers the Minister's evidence that the document was not actually used as the basis for the making of any decision.<sup>115</sup>

201. Against this background, attention will be directed to the documents.

202. As to Mr Malone's document:

- (a) As we have already intimated, it was prepared within the space of an hour and half whilst Mr Malone was on active duty.
- (b) Leaving aside typos, it records accurately the events in which Mr Malone was personally involved, and otherwise sets out Mr Malone's understanding as to what occurred at times when he was not personally involved.
- (c) It records accurately the mobilisation of the flood operations centre at 8am on the 6<sup>th</sup>. Mr Malone was personally involved at this time.
- (d) It records Mr Malone's understanding that the transition out of W1 occurred at 8am on the 8<sup>th</sup> (the reference to the 6<sup>th</sup> is plainly a typo). Although Mr Malone was not personally involved at this time, his understanding was correct.
- (e) It records Mr Malone's understanding that between 8am and 6pm on the 8<sup>th</sup>, W2 was applicable. Mr Malone was not personally involved at this time. His understanding was incorrect. Contrary to the submissions of counsel assisting, there is nothing sinister in this. Mr Malone could not be expected to know on the spot precisely what the conditions were on the previous Saturday when he was not there. He would have had to go back and look that up. But his attention was on conducting flood operations at that time. He was the sole flood engineer on duty at the end of a week during which they were managing the biggest flood in the history of the dam. It is perfectly understandable that he would not have distracted himself from his duties by trawling

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<sup>114</sup> T5412/50-T5413/6.

<sup>115</sup> T5788.

back through the data from the week before. Accordingly, he made what was his best educated guess at the time. Further, on Mr Malone's understanding, this reflected the fact that they were giving primary consideration to protecting urban areas from inundation during this period.

- (f) It records Mr Malone's understanding that W3 applied from 6pm on the 8<sup>th</sup> to approximately 9am on the 11<sup>th</sup>. Mr Malone's understanding was correct in the sense that W3 did apply during this period. It is just that W3 also applied during the period prior to 6pm on the 8<sup>th</sup>. Moreover, Mr Malone was personally involved in the shift from 7am to 7pm on the 9<sup>th</sup>, and his document records correctly that W3 was applicable at that time.
- (g) It records that the transition to W4 occurred at "approximately 9am" on the 11<sup>th</sup>. Allowing for the approximation, this was correct. And, of course, Mr Malone was personally involved in this transition.
- (h) Thus, overall, the document is consistent with the flood event report insofar as it concerns events in which Mr Malone was personally involved. The W2 question related to a period in which he was not involved. To him, that was a matter for others to resolve. And for the reasons developed in Part V below there was nothing inappropriate, much less dishonest, about the methodology that was used to resolve it.
- (i) The document is not capable of founding a finding of dishonesty on the part of Mr Malone or anyone else. It does not demonstrate that the flood event report was false, or that Mr Malone or the other engineers knew it to be false.

203. As to the strategy summary log:

- (a) The evidence does not permit of a clear conclusion as to who created this document. It may have been Mr Drury or Mr Navruk. Mr Ayre may have had some involvement.
- (b) However, some things about the document are clear.
- (c) *First*, it contains obvious errors which a flood engineer could not have made. The reference to Strategy W4B is significant here. The flood engineers well knew that the fuse plugs were not in play and that this strategy was not engaged. This suggests strongly that the document was not the work of a flood engineer. At the very least, it suggests that it did not represent a considered attempt by a flood engineer to assign

strategy labels. This is reinforced by the obvious haste with which the document was prepared. The frequent spelling errors attest to this.

- (d) **Secondly**, it was plainly not used by Mr Tibaldi. Although he accepts that he received it, and may even have looked at it, it bears no resemblance to the briefing note he was preparing. The obvious inference here is that, if Mr Tibaldi did look at the document, he recognised that it contained errors and would be of little use to him. Accordingly, he discarded it.
- (e) **Thirdly**, once he had discarded the document on the evening of the 15<sup>th</sup>, Mr Tibaldi would obviously have no further use for it. The suggestion that he should have gone back to it when he was preparing the flood event report cannot be sustained. He had no reason to return to a document he had already discarded as being of little use to him.
- (f) **Fourthly**, there must be a real prospect that the document had the effect of confusing Mr Tibaldi. That is, there must be a real prospect that Mr Tibaldi looked at the document, could not make sense of it, did not have time to work through the difficulties himself, and so chose to use the indefinite language that appears in the briefing note.
- (g) **Finally**, there is no evidence that Mr Malone was aware of the contents of this document.

204. As to the ministerial briefing note:

- (a) As we have just have observed, there must be a real prospect that, when he came to draw the table in the briefing note, Mr Tibaldi had been confused by what he saw in the strategy summary document.
- (b) That would explain the odd language used in the table.
- (c) The form is that, by a particular time, “it was apparent” that the event had “progressed to” W2 and then W3.
- (d) This is not a statement as to when the progression had actually occurred.
- (e) Rather, it is a statement as to when the progression had become “apparent” to someone.



- (f) On this language, the progression may actually have occurred much earlier than the time at which it became “apparent” to the observer.
- (g) Moreover, this language is inconsistent with the notion that the progression was happening by conscious decision of the flood engineer.
- (h) Instead it is consistent with Mr Tibaldi’s view of how the manual works. That is, the “progression” happens by force of the manual, and the flood engineer is an observer to whom the progression becomes apparent.
- (i) In the end, it is a very difficult document to understand.
- (j) No doubt it represented the best Mr Tibaldi could do in the extremely difficult situation he had quite unfairly been placed in.
- (k) However, it does not provide a foundation for a finding of dishonesty on the part of Mr Tibaldi or anyone else. It does not demonstrate that the flood event report was false, or that Mr Tibaldi or the other engineers knew it to be false.

*Documents sent and received by Mr Drury*

205. Mr Drury’s email to Mr Spiller asserted mistakenly that the dam was being operated under strategy W2 on the morning of Monday, 10 January 2011. The mistake was Mr Drury’s alone. There is no foundation for a finding that Mr Drury’s statement was made after he had checked the position with one of the flood engineers.

*Teleconference involving Mr Borrows and Mr Drury at 8.30am on Monday, 10 January 2011*

206. There is no foundation for a finding that Mr Borrows or Mr Drury mentioned W2 or W3 during this meeting. As to this:
- (a) No witness actually recalls precisely what was said during this conversation.
  - (b) No contemporaneous document records Mr Borrows or Mr Drury mentioning W2 or W3.
  - (c) Mr Hutchison’s note (which was not circulated to Mr Borrows or Mr Drury) mentions W2 and W3 in a dot point which is referable to what Mr Dennien was saying.
  - (d) Mr Dennien himself said he was speaking in terms of release rates, not strategy labels such as W2 or W3.

(e) Mr Borrows was the one doing the talking for Seqwater, and the message he was delivering was, in essence, the same as that which he delivered for the benefit of the Councils during the taped teleconference at 12.30pm late that day. And we know from the transcript of that teleconference that Mr Borrows was not using the language of W2 and W3.

207. Thus, there is no foundation for a finding that Mr Borrows or Mr Drury mentioned these labels at all, much less that they were mentioning them after checking with the flood engineers.

208. In the result, the only inference that might be drawn is that Mr Dennien mentioned W2 and W3 in the context of a discussion about release rates, perhaps suggesting that 3,500-4,000 equated to W2 and 4,000 and above equated to W3.

*Mr Cooper's report*

209. Mr Borrows's email saying "ok" to the question about the Cooper report is innocuous. There is no foundation for a finding that Mr Borrows had studied the document and was giving a considered endorsement of Cooper's attribution of strategy labels. His response was given within a matter of minutes. He was not a technical officer intimately acquainted with the W strategies. In a general sense he would have been looking to see whether Cooper was endorsing the actions of the flood engineers, which he was. In these circumstances, Mr Borrows's quick "ok" is perfectly understandable. There is no foundation for a finding that he studied the attribution of strategy labels at all, much less checked with the flood engineers, before sending his response.

210. Further, the suggestion that the flood engineers should have immediately gone into print to correct Cooper's incorrect attribution is untenable. Nobody asked them to critique the report. They quite properly focused upon the substantial task of preparing the flood report, which would lay out the facts. The demands upon their time were very substantial. They had enough on their plates in the form of the duties they were required to perform. The suggestion that they should have volunteered at this time to perform a critique which no-one had asked them to perform is untenable.

211. Finally, it is necessary to deal with the suggestion (in paragraphs 194 and 195 of the submissions of counsel assisting) that the information Mr Allen provided to Cooper by email at 10.57am on 12 January came from "one or more of the flood engineers". The text of Mr Allen's email tells against the inference counsel assisting are grasping for. Mr Allen said "it *would have been* in W2"; he did not say it *was in* W2. This is the language of supposition. It

is not a statement of fact. Thus, on the text of the email, Mr Allen was conveying a supposition as to what the situation *would have* been. The obvious inference is that the supposition was his own. There is no foundation for a finding that Mr Allen checked with any of the flood engineers before sending his email to Cooper.

*Conversation between Mr Ayre and Mr Tibaldi about W2 having been by-passed*

212. Counsel assisting make much of Mr Ayre's evidence as to a conversation he had with Mr Tibaldi during the preparation of the flood report regarding the by-passing of W2. The conversation is innocuous. As to this:
- (a) On Mr Tibaldi's interpretation of Manual, he did not have to inquire as to what Mr Ayre's subjective thoughts were at 8am on Saturday.
  - (b) Mr Tibaldi was not interrogating Mr Ayre about that.
  - (c) Instead, he was just making an aside; to him it was interesting.
  - (d) Mr Ayre's response did not arouse any suspicion in Mr Tibaldi; to Mr Tibaldi, Mr Ayre's subjective thoughts were irrelevant.
  - (e) In any event, Mr Ayre's response simply confirmed what Mr Tibaldi considered to be true.

## V COLLUSION

### Introduction

213. Mr Tibaldi's methodology is the foundation stone of the allegation of collusion.
214. Seqwater contends that the following primary findings should be made in respect of Mr Tibaldi's methodology:
- (a) He took as his starting point the objectively verifiable data.
  - (b) He used the data to produce as complete a draft as he could.
  - (c) The other three engineers were given access to the draft.
  - (d) The other three engineers were given a sufficient opportunity to assess the draft and make any changes they considered necessary or appropriate.

- (e) Each of the other three engineers confirmed to Mr Tibaldi that (save for some corrections which are irrelevant for present purposes) the draft accorded with his recollection and belief.
215. The Commission should then conclude that, upon the other flood engineers giving their confirmation, it was no longer true to say that the document did not record the actual recollections of the flood engineers. Each of them had confirmed that it did. Thus, at this point, the document could no longer be characterised properly as a “reconstruction” which did not record actual recollection.
216. Despite all this, counsel assisting maintain that the report is the product of collusion.
217. The allegation of collusion is that there was a secret agreement for the fraudulent purpose of deceiving, inter alia, the Commission. It is an allegation of conspiracy to deceive.
218. As Chesterman J observed in *Emanuel Management Pty Ltd v Foster's Brewing Group Ltd* (2003) 178 FLR 1 at [1044]:
- The ordinary meaning of collusion is:
1. Secret agreement for a fraudulent purpose; conspiracy.
  2. An arrangement between persons apparently in conflict ... to do some act in order to injure a third person or deceive the court
- according to the Macquarie Dictionary which accords with my own understanding of the term.
219. In a context where it is alleged that the collusion is directed to deceiving a court (or a Commission of Inquiry), it must be shown that those acting in concert “*did not honestly believe*” the proposition presented to the court (or Commission): *Emanuel* (2003) 178 FLR 1 at [1048].
220. In *Emanuel* (2003) 178 FLR 1 at [1048], Chesterman J added that, in the context of such an allegation of collusion, it is as well to recall Lord Simon’s remarks in *The Amphill Peerage* [1977] AC 547 at 591 about the court being deceived by a case known to be false. Lord Simon had said:
- To impeach a judgment on the ground of fraud it must be proved that the court was deceived into giving the impugned judgment by means of a false case known to be false or not believed to be true or made recklessly without any knowledge on the subject. No doubt, suppression of the truth may sometimes amount to a suggestion of the false ... but short of this, lack of frankness or an ulterior or oblique or indirect motive is insufficient.
221. Accordingly, the issue is not whether Mr Tibaldi’s methodology was the best, or even an appropriate, methodology. Rather, the issue is whether the methodology was designed by Mr

Tibaldi dishonestly (with the concurrence of the other flood engineers) in order to deceive the Commission.

222. The collusion case cannot be sustained unless it has been established that:
- (a) the methodology was designed by Mr Tibaldi dishonestly (with the concurrence of the other flood engineers) in order to deceive the Commission; and
  - (b) each of the four flood engineers did not honestly believe that:
    - (i) Mr Tibaldi's methodology was designed to produce an accurate account of what in fact occurred; and
    - (ii) the flood event report was an accurate account of what in fact occurred.
223. As to these matters, Seqwater contends that the following findings should be made:
- (a) Irrespective of the Commission's own views as to the merits of Mr Tibaldi's methodology, that methodology was not designed by Mr Tibaldi dishonestly (with the concurrence of the other flood engineers) in order to deceive the Commission (or anyone else).
  - (b) The four flood engineers honestly believed that Mr Tibaldi's methodology was designed to produce an accurate account of what in fact occurred.
  - (c) The four flood engineers honestly believed that the flood event report was an accurate account of what in fact occurred.
  - (d) The four flood engineers did not collude to produce a false account of the strategies used in the flood event.

#### **Mr Tibaldi's role and methodology**

224. Mr Tibaldi assumed primary responsibility for the preparation of most of the report. Mr Ayre and Mr Malone assumed responsibility for the preparation of some particular sections. Mr Malone also undertook the task of validating data. Mr Tibaldi and Mr Malone, as Seqwater employees, were devoted to the task full time. Mr Ayre, a Sunwater employee with other responsibilities, devoted less time to the task. Mr Ruffini, a DERM employee, had other responsibilities which were such that he could not participate in the initial drafting.

225. The task of writing a report that covered the whole period of the event was a very substantial undertaking. There was a strict 6 week timeframe for the production of the report.<sup>116</sup> No extensions would be given. On 20 January 2011, whilst the flood operations centre was still operational,<sup>117</sup> the Minister wrote to Seqwater stating:<sup>118</sup>

I note that under the Flood Mitigation Manual for Wivenhoe and Somerset Dams, Seqwater is required to prepare a report on the recent flood event (see clauses 2.9 and 7.4 of the Manual). It is essential that a report (covering the requirements of both clauses 2.9 and 7.4 of the Manual) to the Department of Environment and Resource Management (DERM) is completed within the required timeframe of six weeks from the date of the incident. However in view of the fact that we remain in the middle of the wet season and further significant inflows are possible, I would urge you to complete this review, which should include consideration of the appropriate Full Supply Levels, as a matter of priority and urgency.

226. It took Mr Tibaldi a period of some weeks to produce something approaching a complete draft. He worked continuously on the report from 24 January 2011 until the task was complete.

227. Mr Tibaldi is an engineer accustomed to analysing objectively verifiable data. To him, such data are indisputable facts. They represent the most contemporaneous and accurate record of what in fact occurred. They can be checked for accuracy at any time. They are not vulnerable to the lapses and distortions of human memory, especially when one is concerned with events that were occurring during a crisis, when activity was frenetic, stress and emotion were high, and the engineers were exhausted and lacking sleep.

228. To Mr Tibaldi, the objectively verifiable data represented the most reliable starting point from which to prepare an account of what actually occurred. There was nothing corrupt in Mr Tibaldi's decision to start with the data. He honestly believed that this was the most reliable approach.

229. He explained the position this way:<sup>119</sup>

I think you have got to start with the facts, you have got to start with what you definitely know. That's my view.

It didn't strike you that they might definitely know which strategies they were in at given times?-- Well, how do you remember - how do you remember the event? How do you remember 14 days? Particularly - you know, I am not overdramatising what occurred, but it was - it was an emotional time and lack of sleep, it just was. And then, you know, even straight after the event you're trying to remember back what's occurred over a 14-day period. You're only there for snapshots of that. How do you remember that?

<sup>116</sup> Set by the Manual, Ex 21, cl. 2.9 and 7.4.

<sup>117</sup> Releases were still being made from North Pine Dam: see, e.g., Ex 23, second last page.

<sup>118</sup> Ex 393, "PB-13".

<sup>119</sup> T5076/45-T5077/12.

So you didn't think they would be able to?-- Look, I just didn't give it much thought. The process to me - the best process to me was to go through the facts, go through the data and write a story. You know, write a story as to what had occurred and that was the flood event summary and that started off under a number of different names, but containing all the facts, and then put it to them and see, well, is that what occurred, and that gave them something to test themselves against, too, because it had all the numbers in as well. It had all the, you know, detail, plus we had all the model runs. That was the process I used. I agree with you, though, that there's other processes that could be used but that was the one I selected.

230. Mr Tibaldi's reference to being present only for "snapshots" of the event reflects another compelling practical reason for the adoption of his approach. He was not present in the flood operations centre at all times. In fact, he was present for only about 96 hours of the total event time of 324 hours, and for only 24 hours of the 120 hour period from event commencement to the time that strategy W4 was applied.<sup>120</sup> Thus, whilst he could attest to what he personally did and observed when he was on shift, he could not attest to what the others did and observed when he was not there. In these circumstances, Mr Tibaldi could have started with the data, or he could have thrown the task back on the other engineers by having them write an account of what occurred during the periods when he was not there. He chose the former. The latter was not an option, unless Mr Tibaldi was going to disavow the task of being the primary author of the report.
231. It was suggested to Mr Tibaldi that it was a simple matter of him checking with the other flood engineers as to what their recollections were. The suggestion seemed to be that he should have done this from time to time as issues occurred to him during the course of drafting the report, and that his failure to do so leads inevitably to the conclusion that his methodology was corrupt.
232. The suggestion overlooks the complexity of writing what was in effect an hour by hour account of what occurred over the course of an event that lasted 324 hours. That task necessarily required recourse to vast amounts of data so that the conditions prevailing at particular points in time could be understood and recorded. Mr Tibaldi honestly believed that it would not have been reliable or efficient for him to seek off the cuff recollections from the other flood engineers. They would necessarily have to refresh their memories by reference to the contemporaneous data before being in a position to give reliable answers.
233. Moreover, the suggestion overlooks the significance of the fact that, as Mr Tibaldi always intended, each of the other flood engineers was asked to examine Mr Tibaldi's draft, to say whether it accorded with his recollection and belief, and to make any corrections he considered necessary.

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<sup>120</sup> Ex 1036, para 16.

234. Each of the other three engineers considered Mr Tibaldi's draft and confirmed that (save for some corrections which are irrelevant for present purposes) it accorded with his recollection and belief. At this point, it was no longer true to say that the document did not record the actual recollections of the flood engineers. Each of them had confirmed that it did. Thus, at this point, the document could no longer be characterised properly as a "reconstruction" which did not record actual recollection.
235. Mr Tibaldi had no reason to doubt the truth of the confirmation that each of the other engineers had given him.
236. The data had given Mr Tibaldi a picture of what the others were doing and thinking at the time. Mr Tibaldi could see from the data what actions they had taken, and their actions indicated to Mr Tibaldi what they were thinking. In the context of Mr Ayre's thinking at 8am on Saturday, 8 January 2011, Mr Tibaldi described the salient actions as follows:<sup>121</sup>

The initial action was that he was releasing more than what's allowable under W2. If you look at previous flood events - and as I said, particularly the December 2010 flood event - you'll see that in some instances a cutback of flow is made at that point, which then forces you into W2 because you're keeping the flow in the Brisbane River less than a natural peak. So that's an action. Now, by not doing that - and given that he had done it two weeks earlier - by not doing that, straightaway you think he's got an awareness that he's moving into W3. Additionally, if you look at the directives, I think you'll see at 8.15 Mr Ayre's issued a number of gate operations directives to ramp up the flow rate in accordance with W3. That's in the flood log. I could point you to it if you wish to. Again if he had made the choice to go to W2, what it would say to me is those directives would have been to reduce flow. However, given that the release in the river - given the flow in the river was already bigger than natural peaks, really my conclusion was in writing it, you know, it was impossible to apply W2 at that stage. But I think the ramping up of the releases at 8.15 is significant. It certainly shows an understanding of where things are at. I think - you know, you looked at the event log. I can recall a model done around that time - I think it shows at 9 a.m. - again an understanding potentially from Mr Ayre, but I can't say what's in Mr Ayre's mind, that conditions are changing and he's going to run a model. What else? The other two - the situation report at - that was done at 7 o'clock clearly states that the lake level is just below 68.5 and rising steadily, so obviously to me that says an awareness of the level, an awareness that you're about to leave strategy W1. I guess those factors, combined with the undeniable factors associated with lake level and the flow rate from the dam, given that we'd completely violated what's allowable under W2 in terms of having a much bigger flow than is allowed, that was sufficient evidence to me to put in the draft report the words I did in terms of the transition from W1 to W3 at - I think I've said around 8 a.m.

237. The confirmation that Mr Tibaldi later received from the other engineers as to their subjective positions accorded with his own view based upon his analysis of what was conveyed by their objectively verifiable actions.

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<sup>121</sup> T5809/21-T5090/1.



## Confirmation of the other flood engineers

*Mr Ruffini*

238. Mr Ruffini was on shift from:

- (a) 7pm on Friday, 7 January 2011 to 7am on Saturday, 8 January 2011; and
- (b) 7pm on Sunday, 9 January 2011 to 7am on Monday, 10 January 2011.

239. Mr Ruffini's sworn evidence is that he confirmed to Mr Tibaldi that he believed Mr Tibaldi's draft of the flood event report to be accurate. In particular, his evidence is that:

- (a) Mr Tibaldi said:<sup>122</sup>

"Here's what I think it is." And he asked us to go away and see if we - if that I guess matched our recollection and whether we agreed with that or not.

- (b) The process Mr Ruffini went through then was:<sup>123</sup>

...we'd go into the flood room ... there was a computer with the draft document on there, and then we could - because to review it properly, you also needed all that other material that I spoke about. So you - effectively you really needed to be in the Flood Control Centre so you had access to all that relevant material. We - when I did it, I would open it up, I would look at those - look at what he had written, and then I would check - check in terms of all that relevant data to make sure the numbers and things were right, and then I would sort of - I'd go through the logic, have the manual there and say does that sort of - is that correct inasmuch as I could, remembering what I did, you know, what I was trying to remember, what I was thinking, and what I did at the time when that was - that was on. So that's what I did.

- (c) In respect of the strategies in particular, the process was:<sup>124</sup>

... firstly, I had my situation reports and see what did I write? What was I telling people at that time? You know, I'd look at the spreadsheet to say, you know, now, is what's been said here consistent with that? And then I would say what do I recall? What's my recollection of - what's my recollection of what I was doing at that particular point in time? So, you know, in the periods that - do I recall, and does that make sense, and would it make sense that - does it make sense? Does it gel with my - whatever I can recall at that time? And to my way of thinking, I agreed that that was - that did make sense and it was - it was consistent with, you know, at the time when I reviewed it what I was - what I could recall.

- (d) The confirmation came in the form of accepting Mr Tibaldi's draft after being invited to make any necessary edits:<sup>125</sup>

Well, he was just saying look, if you don't disagree - if you disagree with it, like, put edits on there. And it was also made very clear to us that we didn't have to sign the

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<sup>122</sup> T5414/26-28.

<sup>123</sup> T5418/40-58.

<sup>124</sup> T541923-35.

<sup>125</sup> T5419/38-44.

report, like, if we didn't agree with it, if we didn't - if we didn't think that it was an accurate reflection of - accurate reflection of the event.

- (e) In addition, when discussing the draft with Mr Tibaldi, Mr Ruffini said:<sup>126</sup>

That matches my recollection.

- (f) In summary:<sup>127</sup>

Talk about the flood report for a moment. You were asked some questions about your role in the preparation of the flood report, and I want to go

over that again. Part of your evidence, as I took it down, was that Mr Tibaldi wrote a number of the sections about what strategies were in use, and, when his draft was at a mature stage, provided it to you. You read it. You did some independent checking of it by reference to records in the Flood Operations Centre?-- That's right, yes.

And by reference to your own recollections? That's right, yes.

And you reported back to him that it matched your recollection and looked reasonable?-- Yes. That I was happy with what was there, yes.

*Mr Ayre*

240. Mr Ayre was on shift from:

- (a) 7am to 7pm on Saturday, 8 January 2011; and  
 (b) 7pm on Sunday, 9 January 2011 to 7am on Monday, 10 January 2011.

241. Mr Ayre's sworn evidence is also that he confirmed to Mr Tibaldi that he believed Mr Tibaldi's draft of the flood event report to be accurate. In particular:

- (a) In his sixth statement,<sup>128</sup> Mr Ayre described the review process in detail.  
 (b) He said in oral evidence that, having gone through that process, he agreed with what was in the final report.<sup>129</sup>

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<sup>126</sup> T5414/29-41.

<sup>127</sup> T5449/25-43.

<sup>128</sup> Ex 1048.

<sup>129</sup> T5209/2-5.

- (c) As to the process he had undertaken, he said:<sup>130</sup>

I did my own independent assessments of those strategies when I was on shift; so I was happy that that reflected what was occurring.

- (d) Later the following exchange occurred:<sup>131</sup>

But your clear recollection was that what you took about - when Mr Tibaldi raised this issue about W2, is that "Well, we all need to go away and check it based on our shift"?-- Yes.

And what you took from that is you needed to go and consider your own position in relation to the shifts that you did?-- Yes, that's right, yes, just review the information current, that was applicable to the times that I was on a shift.

And that included the shift which began at was it 7 o'clock on the 8th of January?-- Yes.

And concluded on the 7th - at 7 o'clock p.m. on the same date that evening?-- Yes, that's right.

Okay. And were you satisfied in respect of the way it had been articulated in the report in relation to W2 not having been engaged?-- Yes.

Did that effectively accord with what your recollection was?-- Yes.

And you didn't tell Mr Tibaldi later on that you disagreed with that?-- No.

242. See also T5075/25-60; T5084/5-41.

*Mr Malone*

243. Mr Malone was on shift from 7am to 7pm on Sunday, 9 January 2011.

244. The evidence supports a finding that Mr Malone confirmed to Mr Tibaldi that he believed Mr Tibaldi's draft of the flood event report to be accurate. In particular:

- (a) Mr Malone referred to the process of working closely with Mr Tibaldi and to reading through the parts Mr Tibaldi had drafted.<sup>132</sup>
- (b) He accepted that there was no impediment to him reporting any concern he had about the content of the report, and said in evidence that he was quite happy with the report.<sup>133</sup>
- (c) Mr Malone does not suggest that he raised any concern with Mr Tibaldi, and Mr Tibaldi does not believe he did so.<sup>134</sup>

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<sup>130</sup> T6105/17-20.

<sup>131</sup> T6115/31-T6116/16.

<sup>132</sup> T5326/11-57.

<sup>133</sup> T6094/20-30.

<sup>134</sup> T5075/25-60; T5084/5-41.

- (d) Thus, at the very least, Mr Malone's confirmation came in the form of accepting Mr Tibaldi's draft after being invited to make any comments he thought appropriate.

### **No collusion**

245. Mr Tibaldi gave evidence that his methodology was designed to give an accurate account of what actually occurred.<sup>135</sup>
246. Each of the other flood engineers gave evidence that he understood that Mr Tibaldi's methodology was designed to give an accurate account of what actually occurred.<sup>136</sup>
247. All four flood engineers gave evidence that they believe that the flood event report is an accurate record of what in fact occurred.<sup>137</sup>
248. There is no foundation in the evidence for a finding that they did not honestly hold these beliefs.
249. Mr Tibaldi:
- (a) Honestly believed that the objectively verifiable data represented the most reliable starting point.
- (b) Always intended that (as in fact occurred) the other three engineers would be given an opportunity to assess his draft and make any changes they considered necessary or appropriate.
- (c) Had no reason to doubt the truth of the confirmation that each of the other engineers had given to the effect that the draft accorded with his recollection and belief.
250. Further, the other engineers had no reason to be suspicious of Mr Tibaldi's methodology. As engineers, they too value the objective truth of the contemporaneous data. And they had ample opportunity to assess Mr Tibaldi's work for themselves and administer any corrections.
251. Elsewhere we have pointed to a number of factors which support the conclusion that the flood engineers were acting honestly. However, there are two that warrant particular mention here.

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<sup>135</sup> T5159/35-50.

<sup>136</sup> Tibaldi T5159/45-50; Malone T5309/31-52; T5369/1-30; Ruffini 5414-5415; Ayre T5209.

<sup>137</sup> Mr Ruffini's evidence is at T5413/19-T5414/41; Mr Ayre's evidence is at T5292/49-50; Mr Tibaldi's evidence is at T5134/49-51; Mr Malone's evidence is at T6094/20-26.

252. The first derives from their honestly held belief as to the interpretation of the manual. Their view as to the appropriateness of the methodology adopted<sup>138</sup> must be informed by their interpretation of the manual. As we have said, their interpretation is:
- (a) the manual dictated an automatic transition from strategy W1 to strategy W3 when the lake level exceeded 68.5 and the releases from the dam exceeded the naturally occurring peaks at Lowood and Moggill; and
  - (b) the role of the flood engineer in those circumstances was not to subjectively select a strategy, but rather to use the strategy mandated by the manual.
253. On this interpretation:
- (a) It was irrelevant to inquire whether a conscious selection of strategy was made by Mr Ayre at 8am on Saturday, 8 January 2011 (or by any of the other engineers throughout that weekend).
  - (b) The relevant factual inquiry was whether the *actions* of the engineers had in fact fulfilled the objectives of the applicable strategy.
  - (c) Mr Tibaldi's methodology, with its focus upon faithfully reporting the *actions* of the flood engineers as established by the objectively verifiable data, was entirely innocent.
254. The second derives from the evidence which suggests that, from the point of view of an engineer, there is nothing inappropriate, let alone dishonest, about using the objectively verifiable data to assign strategy labels after the event.
255. The evidence of Mr Shannon on this point was encapsulated in the following exchange:<sup>139</sup>
- Now, is it the case that - it's not the case, is it, that you go through a flood event and then you work back through the flood event to work out when the strategies were engaged?-- To put the terminologies of the formal strategies, that might be required because you mightn't be logging it according to the defined strategies. It might be the defined levels and the outflows. So when you put the report together, you would be cross-referencing the flood manual and putting the appropriate labels on it, yes.
- But each flood engineer who was operating the dam at any particular time during the flood event would know what strategy he was operating the dam under?-- He would know what the requirements were according to the circumstances at the time. Whether it would be in the front of his mind to put the label of the strategy on it, I wouldn't be too concerned.

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<sup>138</sup> And of the wording of the flood event report itself.

<sup>139</sup> T5824/55-T5825/21.

So you wouldn't be concerned if the report was prepared not on the flood engineer's recollection of their choices as to strategy, but based on a reconstruction of the events having regard to when the lake reached certain levels?-- I would expect them to know exactly when they needed to consider varying their operating strategy according to the lake levels, which is the primary requirement under the manual. You can look up to the heading of that requirement and it will say what strategy that falls under.

256. Mr Shannon was picking up a theme that ran through the evidence of the experts. To an engineer, what matters is whether the correct objectives were in fact being pursued at the appropriate time (which can be ascertained as a matter of substance by examining the flood engineers' actions), not whether the flood engineers subjectively or consciously appreciated at the time what "label" or "chapter heading" the salient objectives fell under.

257. The point was addressed by Professor Apelt a number of times in his evidence:

(a) First, he explained:<sup>140</sup>

... those statements of the strategies, which you've listed ... I see them as summaries of the whole of the section 8, which is about the management of the dams, and they - under each of those strategies they summarise the conditions under which certain actions will be taken, and I see, you know, when it's labelled "W1", "W2", or whatever, I see that as purely a label, kind of a chapter heading, and, so, yes, I was looking to see that they were doing the correct thing by the manual when the conditions - correct relative to the conditions that existed at the time.

(b) Then there was this exchange:<sup>141</sup>

Now, is it the case that you cannot say that there was compliance with the manual unless the SEQWater report is an accurate record of what the engineers were considering at the time?-- Are you talking about the body of the report?

Yes?-- I am not quite sure what you mean by considering. What I was concerned about was what are the conditions? What are they doing? Are these consistent for those conditions? Whether that is W1, W2, W3, whatever, that then is as I said part of a label. It is the substance of what they are doing that I was concerned with.

(c) On the topic of precisely what the flood engineer must be conscious of, the following exchange occurred:<sup>142</sup>

... I was reading it in the sense that what they were doing for the conditions that existed at the time, rather than what label they might be using for the strategy.

COMMISSIONER: So you don't think it is necessary to consciously decide what strategy you were in, or what is it that you are saying?-- I don't think it is necessary for you to advert explicitly to the fact that "This is W3". It is essential that you are conscious of the fact that the dam has passed a certain threshold. For that condition we must do certain things. So it is essential that they have a clear understanding of what is required for them to do. Whether they think, "This is W3", or whatever, is not for me the essence.

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<sup>140</sup> T5727/34-45.

<sup>141</sup> T5732/10-26.

<sup>142</sup> T5732/46-T5733/2.

- (d) Finally, he was asked how a flood engineer would know what strategy he or she was in at any particular point in time and the following exchange then ensued:<sup>143</sup>

Once they have moved into a situation where that defines the strategy, either consciously or subconsciously they would be aware that that's where they're operating. Now, they may not, you know, enunciate to themselves or anybody else, "Hey, we're in W3," I don't see that as necessary provided they recognise the conditions now that call for the actions that are detailed under W3, for example.

But you would accept, though, at the time, for example, say, 8 a.m. on the 8th, the flood engineer would have to accept that he was in W3?-- Yes. Yes. I mean, if someone was just - if I was a flood engineer and somebody said, "Where are you at?" and you're at 68.55, I'd say, "Oh, well, that really is W3." In other words, I may not have consciously formulated that view or that - that thing but if I was asked that would be immediately their response, yes.

So is what you're saying, if someone asked the flood engineer on the 8th after 8 a.m., "What strategy are you in?" an automatic reaction would be, "W3"?-- Well, I'd expect that unless they were confused. You know, and, I mean-----

But the manual doesn't allow confusion. The manual states that you should be in W3?-- Oh, yes, yeah, but they-----

MR AMBROSE: Let him finish the question - let him finish the answer, please.

MS WILSON: I will let him answer. Professor?-- The manual states, yeah, it's not that they are - in the situation I'm, you know, allowing to be possible is that they are doing what's required in W3 but in, you know, kind of the fog of war they say, "Oh, it's W2," or whatever, you know, so - and so we say, "Hey, you can't be" - I'm really constructing a hypothetical situation.

Yes?-- But they're working under pressure and the important thing is did they do what was required for the conditions that applied at the time.

I'm just asking you to look at the manual?-- Yes.

At after 8 a.m. on the 8th-----?-- Yes.

-----the flood engineer would have to know that he is - was in W3?-- Well, you know, as I've got - the idea of W3 being, you know, this is a - kind of a line in the sand or the - as I said, my - my view is that's a sub - summary of what's in W3. So they certainly would have to know all of that. Now, if they think this is W3 or not, that's not particularly relevant to me provided they're doing what is required for those conditions.

It's not the case, is it, that you don't know what strategy you are in at the time but after the flood event then you look back at the data and then you work out at that point in time we must have been in a certain strategy?-- It's possible, that's possible. I - you know, I can't really put myself in the minds of the engineers in the situation to be-----

COMMISSIONER: Professor Apelt, I'm just grappling with this, how do you know what conditions you have to meet unless you know what strategy you are in?-- From the actual objective information. The levels above 68.5, now, the - they could be - a person could be operating on those sets of conditions and requirements without the strategy name being mentioned.

But you have to know, don't you, that there is a strategy, that's it's called "W3", that these are the objectives under it in order to know what objectives you've got to meet?-- Well, you have to know the conditions you're in and they are labelled strategy W something or other-----

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<sup>143</sup>

Yes?-- -----for convenience but what's important to know is the conditions you're in and the requirements that those conditions require you to follow.

Well, how is it that you're going to know what the conditions are that are necessary - how are you going to know what you have to do under W3 unless you know you're in W3, that's my question?-- By knowing the conditions that are required.

But you won't know the conditions - you won't know the importance of the conditions or the significance of the conditions or what it means what you have to do unless you appreciate that this is strategy W3 that you need to apply, surely?-- The - well, yes, in the global sense, yes. I mean, the person who - who is coming - people who are doing this would be familiar with this manual-----

Mmm?-- -----and they would be well aware that, you know, under various conditions certain things have to be done. What label they give to it at that - in their head is not tremendously important from the point of view of what they do, it is obviously important from the point of the description of what they ought to - you know, the kind of labelling of the strategy that they're in.

258. The essence of what Professor Apelt was saying is:

- (a) The important thing was for the flood engineers to be conscious of the conditions they were in, and what the manual required them to do in those conditions.
- (b) This did not necessarily require them to turn their minds explicitly to the label or chapter heading in the manual under which the conditions and requirements are to be found.
- (c) Relevantly, when the conditions were such that the lake level reached 68.5 and the current releases from Wivenhoe were above the peak flows at Lowood and Moggill, the flood engineers had to be conscious:
  - (i) of those conditions;
  - (ii) that their primary objective was to protect urban areas from inundation; and
  - (iii) that they were required to keep the flows at Moggill below the threshold of urban damage of 4,000 cumecs.
- (d) The flood engineers could know all these things without explicitly bringing to mind the label or chapter heading in the manual under which one could read about these conditions and requirements.
- (e) It is understandable that the flood engineers would not discuss or record strategy labels in "the fog of war".



- (f) It is understandable that, after the event, once “the fog of war” had lifted, the flood engineers would then set about recording the strategy labels by reference to the conditions they were in and what they in fact did at the time.
259. Thus even if Mr Tibaldi’s methodology had been confined to the retrospective attribution of strategy labels by reference to the conditions the engineers were in and the objectively verifiable actions they took at the time, respected experts such as Mr Shannon and Professor Apelt would not regard that methodology as inappropriate, much less dishonest.
260. *A fortiori* where, as here, Mr Tibaldi’s methodology involved much more than this. As we have been at pains to emphasise, his methodology involved each of the flood engineers looking at the matter for himself and confirming that Mr Tibaldi’s account accorded with his recollection and belief.
261. In these circumstances, the suggestion that Mr Tibaldi’s methodology was a dishonest connivance cannot be sustained.
262. In the result, irrespective of the Commission’s own views as to the merits of Mr Tibaldi’s methodology, the allegations of collusion levelled against the flood engineers should be rejected.

## VI COMPLIANCE WITH THE MANUAL

263. The question of compliance depends on the correct legal interpretation of the manual.<sup>144</sup> That topic is addressed above in Part III. For the reasons developed there, applied to the circumstances existing in the period 8 to 10 January, to manage the dam in accordance with W3 the manual required (in essence) that when making decisions on water releases:
- (a) primary consideration be given to protecting urban areas from inundation;
  - (b) secondary consideration be given to lower level objectives; in particular minimising disruption to downstream rural life;
  - (c) the maximum rate of release be that which will produce a flow in the Brisbane River at Moggill of 4,000m<sup>3</sup>/s;

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<sup>144</sup> The question of compliance being addressed here is that which was the focus of the February 2012 hearings.

- (d) the rate of release is not to be limited by reference to the naturally occurring peak flows at Lowood and Moggill.
264. As we have said, two of the requirements engage the flood engineer's state of mind, namely (a) and (b). But if the flood engineer has that state of mind, and meets the other requirements ((c) and (d)), then the flood engineer has met the performance criteria of W3. In those circumstances, the flood engineer has discharged the obligations imposed by the manual as regards the use of W3.
265. It is not necessary under the manual that the flood engineer thinks to himself "I am now using W3" or, as some of the experts put it, subjectively place a label or chapter heading on the strategy he is using. Nor is it necessary that the flood engineer communicate to others that he is using W3, or write that down. The manual, properly construed, establishes that W3 is a collection of performance criteria. So long as the flood engineer achieves those criteria in making decisions about releases, then the flood engineer is discharging the obligation under the manual to use W3.
266. Further, on the evidence addressed in Parts III and IV above, the Commission should make a finding that there was compliance over the period 8 to 10 January. The flood engineers met the performance criteria of the manual over that period. This is supported by a detailed analysis of what they actually did over that period, and by a unanimous body of expert opinion.

## VII THE FLOOD REPORT

267. For the reasons developed in Part III above, the Commission should find that:
- (a) The flood report is not saying that W3 was invoked by a decision of the flood engineer at 8am on Saturday 8<sup>th</sup>. Rather, it is saying that W3 was used from that time. That is supported by the language appearing at p.190 "... strategy W3 was adopted for use at 8.00 on Saturday 8 January 2011." The language used to describe the adoption for use of W3 is in contrast to the language used to describe the transition to W4: "... at the start of this period it was decided to transition to strategy W4" (page 194).
- (b) As to the by-passing of W2, the report is saying that W2 could not be applied (because the then level of releases was above the rate of release at that time

permissible under W2), and that strategy W2 was by-passed by circumstances, rather than by a decision of the flood engineer.

- (c) The phrase “adopted for use” suggests conscious action by the flood engineer to commence to use strategy W3 in managing the dam. It should be found that that is what occurred.

268. In these circumstances, the Commission should find that the flood report was not misleading.

269. If (contrary to Seqwater’s submission) the Commission finds that the report is misleading, the Commission should nevertheless find that the flood engineers did not intend to mislead. As to this:

- (a) The flood engineers honestly believed the flood report to be true having regard to the sense in which they understood it.
- (b) The sense in which they understood it was informed by their honestly held interpretation of the manual.
- (c) The fact that the Commission may take a different view of what the manual means, and of what the flood report objectively conveys, does not render the flood engineers guilty of intentional deception.
- (d) As was held in *Akerhielm v De Mare* [1959] AC 789 at 805-806:

The question is not whether the defendant in any given case honestly believed the representation to be true in the sense assigned to it by the court on an objective consideration of its truth or falsity, but whether he honestly believed the representation to be true in the sense in which he understood it albeit erroneously when it was made.

- (e) Given the unanimous views of the experts, the understanding of the flood engineers should be found to be both reasonable and honest.
- (f) If the Commission arrives at a different understanding, that may mean that the flood engineers (and the experts) were mistaken. But it does not mean that they were dishonest.

**VIII**  
**RELEASES APPROPRIATE FOR OPERATIONS UNDER W3**

**Introduction**

270. There is a unanimous body of expert evidence to the effect that the releases actually made by the flood engineers over the period in issue (from 8am, Saturday 8 January 2011 to through to the morning of Monday, 10 January 2011) were appropriate and reasonable:
- (a) for operations under strategy W3 in the prevailing circumstances; and
  - (b) for giving primary consideration to protecting urban areas from inundation.
271. The Commission should make a finding to that effect.
272. In the submissions delivered by counsel assisting, it is conceded that each of the peer reviewers maintained his view that the releases from the dam were appropriate.<sup>145</sup> However, counsel assisting suggest that this "is not to the point now under consideration". That submission should be rejected. Whilst the questions addressed in the Parts above are important, an equally important question which the Commission must answer is whether, irrespective of the conclusions the Commission reaches on the above matters, the releases which were in fact made were appropriate and reasonable. For the reasons explained below, the unanimous body of expert evidence confirms they were and the Commission should find accordingly.

**Mr Babister**

273. Mr Babister approached this issue by looking at range of other possible operating scenarios. He framed the question this way:<sup>146</sup>

If the goal is to understand the level to which the dam mitigated the flood, or to assess the adequacy of the dam operational procedures, it is more productive to consider ... how well the [strategy deployed by the flood engineers] mitigated the flood in comparison to plausible alternatives.

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<sup>145</sup> Paragraph 432 of the submissions of counsel assisting.

<sup>146</sup> Mr Babister's report of 18 November 2011 at [12].

274. Mr Babister's findings are addressed in more detail in the next Part. However, it is sufficient to note for present purposes Mr Babister's conclusion that:<sup>147</sup>

With the information available during their operations, and using the strategies defined by the Manual, [I] believe the flood engineers achieved close to the best possible mitigation result for the January 2011 flood event.

[emphasis added]

275. In his oral evidence the following exchange occurred:<sup>148</sup>

And you have said that on your view it would not have been a responsible decision of the flood engineers on that Saturday and Sunday to have increased releases as per G1 or G2? [being scenarios involving significantly increased releases on Saturday]--That's right, they would have been taking a massive gamble if that sort of strategy was taken on, that they could have made flooding into that sort of major category instead of being around 2,000 CUMECS.

In your opinion, the releases they did decide to make were responsible?-- They were responsible. You could possibly argue for some slight changes, slightly higher changes, very small changes in some of their decisions, but they were in accordance with the manual and responsible.

[emphasis added]

276. And later:<sup>149</sup>

Would you say, to put it in layman's term, judging by the results the flood engineers have achieved in managing Wivenhoe they did a good job?-- I believe they did.

277. During his oral evidence, Mr Babister addressed other operating scenarios which he had modelled. Relevantly, those scenarios (referred to as Scenarios C and D) involved increasing releases from the dam on Saturday and Sunday.

278. Of Scenario C (which involved significantly higher releases over Saturday and Sunday), Mr Babister said:<sup>150</sup>

Now, is that what the flood engineer should have done?--I don't believe so. If detailed studies on the robustness of the forecast rain had been carried out and there was reason to be confident, they could have enacted some of this, but even this strategy is the very limit of what would be plausible.

I think there is some argument they probably could have released slightly higher flows after 4 o'clock in the afternoon on the 9th, but that's the only area where I believe and the other thing that with all of these different strategies we know from the strategies in an earlier report which are called A1, we ran five of them, that sometimes very slight subtle differences can have adverse affects if you interfere with the timing in a way produces detrimental effects. So it's not just a matter of increasing flows, it's a matter of increasing flows at the right time and the

<sup>147</sup> Mr Babister's report of 28 July 2011 at [16].

<sup>148</sup> T5897/11-23.

<sup>149</sup> T5900/30-32.

<sup>150</sup> T5899/50-T5900/28.

other thing the flood engineers did that gave them a very good outcome is they actually used nearly all of the storage below where the fuse plugs cut in. So any strategy that didn't make use of the similar amount of storage to the flood engineers, unless it released large amounts of early flow, which is not viable, was not going to generally have such a good outcome. That's why we were of the view that they did particularly well because they used all that storage near the peak of the second inflow.

By "particularly well", are you saying that with the information available to them at the time and operating under the strategies of the manual, the management of Wivenhoe was utilised to its maximum ability to protect against urban--?-- I wouldn't say maximum, but very close to it. There's certainly quite reasonable variations within the manual that wouldn't have produced such a good outcome.

All right. Or very close to the maximum?-- Quite close, yes.

The maximum ability of Wivenhoe to protect Brisbane against urban inundation?-- Under the constraints of the manual.

[emphasis added]

279. Of Scenario D (which involved increasing releases on Sunday afternoon), Mr Babister said:

And, once again, even though I said that's more plausible than the G1 or G2 strategy, it still is a quite adventurous risk-taking approach.

Would you explain why you say that?-- You are - have to fully invest in things like the forecast rain and what the eventual outcomes will be.

When you say "fully invest", do you mind explaining it in layman's terms?-- Fully invest, you have to be very confident that the forecast rain is going to turn - is actually going to occur.

Yes?-- And you have to - you have to - the advice you're getting from the Bureau of Meteorology and the things you are seeing on the radar, you have to be quite confident that will actually turn into sort of rainfall in the catchment.

You'd also have to have reasonable anticipation that the second peak inflow was going to come?-- Well, you certainly wouldn't have achieved anywhere near the sort of outcome if the second peak didn't flow.

No?-- You would have been looking not so smart.

But you have analysed the weather information available to the engineers on that Sunday, the 9th and to Monday, the 10th, haven't you?-- Yes.

The weather forecast just didn't predict that second severe inflow that occurred, did it?-- I have to recall, but, no, it didn't.

Wouldn't it be fair to say that it wouldn't have been a justifiable course on the weather information available to the flood engineers on Sunday, the 9th?-- To ramp flow up that high wouldn't have been justifiable.

[emphasis added]

**Mr McDonald**

280. Mr McDonald expressed the view that the release rates over the period Saturday to Monday were appropriate under strategy W3. The following exchange occurred:<sup>151</sup>

And your view was the rates of release they decided upon were appropriate to operating the dam under W3 on those three days?—Yes, given the circumstances obtained at the time and the mindset of the flood engineers. So I am not looking here at hindsight when we all know what has happened, I am looking at how they might perceive the world at the time.

281. Mr McDonald also expressed the view that the release rates over the period Saturday to Monday appropriately gave primary consideration to minimising the risk of urban inundation. The following exchange occurred:<sup>152</sup>

And your view was that they were [appropriate to giving primary consideration to minimising the risk of urban inundation]?--They were because I tried to put myself in the position, so far as I could, that the flood engineers were in at the time. So I wasn't looking at what we all know now because the flood engineers had a range of possibilities, an indefinitely large number of potential scenarios ahead of them and given the information in their mind, I thought they were operating reasonably.

282. A similar exchange occurred later.<sup>153</sup>

283. Mr McDonald was asked to explain what sources of information he had relied upon to ascertain the flood engineers' position at the time (including what was in their minds).<sup>154</sup>

284. He explained that he looked at the *objective* evidence of matters such as:

- (a) the lake level, which was static or declining;<sup>155</sup>
- (b) prior inflows, which under the Manual were not to be exceeded;<sup>156</sup>
- (c) the forecasts and the fact that the rain may be above or below those forecasts;<sup>157</sup>
- (d) the flows downstream of the dam,<sup>158</sup> and
- (e) the rates of release from the dam.<sup>159</sup>

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<sup>151</sup> T5569/7-12.

<sup>152</sup> T5570/6-18.

<sup>153</sup> T5571/53-T5572/6.

<sup>154</sup> See the exchange at T5570/26 to T5571/21.

<sup>155</sup> T5570/36-37.

<sup>156</sup> T5570/37-38.

<sup>157</sup> T5570/38-39.

<sup>158</sup> T5571/38-39.

<sup>159</sup> T5571/44-51.

285. He also said there was "evidence in the words in the report that they were thinking about the urban areas".<sup>160</sup> In this context he mentioned:

- (a) some flooding in Brisbane;
- (b) the release rates doubling the naturally occurring flow at Moggill;
- (c) that to increase the release rate may have result in the transition to strategy W1; and
- (d) the giving of weight to bridges being kept open.<sup>161</sup>

286. The source of the evidence referred to by Mr McDonald was section 2 of the flood event report.<sup>162</sup> It would be wrong to discount or ignore Mr McDonald's evidence on the basis that his apparent source of the matters referred to in the preceding paragraph was section 2 of the flood event report. Each of the matters referred to by him are either:

- (a) referred to in contemporaneous situation reports;<sup>163</sup> or
- (b) able to be verified from objective data available the time (such as the matters referred to in subparagraphs (b) and (c)).

### **Professor Apelt**

287. Professor Apelt also expressed the view that the release rates over the period Saturday to Monday were appropriate under strategy W3:<sup>164</sup>

And was it – is it your opinion that the decisions they made as regards the releases were appropriate by reference to the information available to them at the time of those days on the basis that they were operating the dam under W3? -- Yes. Yes.

And that remains your opinion? -- Yes.

288. Professor Apelt's view was that the release rates over the period Saturday to Monday appropriately gave primary consideration to minimising the risk of urban inundation:<sup>165</sup>

Is it also your opinion that the decisions they made as regards releases were appropriate by reference to the information available to them at the time, giving primary consideration to protecting urban areas against the risk of inundation? -- Yes.

And that remains your opinion? -- Yes.

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<sup>160</sup> T5570/45-46.

<sup>161</sup> T5570/46-55.

<sup>162</sup> T5571/9-19.

<sup>163</sup> See, for example, situation reports 9-12.

<sup>164</sup> T5736/7-12.

<sup>165</sup> T5736/14-20



289. The key information by which Professor Apelt tested the flood engineers' decisions on releases was the *objectively verifiable information* such as:<sup>166</sup>

- (a) lake levels;
- (b) inflows;
- (c) rates of releases;
- (d) downstream flows;
- (e) catchment rainfall records;
- (f) forecasts; and
- (g) model results.

290. The following exchange then occurred:<sup>167</sup>

Your opinion is that the rates of release they decided upon from time to time over those three days were appropriate, given that objectively verifiable information?-- Yes. Yes.

And on the on the basis of giving primary consideration to minimising the risk of urban inundation? Well, see, having the flows below the ultimate three and a half thousand to four thousand CUMECS, they were achieving the protection of the urban area, in fact overprotecting in the light of what happened later, but if there was – if this was the flood event they were dealing with and it looked as though everything was settling down, then what they were doing was the best possible thing because they were avoiding any real problem down in the urban areas and keeping the bridges open.

### Mr Roads

291. Mr Roads' approach was to review what the engineers actually did in managing the dam to decide whether they met the performance criteria under strategy W3. He concluded that they did, as is evident from the following exchange:<sup>168</sup>

And your opinion – the opinion you formed was that [the flood engineers] did meet the requirements of W3 in operating the dam from 8am Saturday, for the rest of that day? - - Yes.

And on the Sunday? - - Yes.

And on the Monday? - - Yes.

And you remain of that view? - - Yes.

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<sup>166</sup> T5736/51 to T5737/9

<sup>167</sup> T5737/5 – 21.

<sup>168</sup> T5799/31-41.

292. He expressed it this way in earlier exchange:<sup>169</sup>

What really matters is what they did, and that is presented in section 9, and also the flood modelling which tells them what they should be doing. So I can't tell you what their thought process was at that time at 8 o'clock. I guess if you look at it in reality, the big difference between going to W3 is their maximum releases can go up; that they can no longer limit it to reducing – limiting their outflows to 1900, but they are capable of increasing their discharges to 3500. Having said that, it would have looked rather ridiculous to start ramping up to 3500 at that time, given the information on rainfalls and dam water levels and flow predictions.

COMMISSIONER: Is that true for both the Saturday and the Sunday? Because the forecast changed significantly on the Sunday?-- Sunday morning I think that they were still pretty much releasing what they should have been. I think on Sunday afternoon it's starting to get touch and go really. I think everything is still operating the way that they thought was the right way to go and the right objectives to meet at that point in time, but in hindsight you look back at it and say Sunday afternoon maybe we should have taken down the bridges a bit earlier. We're all very clever in hindsight. But certainly Sunday morning there was nothing in the information that I could see that would have changed their mind on how they should have been operating, given that there hadn't really been a lot of rain overnight and dam was falling.

293. A later exchange confirmed this evidence.<sup>170</sup>

294. Mr Roads' view was that the release rates over the period Saturday to Monday appropriately gave primary consideration to minimising the risk of urban inundation.

So if you look at the requirements of W3, for example, you've got a requirement to make decisions about releases which gives effect to a primary consideration of minimising urban inundation. You've got a secondary objective of avoiding disruption to rural life. You've got other objectives regarding what can be the maximum releases and regulating your releases by reference to downstream flows? - - Yes.

In your view, what the engineers did from Saturday 8am for the rest of Saturday, all day Sunday, Monday met those objectives? - - Yes, that's my view.

### **Mr Shannon**

295. Mr Shannon said that he could see no glaring inconsistencies in the decisions about releases made by the flood engineers over the Saturday to Monday as being appropriate to operating under strategy W3.<sup>171</sup>

296. He also agreed that that the releases actually made by the flood engineers over the three days were appropriate to giving primary consideration to minimising the risk of urban inundation.<sup>172</sup>

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<sup>169</sup> T5773/16-42.

<sup>170</sup> T5805/34-39.

<sup>171</sup> T5847/40-45.

<sup>172</sup> T5847/55 to T5848/10.

**IX**  
**BEST OUTCOME THAT COULD REASONABLY BE EXPECTED**

297. The submissions of counsel assisting do not record the conclusions of the Commission's retained independent expert, Mr Babister. It is unclear why this is the case.

298. The uncontradicted expert evidence before the Commission is that:<sup>173</sup>

With the information available during their operations, and using the strategies defined by the Manual, [I] believe the flood engineers achieved close to the best possible mitigation result for the January 2011 flood event.

[emphasis added]

299. It would be unfair to the flood engineers and Seqwater to analyse their actions at the time, and in subsequently writing the flood report, to ignore this critical evidence or to excise it from the Commission's findings.

300. Indeed, it is in the public interest that a finding consistent with Mr Babister's opinion be made.

301. There has been widespread, misinformed media assertion that the operation of Wivenhoe dam caused the flooding in the rural and urban areas below the dam. Indeed, there has been some media commentary to the effect that the flooding in Brisbane could have been avoided had the dam been operated differently. This will undoubtedly have created the false impression in certain members of the public that Seqwater's operation of the dam flooded their homes and businesses. Indeed, certain members of the public have urged the Commission (most recently in a letter to the Commission from Mr Stark dated 10 February 2012) to find that "Seqwater caused the flood".

302. The reputational impacts of this upon Seqwater (and the personal impacts for the flood engineers) are obvious.

303. But it is in the public interest that the misinformation be corrected by the Commission's independent findings. The public must understand the nature of the flooding which can occur in the catchment and the extent to which it can be mitigated.

304. In this context, it is important to note Mr Babister's modelling.

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<sup>173</sup> Mr Babister's report of 28 July 2011 at [16].

305. As outlined above, he framed the question this way:<sup>174</sup>

If the goal is to understand the level to which the dam mitigated the flood, or to assess the adequacy of the dam operational procedures, it is more productive to consider ... how well the [strategy deployed by the flood engineers] mitigated the flood in comparison to plausible alternatives.

306. Mr Babister modelled a range of different operating scenarios. Scenario A involved the earlier triggering of Strategy W4. Scenario C involved significantly higher releases over Saturday and Sunday. Scenario D involved higher releases on Sunday. Scenarios G1 and G2 involved increasing releases to 4,000m<sup>3</sup>/s from the dam or to 4,000m<sup>3</sup>/s on Saturday.

307. A table showing Mr Babister's results is set out below.<sup>175</sup>

Location	Case 1	Option A	Option C	Option D	Scenario G1	Scenario G2
	Peak Flood Level (mAHD)	Peak Flood Level difference relative to Case 1 (m)				
<b>Moggill</b>	17.6	-0.3 to 0.4	-0.7	-0.9	-1.3	-1.0
<b>Jindalee</b>	13.1	-0.3 to 0.4	-0.6	-0.8	-1.2	-0.8
<b>Oxley</b>	8.3	-0.2 to 0.3	-0.5	-0.6	-0.9	-0.6
<b>Brisbane</b>	4.6	-0.1 to 0.3	-0.3	-0.4	-0.6	-0.3

308. The following observations can be made.

309. **First**, Scenario A involves the adoption of the Commission's interpretation of the Manual (being predicting the lake level using forecast rainfall information, and choosing between strategies on that prediction). Mr Babister modelled two scenarios that are consistent with the flood engineers relying on the forecast rainfall to predict a higher lake level, and therefore transitioning to Strategy W4 at an earlier time than they did. One model suggests that the overall peak river levels would have been slightly higher, and the other suggests they would have been slightly lower. Overall, therefore, it should be concluded that had the engineers followed the Commission's interpretation of the manual, and relied on forecast rainfall in choosing between strategies, no substantially better outcome would have been obtained and a worse outcome was possible. As Mr Babister puts it, the strategy adopted by the flood engineers was towards the more effective end of the range of plausible scenarios.<sup>176</sup>

<sup>174</sup> Mr Babister's report of 18 November 2011 at [12].

<sup>175</sup> This table is derived from Table 5 of Mr Babister's 28 July 2011 report and Table 1 of Mr Babister's 3 February 2012 report.

<sup>176</sup> Mr Babister's report of 28 July 2011 at [75].

310. **Secondly**, as explained above, Mr Babister's evidence is that on the information before the flood engineers, operating under Scenarios C and D was not justifiable. He said that Scenarios G1 and G2 were not practical and highly risky.<sup>177</sup>
311. Accordingly, whilst the above table suggests that different operating scenarios may, in some circumstances, have produced benefits in marginally lower flood levels, those operating scenarios were not plausible at the time. It is for this reason that Mr Babister concluded the flood engineers had produced close to the best possible mitigation result. The Commission should find accordingly.
312. **Thirdly**, the submissions of counsel assisting advance the proposition that the modelling has limitations.<sup>178</sup> Apparent weight is given to a recent submission from DHI. It is to be noted from Mr Stark's recent letter to the Commission (dated 10 February 2012) that DHI is apparently involved, in some way, in assisting Mr Stark.
313. The Commission should not discount the force of Mr Babister's modelling, either on the basis of the DHI letter or comments regarding uncertainties in modelling. Mr Babister has sworn that the model is fit for purpose.<sup>179</sup> Further, we attach (as Annexure C) a response from SKM to DHI's submission. It is evident that the matters raised by DHI should be given no weight when assessing Mr Babister's modelling.
314. **Fourthly**, counsel assisting submit that higher releases might have been made by the flood engineers had they not been operating under a "false constraint about the maximum level of flows that could be achieved." This should be rejected. This pure speculation ignores the substantial body of expert evidence that the releases in fact made over the period Saturday to Monday were appropriate and reasonable (see the previous Part). There is no basis to conclude the engineers may have acted differently.
315. The submissions advanced by counsel assisting in paragraphs 455 and 456 ignore the important qualifications placed upon that evidence by Mr Roads and Mr Babister.
316. As to Mr Roads, the passages relied upon by counsel assisting were clearly qualified with "in hindsight" and "we're all very clever in hindsight".<sup>180</sup>

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<sup>177</sup> T5891/28-32.

<sup>178</sup> Paragraph 453 of their submissions.

<sup>179</sup> Paragraph 56 of Mr Babister's report dated 28 July 2012.

<sup>180</sup> T5773/36-38.

317. As to Mr Babister, his evidence that slightly higher flows could have been released from 4pm on Sunday afternoon, was immediately qualified by his statement that the flood engineers did "particularly well".<sup>181</sup>

## X SEQWATER'S OVERSIGHT AND GOVERNANCE

### Introduction

318. This Part addresses the submissions made by counsel assisting in paragraphs 355-403, 407-439, 460-461, 484, 488 and 489.
319. In summary, these paragraphs advance the following propositions:
- (a) that Seqwater did not have in place a protocol or system which dictated when it was appropriate for the Chief Executive Officer to contact the flood operations centre or when it was appropriate for the Chief Executive Officer to pass on information regarding the work of the flood operations centre to the Board;<sup>182</sup>
  - (b) that the process and structure adopted by Seqwater for the preparation of the flood event report suffered from the following deficiencies:
    - (i) little support was provided to the flood engineers;<sup>183</sup>
    - (ii) no consideration was given to the risk of self-bias by the engineers;<sup>184</sup> and
    - (iii) the methodology being used by the engineers in preparing the report was not discussed;<sup>185</sup>
  - (c) that Seqwater's peer review process suffered from the following flaws:
    - (i) that the peer reviewers were asked to complete their reports in a short period of time;<sup>186</sup>
    - (ii) that certain experts were involved in the drafting of the report – not simply the review of it;<sup>187</sup>

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<sup>181</sup> T5899/50-5900/15.

<sup>182</sup> Paragraphs 360-362 and 489 of the submissions by Counsel Assisting.

<sup>183</sup> Paragraph 370 of the submissions by Counsel Assisting.

<sup>184</sup> Paragraph 371 of the submissions by Counsel Assisting.

<sup>185</sup> Paragraph 372 of the submissions by Counsel Assisting.

<sup>186</sup> Paragraph 419 of the submissions by Counsel Assisting.

- (iii) that the experts were not provided with complete copies of all material that was intended to go into the report;<sup>188</sup>
  - (iv) that the methodology by which Mr Tibaldi prepared the flood event report was not explained to the peer reviewers;<sup>189</sup> and
  - (v) that the failure to include relevant documents suggests systemic weakness.<sup>190</sup>
- (d) that Seqwater did not have a system in place that would bring to the attention of "people in positions with supervisory responsibility" the emergence of significant discrepancies between initial and subsequent accounts of the flood engineers as to which manual strategies they were operating under. The proposition advanced is that the absence of this system was a weakness that led to Mr Borrows and Mr Pruss not identifying the discrepancies.<sup>191</sup>

320. Each of these propositions should be rejected for the reasons set out below.

### **Communications protocol**

321. The evidence does not support the need for a formal communications protocol between the Chief Executive Officer and the flood operations centre (beyond the existing procedure<sup>192</sup>) or between the Chief Executive Officer and the Board.
322. It is true Mr Borrows contacted the flood operations centre on several occasions on 11 January 2011. But this was entirely appropriate. He was obviously concerned to ensure that he understood and was kept fully abreast of the rapidly changing environment. He also wanted to ensure the flood engineers were doing what they could to minimise the releases from Wivenhoe Dam.<sup>193</sup> These were the actions of an appropriately interested and concerned Chief Executive Officer.
323. The suggestion that the flood operations centre was "overwhelmed by constant requests for updates" is simply not supported by the evidence. The flood engineers that day were Mr Tibaldi and Mr Malone. Neither has given evidence to this effect.

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<sup>187</sup> Paragraphs 378 and 433-435 of the submissions by Counsel Assisting.

<sup>188</sup> Paragraphs 379 and 420-425 of the submissions by Counsel Assisting.

<sup>189</sup> Paragraph 423 of the submissions by Counsel Assisting.

<sup>190</sup> Paragraph 380 of the submissions by Counsel Assisting.

<sup>191</sup> Paragraphs 359, 403 and 488 of the submissions by Counsel Assisting.

<sup>192</sup> In addition to the protocol identified by Mr Borrows during his evidence, the Flood Procedure Manual (pp 47-48) deals with communications between the Chief Executive Officer and the flood operations centre – Ex. BM4(b) to the statement of Barton Maher dated 1 April 2011.

<sup>193</sup> Ex. 393 at [41].

324. The suggestion of a need for a protocol to govern communications between senior management and employees is highly unorthodox. It would be a strange organisation indeed that places strictures upon when a Chief Executive Officer can communicate with staff.
325. The suggestion that a protocol should govern when the Chief Executive Officer reports information to the Board ignores the obvious experience and judgment of those who occupy the office of Chief Executive Officer.

### **Process and structure for the flood event report**

326. It is true that the flood engineers took on the major task of writing the report.
327. But there is no evidence to support the proposition that they were not supported. The whole purpose of Mr Pruss' process was to ensure that the report was delivered on time and divide responsibilities accordingly.<sup>194</sup>
328. Mr Pruss explained it this way during an exchange with Mr Callaghan SC:<sup>195</sup>

When I talked to the flood engineers about how this had been done in the past it was made fairly clear to me that this was a process that was done by the engineers because they were the only ones who had the recollection of the events in sufficient accuracy to be able to write it, and it was then submitted to the regulator.

Their recollections of events were obviously an important part of that which was being prepared?-- I didn't see any other alternative and I still don't see any other alternative.

I suppose the only suggestion which might be made in this context, or one suggestion which might be made is that these people were preparing a report on what they themselves had done and there is going to be perhaps a natural tendency to self-bias if I can use that term in such reports. Was that something of which - or to which any consideration was given?-- There was no consideration given to it at the time. As I said, I still don't think that there is a viable alternative. When you are writing scientific engineering reports of this nature it really is the authors and those involved who do that. [emphasis added]

329. In the above context, there is no foundation in the assertion that there was a need to enquire about the methodology for writing the report.
330. The clear expectation of senior management was that the report should be an accurate account of the event.
331. The assessment that was made was that the flood engineers were the only persons capable of writing about the event given they had managed it.

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<sup>194</sup> T6053/14-23.

<sup>195</sup> T6056/36-58.



332. There was no reason to doubt that the flood engineers would produce an accurate account of the event.
333. It might be accepted that the writing of the report by the flood engineers carried with it a risk of self-bias. But Seqwater's process included steps that guarded against this. It appointed four independent experts to review the report. Those experts had access to anything they wished to access. As Mr Pruss explained:<sup>196</sup>

My mind was at ease because ... we also had the experts in there who could ask them any questions, really, that they wanted to and have access to anything that they wished to access, so I thought that process in itself was suitable checks and balances.

334. He later said:<sup>197</sup>

Mr Shannon was asking a number of technical questions right through that meeting on all sorts of things and I was quite comfortable with the fact that the flood engineers were being challenged technically by the experts to bring them on board, so I don't recall what that specific one is about, but I do recall a discussion about shapes of hydrographs between Mr Shannon and the flood engineers, and as I say I was very comfortable that they were being challenged technically on what they were putting forward.

### **Peer review process**

335. It is true that the peer reviewers were required to complete their reviews in a short period of time.
336. But Mr McDonald, who had the shortest period of time, indicated that the task was "reasonably tractable", despite indicating some initial concerns.<sup>198</sup>
337. None of the peer reviewers indicated in evidence that their review should be regarded as incomplete because of time constraints.
338. Further, the suggestion that the peer reviewers were involved in writing the report involves a misunderstanding of the evidence. Mr Shannon and Professor Apelt were present at meetings during which the report was discussed. But this was not directed towards them being involved in the writing of the report. It was simply, as Mr Pruss explained, a forum to assist them in coming up to speed with where the report was at.
339. Seqwater notes that counsel assisting do not advance the proposition that the review process lacked independence (see particularly paragraph 436). No such proposition could be

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<sup>196</sup> T6057/1-5.

<sup>197</sup> T6055/22-32.

<sup>198</sup> T5557/46-47.

advanced consistently with the evidence. As a result, the assertions made later in the submissions by counsel assisting (see paragraphs 437 and 438) should be rejected.

340. There was also no reason to doubt the competence of the flood engineers to provide copies of the necessary documentation to the experts for review. It is true that at least two situation reports were inadvertently left out of the bundle of situation reports. It is also true that the 3.30pm log entry was not part of the printed log provided to two of the peer reviewers. But the circumstances surrounding these occurrences were explained by Ms de Marchi. Whilst unfortunate, these two isolated, inadvertent incidents simply do not evidence systemic weakness in the review process, as advanced by counsel assisting. Indeed, the suggestion of a formal procedure to govern the collation of material for the peer reviewers simply would not overcome such isolated, inadvertent incidents.
341. The topic of Mr Tibaldi's methodology is addressed above. It is not addressed again here.

#### **System to identify discrepancies**

342. As Mr Borrows explained, the briefing to the Minister occurred outside of Seqwater's standard procedure for briefing Ministers because of the urgency of the request and the unavailability of staff.<sup>199</sup> In any event, the identification of differences in accounts of strategy selection was a matter that properly fell to the flood engineers to bring to the attention of senior management. This was not done on this occasion. But there are reasons for this. Mr Tibaldi's complete lack of recollection of the Ministerial briefing is one. The circumstances in which the Ministerial briefing were prepared is another (see the discussion above).
343. The failure to identify the differences between the Ministerial briefing and the flood report does not evidence systemic weakness of the type suggested, given the prevailing circumstances. There was no reason to doubt the competency of the flood engineers to bring such matters to the attention of senior management, if required.

**Brian O'Donnell QC**  
**Adam Pomeranke**

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<sup>199</sup> T5396/33-48.