

# QUEENSLAND FLOODS COMMISSION OF INQUIRY

## SUBMISSIONS ON BEHALF OF MR. AYRE AND SUNWATER LIMITED

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**PART A**

**SUBMISSIONS OF SUNWATER LIMITED AND MR AYRE**

## THE ALLEGATION

- 1 On the second day of the resumed sittings it was alleged by Mr. Callaghan SC that Mr. Ayre's evidence was<sup>1</sup>:
  - (a) Calculated to give the impression that everything was done by the book; and
  - (b) Was a deliberate manipulation of the truth; and
  - (c) That he worked together with the 3 engineers to conceal the truth.
- 2 The theory appears to be, in summary, that the "truth" that they were concealing was that the Flood Event Report was a dishonest "fiction".
- 3 It is also alleged that in fact W3 was not the strategy in place from 8am Saturday 8<sup>h</sup> and if at all was not engaged until 3.30pm on 9 January.
- 4 Such findings should not be made for the following reasons:

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<sup>1</sup> T5215

## SUMMARY OF SUBMISSIONS

**The allegation that the Report is a fiction, pretending the flood engineers had a state of mind to choose or bypass strategies.**

- 5 The notion of an intention to write a Report that wrongfully asserted the conscious application of a W strategy at a particular time is flawed.
- 6 It assumes wrongfully that the manual so requires - whereas relevantly here the manual prescribes when those strategies come into being without conscious decisions being required.
- 7 The engineers never had to pretend a conscious application of a W strategy to a particular time.
- 8 If so, they had no need to write a report pretending they did so.
- 9 The report on a fair reading merely records what happened in fact, reconstructed from actual live data and which the engineers each agreed with as being accurate. There is no dispute as to the accuracy of the live data.
- 10 To the extent a reading suggests a consciousness not in fact had in place, this is either a product of misplaced construction or a use of language less precise than now demanded.
- 11 In neither case does it support a finding of bad faith or any intention to mislead on the part of the flood engineers.

**The allegation that Strategy W3 was not in place from 8am Saturday 8 January**

- 12 The evidence does not support a finding that protection of the urban areas from inundation (W3) was not in place until after 3.30pm on Sunday 9 January (or at all):

- a) The 5:53 pm Situation Report and the reference to “will require the application of Wivenhoe Dam flood operation strategy W2”
  - this clearly is a reference to a future, not present state;
  - the modelling of lake levels, downstream flows and the three day forecast evidences this;
  - to make the finding would mean a finding that all 4 flood engineers and all 4 engineering qualified flood officers failed to notice the significance of the lake level exceeding 68.5 m even though readings done both electronically and manually are constantly referenced and acted upon on about an hourly basis;

- it ignores the logical explanation for the entry given by Mr Ayre;

b) The 3:30 conference

- the overwhelming evidence is that the flood engineers do not commonly use the terms W 1-2-3 but reference what is the actual needed activity resulting from the conditions;
- the actual sources of the words is not known - it may have been John Ruffini - it might not;
- it is a fundamental knowledge that one cannot be in 2 strategies simultaneously;

c) The 9:04 pm Situation Report referring to the strategy “will be to” minimise the impact of urban flooding

- there was a need then but not before to increase releases which would cause inundation;
- prior to this time it was unnecessary for the Situation Reports to say urban inundation was not going to happen;
- the proposition rests on the false assumption that when you move to a higher strategy you significantly increase releases up to the maximum. This is simply wrong;

d) That management attributed a W2 strategy to a time as late as Monday 10 January

- Mr Drury’s mistake was the genesis of the mistake of each of those above him who followed;
- there is no evidence it was based on information from flood engineers;
- it probably came from his examination of the Situation Report and directive from about 6:30 am that morning and was simply a careless error;
- Mr Drury has an incomplete understanding of the manual, and lacked the necessary data to make a reliable determination of which strategy was being applied;
- the errors cannot be attributed to the flood engineers.

e) The Summary of the manual by Terry Malone on Saturday 15 at about 1:00 pm

- in fact in the important matter it was correct - namely that W1 was exceeded at 8:00 am on Saturday 8;
- that it was incorrect in saying W2 was exceeded on the evening of 8 January, is unimportant. Nothing turns on this. If anything, it is the earliest in time record by a flood engineer of when strategy W1 was exceeded;
- there is no other evidence later in time that is proven to emanate from a flood engineer that contradicts this save for an exhausted Mr Tibaldi on Saturday 15<sup>h</sup> January at 9:10pm.

f) The Strategy Summary Log - 15 January 2011

- it was clearly wrong;
- the errors were so manifest that they were unlikely to be made by a flood engineer;
- it is more likely they were created by Mr Drury or a flood officer. Mr Drury cannot account for his contribution to the Minister's briefing note for the 2 hours he was present although it is unlikely he contributed to the narrative given the evidence of the emails coming from Mr Tibaldi on this point<sup>2</sup>;
- that Mr Drury created it is consistent with the probable use he made of the same documentation when he wrongly said W2 was in place;
- Mr Drury is prepared to attribute strategies despite his misinformed understanding of the manual, and the lack of necessary data.
- at its highest it cannot be attributed to a flood engineer and judging by the style of the email, it was probably neither created nor sent by Mr Ayre.

g) The absence of the 3:30 conference note and 5:53 pm Situation Report to the peer reviewers

- these are obviously administrative errors and not sinister;

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<sup>2</sup> Exhibit 1094 and T5602 L 50

- neither of the absences could be attributed to Mr Ayre as part of any conspiracy to mislead;
- the reviewers generally paid scant attention to the Flood Event Log as an appendix, but instead referred to and checked the objective data which is not in dispute.



**MATTERS TO BE RELIED UPON BY COUNSEL ASSISTING AS “PROVING” THE THEORY**

- 13 The evidence broadly relied upon by counsel assisting to prove the allegations advanced against the Flood Engineers:
- (a) Appears to be based upon a limited and misinformed interpretation and understanding of how transitions between strategies actually work, and the practical reality of operating a dam, which necessarily demands the constant assessment of data and prevailing conditions. There is an erroneous assumption that the engineers need to consciously attribute a label strategy to those conditions, rather than comply with the strategy conditions imposed upon them; and
  - (b) Draws inferences from single phrases in documents that are not understood in their proper context and do not bear scrutiny on careful examination; and
  - (c) Is based on misinformed attempts to attribute strategies to particular times by people other than the flood engineers, without the data necessary to make such a decision, and who lack the technical capacity, experience and qualifications to allow them to do so; and
  - (d) Is also based upon the misinformed understanding that compliance with the manual would be demonstrated by use of the language “strategy W1” etc, and that an expression of the strategies which the engineers were operating under cannot be later discerned from the objective data.
  - (e) Fails to recognise the circumstances and context in which statements that can be attributed to the flood engineers were made.

## THE STANDARD OF PROOF

14 The allegations being made against the flood engineers are very serious, and have the potential to ruin their professional standing.

15 It has been clear since *Briginshaw v. Briginshaw*<sup>1</sup> that in civil cases the standard of proof is on the balance of probabilities, with due regard being had to the nature of the issue involved so that:

*"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 proved to the reasonable satisfaction of the tribunal. In such matters "reasonable satisfaction" should not be produced by inexact proofs, indefinite testimony, or indirect inferences. Everyone must feel that, when, for instance, the issue is on which of two dates an admitted occurrence took place, a satisfactory conclusion may be reached on materials of a kind that would not satisfy any sound and prudent judgment if the question was whether some act had been done involving grave moral delinquency."....." It is often said that such an issue as fraud must be proved "clearly", "unequivocally", "strictly" or "with certainty"..... When, in a civil proceeding, a question arises whether a crime has been committed, the standard of persuasion is, according to the better opinion, the same as upon other civil issues .....But, consistently with this opinion, weight is given to the presumption of innocence and exactness of proof is expected.<sup>3</sup>"*

16 Although the standard remains the same, not every case involves issues of importance and gravity in the *Briginshaw* sense. The need to proceed with caution is clear if, for example, there is an allegation of fraud or an allegation of criminal or moral wrongdoing.<sup>4</sup>

17 There can be few more serious allegations than those that Counsel Assisting has levelled against Mr. Ayre.

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<sup>3</sup> (1938) 60 CLR at 362 per Dixon J

<sup>4</sup> *G v H* [1994] HCA 48; (1994) 181 CLR 387 per Deane, Dawson and Gaudron JJ at [16]; see also *Graham v. Queensland Nursing Council* [2009] QCA 280 and *Hewett v Medical Board of Western Australia* [2004] WASCA 170

## **A CIRCUMSTANTIAL CASE**

- 18 The allegations made by Mr Callaghan SC rely upon inferences being drawn from entirely, or substantially from circumstantial evidence for which there are other valid explanations (see section headed “DOCUMENTS RELIED UPON AS PROVING THE ALLEGATION THAT W 3 WAS NOT ENGAGED UNTIL AT THE EARLIEST 3.30PM ON SUNDAY 9 JANUARY 2011” below).
- 19 Because of the serious nature of the allegations made against the engineers, it is submitted that no adverse finding should be made against the engineers unless the evidence is capable of excluding any hypothesis consistent with innocence to a sufficiently high degree.
- 20 Where there is a reasonable interpretation of a Situation Report or entry in the Event Log, or a rational explanation of a matter that favours the engineers that is reasonably open on the evidence, and cannot be excluded, then on that matter, no adverse finding against an engineer should be made.

## CONSTRUCTION OF THE MANUAL

- 21 The Manual is a technical document, written by engineers.<sup>5</sup> Engineers are skilled addressees with a sound knowledge of the art.
- 22 The Manual has not been written by lawyers. It is a document that uses language to make a communication for a practical purpose. Accordingly, it should be given a purposive construction rather than a purely literal one derived from applying to it the kind of meticulous verbal analysis in which lawyers, too often tempted by their training, indulge.<sup>6</sup>
- 23 To lawyers, words count. Lawyers are trained in the art of expression. A pedantic and detailed analysis of language and expression is the trade of lawyers.
- 24 Engineers are trained in different arts.
- 25 To engineers, the focus is on the data. What really matters is numbers and the analysis of the data. Engineers look at the volumes of water with which they are dealing and lake levels. Their art lies in the comprehension of spreadsheets, hydrographs, hydrodynamic modelling and other sciences. The focus of the flood engineers is on the inflows that have occurred, will occur and may occur, the stream flow recordings, modelled projections and rainfall data. All of this analysis is ultimately aimed at protecting the dam and protecting areas down stream of the dam from inundation. If protection can't be achieved, minimizing damage is the aim. The focus of the engineers, in a practical sense, is on the releases, and the downstream impacts of those releases, rather than the label. The evidence in support of this assertion is overwhelming. See, for example: Ayre: T5256 L 46 to 55, T5256 L 38, T5273 L 51; Malone: T5358 L 21, T5363 L 8; Ruffini: T5451 L 38, Tibaldi: T5119 L 1; Apelt: T5746 L 19, 5727 L36 Roads: T5771 L 27; T5772 L 10; T5805 L 3 to 32 ; Shannon: T5848 L 1; Allen: T5906 L 40, However, that does not mean that the objectives of the manual, and the primary considerations are not being met. The last 12 months of evidence has made it clear that the engineers all know that the order of priorities in descending order is the safety of the dam, followed by protection of urban areas, followed by protection of rural life.
- 26 Mr Ayre said that he cannot recall consciously applying the label "W 3" in his mind on Saturday morning at 8am, but is clear that he was aware of all of the conditions that had been met. It is improbable to find that the most senior and experienced flood engineer was not aware of the most basic of concepts – namely when the lake

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<sup>5</sup> T402 L 27-29

<sup>6</sup> See Kirin- Amgen Inc v Hoechst Marion Roussel Ltd [2005] RPC 169

level is predicted to reach 68.5, W 1 ceases to apply. By all of the engineers' actions though the Saturday and Sunday, the objective of minimizing urban damage was achieved.<sup>7</sup>

27 The approach of the engineers, in concentrating on the data, on the conditions, on the lake levels, on the models, and then ensuring that the proposed releases meet the descending order of objectives is consistent with the approaches understood by the skilled addressees in assessing the performance of the engineers. Their focus has been on the decisions made as to releases, and checking that against the data, rather than the decisions made to apply a 'W' label.

(a) Mr Apelt articulated this when, he agreed that when reviewing the report he did not just rely on Section 2 of the report, but rather checked the actual information in the other sections of the report, about lake heights and all other aspects of the conditions at the time.<sup>8</sup>

(b) Mr Shannon, stated:

WILSON: 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?

SHANNON: 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.<sup>9</sup>

(c) Mr Babister stated:

O'DONNELL: Now, your opinion is that when the lake crosses 68.5 the manual mandates that there be a transition to higher strategy?

BABISTER: Yes, you must move out of Strategy 1 into Strategy 2 or Strategy W1, 2 or 3.<sup>10</sup>

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<sup>7</sup> see evidence of Mr Babister: T5900, L 39

<sup>8</sup> T5743 L 27

<sup>9</sup> T 5825, L 55 to T5826

<sup>10</sup> T 5894 L 50

- 28 That is not to say that it is not important for the flood engineers to know and understand the strategy that is in place at any given time – clearly that is important. But it is important for a number of reasons, namely:
- (d) It is important to know the lake level, because that gives an indication of the volume of water that is required to be discharged to return to FSL;
  - (e) Assessing the minimum releases necessary to allow for a 7 day –drain down or better;
  - (f) Knowing the maximum releases and downstream flow rates permitted within the strategy;
  - (g) Understanding both the primary and secondary considerations that are applicable within the strategy;
  - (h) When in W1A to W1E, knowing the lake levels, releases and flow rates applicable for each sub-category, so that assessments can be made as to what bridges will be impacted.
- 29 Accordingly, understanding the “primary consideration” (which was the focus of Counsel Assisting) is but one feature of many in the equation.

### **What is a “primary consideration”**

- 30 Each strategy in the Manual contains a “primary consideration”.
- 31 A theme of the resumed hearings implicit in much of the questioning has been the question: ‘How do you know which “primary consideration” you should be achieving, if you haven’t consciously turned your mind to the strategy label’? Such a theme is aesthetically enticing, however is ultimately misinformed.
- 32 The suggestion having been raised in questioning, the Commissioner properly sought to seek the views of Emeritus Professor Colin Apelt on this subject.
- 33 During Professor Apelt’s evidence, the following exchange occurred:<sup>11</sup>
- 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? --
- APELT: 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

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<sup>11</sup> T5732 L 50 – T5733 L 3

understanding of what is required for them to do. Whether they think, "This is W3", or whatever, is not for me the essence.

- 34 This was not challenged by Counsel Assisting; despite the strong criticism now made of the four flood engineers for holding similar views.
- 35 It is submitted that the implicit theme of Counsel Assisting's questions is misinformed, as it proceeds on the assumption that the "primary consideration" is the "most important" consideration or objective at that particular lake level range.
- 36 This overlooks the clear intent of the manual, namely that the objectives are always to be considered in descending order of importance.
- 37 The Manual provides for a descending list of priorities, or objectives to be met in operating the dam. The order of priorities is contained at section 8.4 of the Manual. Section 8.4 provides:

*As outlined in Section 3, the objectives, listed in descending order of importance, are as follows:*

- *Ensure the structural safety of the dams;*
- *Provide optimum protection of urbanised areas from inundation;*
- *Minimise disruption to rural life in the valleys of the Brisbane and Stanley Rivers;*
- *Retain the storage at Full Supply Level at the conclusion of the Flood Event;*
- *Minimise impacts to riparian flora and fauna during the drain down phase of the Flood Event.*

*Within any strategy, consideration is always given to these objectives in this order, when making decisions on dam releases.*

- 38 The words "within any strategy" are informative of the way in which the engineers actually operate the dam. The engineers actions and decisions on releases in operating the dam within any strategy prioritize urban protection over rural life, and the safety of the dam above all other considerations.
- 39 It is submitted that the purpose of the manual in providing a "primary consideration" for each strategy is simply to alert the engineers of the objective that is most likely to be threatened within a particular lake level range. So:
- (a) When the lake level is below 68.5, sufficient water has to be released to achieve a 7 -day (or less) drain down to FSL, but because there is less water to discharge the release rate can be less, so it is disruption to rural life that is most likely to be imperiled;

- (b) Once the lake level is in the range of 68.5 to 74 metres, more water has to be released to achieve the 7 day (or less) drain -down, so the objective that is most likely to be in danger is inundation of urban areas; and
- (c) Above 74 metres, the safety of the dam must now be the most active consideration, and sufficient releases must be made to stabilise the lake level, meaning that protection against urban inundation becomes a lesser consideration.

- 40 Because the engineers are always required to consider the objectives in descending order of priority “within any strategy”, and are always required to consider lower level objectives, unsurprisingly the focus of the engineers is not the “W” label, but rather the data, the releases from the dam, and the impacts of those releases down stream.
- 41 The temptation is to look at the “primary consideration” in W3 and believe that when the lake level exceeds 68.5m that there will be seen some immediate and observable operational change – i.e. increases in release rates or reductions in release rates to evidence a change in primary considerations. We submit this is an error in the construction of the Manual. When, such as on Saturday 8 January and most of Sunday 9 January, the circumstances are such that there is no need for increasing releases (because the lake level stayed very close to 68.5m the entire time), it would be against the intent of the manual to increase releases and thereby inundate the higher level bridges in order to “free up” more flood storage in case of some later higher inflow. At the same time, care must be taken to comply with the general intent of the Manual to keep outflows less than inflows to avoid unnecessary flooding.
- 42 It is submitted that the evidence establishes that the engineers were focused, at all times, on achieving as many of the objectives as they can, in descending order of priority. Provided the primary consideration in each strategy can be achieved, the flood engineer is required to have regard to the lower level objectives by keeping the rate of release to the minimum reasonably available to him. See section headed “OPERATIONAL COMPLIANCE – STRATEGY W3 WAS USED” below.
- 43 Indeed, the demonstrated approach of the engineers is in accordance with how Professor Apelt understood the Manual. Professor Apelt explained that he saw the “W” label as purely a label, or chapter heading summarizing the conditions under which certain actions will be taken:



WILSON            So did you approach this as your task to determine whether the January flood event the dam was operating in accordance with those strategies, that is W1 to W4?-

APELT            Well, much more broadly than that because, like, there's a whole - the strategies I - you know, those statements of the strategies, which you've listed

WILSON            Yes?

APELT            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<sup>12</sup>.

44            Again, that approach was not challenged by Counsel Assisting despite the challenge now mounted in Counsel Assisting's submissions.

45            At a later point in the evidence, Professor Apelt provided further explanation of how he understood and interpreted the Manual.

APELT            As has been repeated many times, all of the objectives are to be taken into account, and if you can achieve all of them within a particular strategy, you get 10 out of 10.<sup>13</sup>

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<sup>12</sup> T5727 L30-45

<sup>13</sup> T 5747 L 25

**THE MANUAL OF OPERATIONAL PROCEDURES FOR FLOOD MITIGATION AT WIVENHOE DAM AND SOMERSET DAM DOES NOT REQUIRE A CONSCIOUS DECISION TO ENGAGE W3 – IT IS IMPOSED UPON THE FLOOD ENGINEER BY THE OBJECTIVE DATA**

46 In our submission:

- (a) The Manual does not require such a conscious decision for any of the movements between W1A through to W1E because the adoption of each of those sub-strategies is dictated by the lake levels and the maximum releases.
- (b) No choice is required for W2 because this is determined by a coincidence of lake level (greater than 68.5m) and release rates being less than the natural peak flow rates at Lowood and Moggill.
- (c) No choice is required for W3 if the lake level is greater than 68.5 and the releases from Wivenhoe are greater than the natural peak flow rates at Lowood and Moggill.
- (d) The only “choice” that the engineer has is to either hold steady, decrease or increase release rates (and in turn decide the rate of change of those releases) which in turn will impact on the rate of rise or fall of the lake level and impact on the strategy that is engaged when the lake level is predicted to reach 68.5m;
- (e) Here, at 8:00 am on Saturday 8 January 2010, the lake level was at 68.5 and releases from Wivenhoe were in excess of the natural peak flow rates at Lowood and Moggill. It follows that W3 was engaged without the need for any exercise of choice.
- (f) It would appear therefore that the Manual of Operational Procedures requires a conscious choice to be made of a strategy but only when that strategy can be the subject of a choice.
  - (i) This occurs, for example, where there is a decision to invoke a strategy on a predicted lake level rather than an actual lake level (for instance, as occurred with the transition to strategy W4 before the lake level actually reached 74m).
  - (ii) A choice could also be made if the lake level is at 68.5m and releases from Wivenhoe are less than the natural peak flow rates at Lowood and Moggill. In that circumstance, a flood engineer can

choose to move to W 3 (and therefore out of W2) by increasing releases from W ivenhoe (to above the peak rate of the flows below) and this would be done in accordance with the Manual's last sentence page 26, if it was "appropriate" in all the circumstances.

47 Once a strategy, say W3, is imposed upon an engineer by the Manual, the engineer is then required to 'use' that strategy. An engineer discharges the obligation to use W3 by making decisions on releases that meet the criteria set out in the manual at page 28. If the decisions on releases satisfy those criteria, then the engineer has used that strategy.

48 In the circumstances that existed at 8am on Saturday 8 January 2011:

- (a) Releases already having been made greater than the natural peak flow rates at Lowood and Moggill when the lake level reached 68.5 it was not then a matter of choice but fact that W3 was engaged;
- (b) That this did not occur as a conscious choice at the time the lake touched 68.5 is obvious. It could not have been;
- (c) That the Flood Event Report expressed the engagement of W3 as a fact is wholly correct;
- (d) That the Flood Event Report expressed the by -passing of W 2 as a fact is also wholly correct;
- (e) In our submission the Flood Event Report did not by its words imply that a conscious choice was made. This is an error of construction.

49 Once the lake level exceeds 68.5, there is a switch to strategy W 2 or W 3 as appropriate. In our submission the Manual does not require a conscious choice as to that "switch" between strategies where:

- (a) The lake level crosses 68.5 and the releases are less than down stream naturally occurring peaks, Strategy W 2 is mandated, or imposed by the manual.
- (a) The lake level crosses 68.5 and the releases are more than downstream naturally occurring peaks, Strategy W 3 is mandated, or imposed by the manual.

50 It follows then that the Manual of Operational Procedures requires a conscious choice to be made of strategy only when that strategy can be the subject of choice.

- 51 The only choice in respect to transitioning between strategies that Mr Ayre truly had at 8am Saturday was a choice not to transition back to strategy W 2 from strategy W3. This would have involved reducing the release rates, and there is no contention raised that this would have been appropriate. That this decision, to reduce releases below the naturally occurring peaks was not made, demonstrates that the decision to invoke W2 was not made.
- 52 If a Flood Engineer knows:
- (a) the lake level is 68.5;
  - (b) the release flow rate;
  - (c) the natural peak flow rates at Lowood and Moggill;
  - (d) that the releases are higher than the natural peak flows at Lowood and Moggill;
- then the Flood Engineer knows that protection from urban inundation is the primary consideration and would apply the 'W3' if asked.
- 53 Releases ought continue to be made which will continue to have a benign effect on urban inundation whilst being consistent with the requirement to return the lake level to FSL of 67mAHD within 7 days (at the most). There is therefore no reason to introduce any new or dramatic operation or even any variation in what may have been put in train by the earlier selection of release flow rates. Changes to choices of release rates may be forced upon the Flood Engineers, not by any conscious recognition of a W label, but by events such as changes to lake inflows, rainfall distribution, stream flows, tides etc.
- 54 It does not matter if there is no conscious appreciation that the release rates are higher than the natural peak flow rates at Lowood and Moggill and that by virtue of the Manual, W2 is bypassed. The operational decisions themselves will not change by that label being engaged.
- 55 The operational decisions under W 2 are as equally applicable as for W 3 whilst the lake level remains between the same range – viz 68.5m – 74m AHD. The objectives are very similar as are the goals.<sup>14</sup>
- 56 A conscious understanding of being in W3 by label is not required even if lawyers think they would be assisted by a label. Such a proposition is against the weight of the evidence.

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<sup>14</sup> Babister Report 3 February 2012 Ex1125 paragraphs 7 and 9

(a) Mr Shannon stated:

COMMISSIONER: So would you expect they'd be pretty clear about it at the time and shortly afterwards?

SHANNON: They would need all the circumstances, a bit like understanding the geography of your home address. You know where you are not just because there is a street name at the end of the street because you know all the circumstances that surround it. You don't absolutely need the tag to do the job that you have been tasked with.<sup>15</sup>

And:

WILSON 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?

SHANNON 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.

WILSON 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?

SHANNON 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>16</sup>

And

O'DONNELL: Yes. I've noticed some of your answers before lunch were along the lines - tell me if I interpreted it correctly - from your - in your professional opinion, the key thing for the engineers was to have in mind the criteria to be satisfied under W3 or to be achieved under W3 and to actually achieve it in the decisions they made,

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<sup>15</sup> T5821, L 1

<sup>16</sup> T5825, L 6 to 21

rather than to be consciously thinking "I'm in W3" or consciously putting a label on the strategy they were applying?

SHANNON: I didn't mean to imply that they would disregard it. Just as in my analogy about street signs and my house, I don't think when I get home: Did I come down the right street? I know that instinctively. I would have expected the dam operators, who had been dealing with in this day in, day out, albeit in less stressful circumstances, to have more or less inculcated what the conditions were that accorded with the different strategies.

O'DONNELL: Therefore you might not expect them to be openly expressing to each other, "We're currently W3"?

SHANNON: No.

O'DONNELL: Or writing it down?

SHANNON: No more than I might say it my wife, I will be home at such and such a number, such and such a street this evening.<sup>17</sup>

(b) Mr Apelt stated:

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?

APELT: I don't think it is necessary for you to advert explicitly to the fact that "This is W 3". 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.<sup>18</sup>

And

APELT: 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

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<sup>17</sup> T5848, L 21 to 43

<sup>18</sup> T5732, L 51 to T5733, L 2

conditions now that call for the actions that are detailed under W3, for example.<sup>19</sup>

And

WILSON: 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?

APELT 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

WILSON: 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?

APELT: By knowing the conditions that are required.

WILSON 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?

APELT: 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

WILSON Mmm?

APELT 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.<sup>20</sup>

(c) Mr Roads stated:

WILSON: So did you accept that the engineers moved to strategy W 3 at 8 a.m. on 8 January?

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<sup>19</sup> T5749, L 20 to 26

<sup>20</sup> T5740 L 4

ROADS: I accepted that as the water level fell over the line they were automatically in W3, whether they liked it or not.

WILSON: Whether they liked it or not. But the flood engineer would have to appreciate that he is in a different strategy?

ROADS: Yes.

WILSON: So at 8 a.m. on the 8th, did you assume that the dam engineers had appreciated that they had moved to a different strategy?

ROADS: I must admit I didn't really think about that time and what they were appreciating; just looking at what they actually did.

WILSON: But they have to take into account the primary consideration?

ROADS: Yes.<sup>21</sup>

And:

MURDOCH: So wouldn't that suggest that we first ascertain the operating strategy which the operators asserted was in use and then testing their actions against that? If we're pursuing the objective of ascertaining whether there was compliance or non-compliance?

ROADS: Well, I guess to do that would be not assessing in accordance with the manual, because the manual says where they were at that particular point in time. To say that they thought they were in a different strategy is almost superfluous, unless they were releasing releasing that are outside those conditions given in the manual, really.

MURDOCH: 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?

ROADS: Yes, and looked as whether they've satisfied the criteria in each of those strategies.<sup>22</sup>

### **Decisions leading to the transition to W3**

57 Mr Ayre personally made no conscious decision to move from W1 to W3 at 8am on Saturday 8 January 2011.<sup>23</sup>

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<sup>21</sup> T5768 L 42

<sup>22</sup> T5775 L 30

<sup>23</sup> T5626



- 58 That is understandable, considering how that transition is imposed:
- (d) Once 68.5m is satisfied, you have no option but to be in W2 or W3.<sup>24</sup>
- (a) Once 68.5m is exceeded, a transition is mandated by the manual.<sup>25</sup>
- 59 It wasn't Mr Ayre's role on that day to decide to invoke the higher strategy. That was mandated by the manual.
- 60 The strategy was imposed upon him by the magnitude of the event upstream of the dam.
- 61 A flood engineer does not have an election to choose not to invoke a higher strategy.<sup>26</sup>
- 62 It is clear though, that over the course of the Saturday and Sunday, the engineers actually used strategy W3, and achieved its primary objectives of protecting urban areas.<sup>27</sup> Because these objectives were completely achieved, the engineers were able to achieve the lower level objectives, such as not prematurely inundating Mt Crosby Weir and Fernvale Bridges.
- 63 When Mr Ayre came on shift, it would have been immediately apparent that the lake level was going to exceed 68.5 based on the model run.<sup>28</sup>
- 64 Mr Ruffini had worked the night shift from 7pm Friday until 7am Saturday. Mr Ruffini issued a Situation Report at 6am on the Saturday, which recorded the lake level as just below the 68.5m threshold and rising.
- 65 Mr Ruffini had recognized that once the lake actually crossed 68.5m and the transition occurred, W2 would be inapplicable:
- O'DONNELL: 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?
- RUFFINI Correct.
- O'DONNELL Some questions were asked of you that the recognition that W 2 would be inapplicable was - sort of a substantial exercise in working that out. Do you remember questions along those lines?

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<sup>24</sup> T5262

<sup>25</sup> T5626

<sup>26</sup> T5262

<sup>27</sup> See section Operational Compliance below

<sup>28</sup> T5264 - T5265

RUFFINI Yes.

O'DONNELL Could I explore that with you a little bit more?

O'DONNELL The downstream flows naturally occurring at Lowood and Moggill are well below that, aren't they?

RUFFINI That's correct.

O'DONNELL And you had that information available to you?

RUFFINI Sure.

O'DONNELL Towards the end of your shift Wivenhoe is releasing about 890 CUMECS?

RUFFINI Correct.

RUFFINI Yes, I did.

O'DONNELL In your operational-----?—

RUFFINI: Spreadsheet.

O'DONNELL -----spreadsheet?

RUFFINI -- Mmm.

O'DONNELL Which you were working on during your shift?

RUFFINI Yes.

O'DONNELL A simple comparison of the figures would tell you that W2 would be unavailable?

RUFFINI That's correct.

O'DONNELL Wouldn't it have just been obvious to you?

RUFFINI I believe it would have been, yes.

O'DONNELL You didn't have to do any complicated calculation or working out?

RUFFINI No. No.<sup>29</sup>

66 It would be clear to Mr Ruffini, on a simple viewing of the spreadsheet, that the releases would exceed the downstream naturally occurring flows. At that stage, Wivenhoe was releasing about 890 cumecs, and the downstream naturally occurring peak had already been exceeded.

67 That Situation Report made clear the proposed release strategy to be implemented.

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<sup>29</sup> T 5443 Line 8 - 33

*"It is intended to ramp up the release from Wivenhoe to 1200 cumecs by midday, Saturday the 8<sup>th</sup>"*

68 Mr Ayre explained in detail the handover process at 7.00am on Saturday 8 January 2011 with Mr Ruffini.<sup>30</sup> Mr Ayre explained in evidence that it was not his role to decide to invoke the higher strategy (that was mandated by conditions and the manual requirements), but rather his role was to use the higher strategy once those conditions were met. The following exchange highlight this aspect of the evidence.<sup>31</sup>

O'DONNELL: Can I attempt to articulate what I think you are trying to say. Can you tell me whether I've got it right or not? You're trying to say that Ruffini's decision as to the release rates, before you came on shift, was such that the release rates from Wivenhoe would be greater than the peaks occurring at Lowood and Moggill and, therefore, predetermined that when the lake level crossed 68.5, W2 would not be an appropriate strategy?

AYRE: Yes, that's right. I could not influence that decision as such.

O'DONNELL: So, in other words the requirement to transition to W3 was a combination of (a), the lake level crossing 68.5 and (b) the fact that W2 was not then an appropriate strategy because of the releases already determined from Wivenhoe relative to the downstream flows?

AYRE: Yes.

69 Mr Ayre can actually recall an appreciation of a transition from W1 to a higher strategy, but he candidly conceded that he could not now recall whether he was conscious as to whether the transition was to W2 or W3. But at that stage, there was no need to differentiate between strategy W2 and W3.<sup>32</sup>

70 The release strategy was achieving the primary consideration of protecting urban areas from inundation.<sup>33</sup>

71 Mr Ayre knew that the releases from Wivenhoe, combined with the downstream flow rates, would result in a flow in the mid-Brisbane River of 1600 cumecs. He also knew, from the October 2010 event, that there was some urban inundation of low lying areas and infrastructure like walkways, bikeways and interruption to ferry

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<sup>30</sup> The second statement of Mr Ayre (ex 18), paragraph 32

<sup>31</sup> T5265 L 10-35

<sup>32</sup> The second statement of Mr Ayre (ex 18), paragraph 34

<sup>33</sup> T5267

services.<sup>34</sup> See also the 11.30am reference to the report to the BCC that flows would not exceed 1500 cumecs in the Flood Event Log. This provides the clear evidence that urban inundation was forefront on the consciousness of Mr Ayre.

72 Clearly, the flow rate directed by Mr Ayre in his directive 4 at 8:08am on Saturday 8 January 2011, which continued releases up to 1247 m3/s, was made with that target flow in mind.

73 However, by the Sunday evening of 9 January 2011, the lower level objectives had to be completely abandoned.

### **AWARENESS OF THE OPERATING STRATEGIES**

74 Whilst Mr Ayre cannot now say that he recalls consciously attributing the label W 3, he was aware of all the facts he needed to know in order to attribute the “strategy W3” (if asked) was operating in accordance with the requirements of that strategy. As explained by Mr. Shannon, the engineers are so familiar with the conditions for the strategies, that it is unnecessary to label them in a positive way.

75 Mr. Shannon likened it to the fact that if you were to say to your wife you are coming home, you don’t need to say “I will be home at such and such a number, such and such a street this evening.”<sup>35</sup> It is so obvious that it goes without saying.

76 It is absurd to suggest that Mr Ayre does not understand the manual or the strategies. In evidence Mr Ruffini explained to Mr Sullivan SC that Mr Ayre had been the one who had conducted the study that essentially set the operating rules for the manual:

RUFFINI: Rob has a vast professional experience in managing dams both he and myself were intimately involved in a massive - in a large comprehensive study in the early 90’s which effectively set the - set the rules. We did all the modeling to establish the rules and established the risk profiles as part of a large modeling exercise... That occurred in the early 90’s. It was a three, four-year study.

77 Surely, if Mr Ayre, a very experienced engineer were actually asked at 8am on the Saturday what “W ” he was in, the immediate response would be W 3, as the lake level had exceeded 68.5m, and the releases exceeded the down stream flows.

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<sup>34</sup> T 5268

<sup>35</sup> T5848 L 40

78 That there is this inherent, fundamental awareness in a flood engineer or experience is demonstrated in the following exchange between Wilson SC and Professor Apelt:

WILSON Professor, when does the dam operator (corrected to engineer by the Commissioner) know what strategy he is in, when does the dam operator know what strategy he is in?

...

APELT: Well, they - I would expect that - their primary information is those - those specifications in terms of the dam level, et cetera

...

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.

...

WILSON 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?

APELT: 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.

79 Mr Ayre stated:

O'DONNELL: You were asked some questions about that yesterday in the transcript at 5190 at about line 40. You were taken to that statement, and you answered, "Yes, as a matter of course or practice, we haven't necessarily recorded those strategy labels as the event progresses." Mr Callaghan says, "Recorded or even really turned your minds to them?" You answer, "We turn our

minds to them because we are looking at the objectives and also we're obviously cognisant of the lake level."?

AYRE: Yes.

O'DONNELL: I just want to clarify this. Is it your evidence that while the flood engineer is managing the flood, the flood engineer does or does not have in mind, "What is the current strategy I'm using?"?

AYRE: I believe we are aware of the objectives. We are aware of all of the associated parameters or conditions that describe the relevant strategies but do I go around necessarily thinking W3? No, not necessarily.<sup>36</sup>

80 Mr Ruffini stated:

CALLAGHAN: Was it on that basis that you decided that the transition was being made to W3?

RUFFINI: Yeah. At that time, that's - do I specifically remember saying - today sitting here do I specifically remember having a conversation about this is 1, this is 3? I can't exactly in my head draw those thoughts and recollect, but I've gone and back I've looked at the situation reports that I wrote at the time at the end of that shift, I've gone back and I've looked at the - I looked at the actual spreadsheet that I used at that time during the thing, and it's sort of - to write that report that I was working on, and going back and looking at that, yes, that's what I believe happened.<sup>37</sup>

81 The determination of strategy labels is straightforward. The decisions made by engineers within those strategies are complex. To assert that engineers could get the complex decisions right, but not answer a simple question as to the strategy label, is absurd.

82 It is not the practice of the engineers to actually use the terms W in describing flood events in their operational sense. For the local councils, what matters are the flow rates, and how their communities will be impacted by releases from the dams combining with downstream flows.<sup>38</sup>

83 Outside of the FOC, there is little understanding of what a "W" strategy would actually mean. The real information that is required by those receiving Situation

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<sup>36</sup> T5273 L 41

<sup>37</sup> T5387 L 15-25.

<sup>38</sup> Drury: T 5475 L 30, T5576 L 10; Spiller: T655 L 40 and Mr Smith Statement (Ex 1138) paragraphs 9 to 11

Reports or Technical Situation Reports are the impacts of the releases, not the label applied to those releases.<sup>39</sup>

84 The gate operations spreadsheet (exhibit 1054) is a primary tool that flood engineers use in real time in operating the dam during flood events.<sup>40</sup> The spreadsheet will always be up in front of the flood engineer on a computer screen. The software allows the engineer to see the calculated projected flows at Moggill and Lowood, based on various tests of gate operations strategies. It is the very flows at Lowood and Moggill that are going to inform the impact on the urban areas. The flood engineers were focused on the flows at Lowood and Moggill. This evidence their foremost consideration was urban inundation.

85 All of these pieces of data would have been right there in front of Mr Ayre on that Saturday during his shift. The engineer is recording the lake level in the gate operations spreadsheet on the hour. The engineer is receiving emails or faxes from the dam operators with lake level recordings. The engineer is conducting modelling. The engineer is typing the gate settings into the gate operations spreadsheet. The outflows from the dam are immediately apparent from the modelling and the spreadsheet. The inflow into the dam is being recorded, and monitored by the engineer. The lake level, gate settings and rates of release are put up on a whiteboard and updated hourly. The use of these tools means an engineer cannot fail to be aware of all of the objective data that is needed to determine which strategy is in use.

O'DONNELL: "So Mr Ayre, if he's looking at this document on Saturday morning (8 January at 8:00am) would see at a glance what was the current lake level, what was the current releases, what were the flows downstream, he'd have all of that information in front of him?

TIBALDI: You know, there is a clear awareness – you can't be sitting there not knowing what the lake level or the discharges from Wivenhoe. I mean, I can say with certainty that that's clear in every engineer's mind when he's on duty at all times because you're just sitting in front of this. That's my belief.<sup>41</sup>

86 Just because an engineer cannot consciously recall applying the label W3 at 8am on Saturday, does not mean that the engineer is not aware that the conditions that

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<sup>39</sup> Drury: T5477 L10-15, T5486 L25-35, T5488 L25-45; Spiller: T5611 L15-25, T5612 L5 – 30; Dennien: T5655 L35-45, T5684 L1-10

<sup>40</sup> T5161 Line 30 – T 5165 Line 60

<sup>41</sup> T 5164

dictate a switch in strategy have been fulfilled (the lake level crossing 68.5), or that the primary consideration has changed.

87 Due to the engineer's familiarity with the manual, it is not surprising that Mr Ayre does not consciously recall applying the label W3.

O'DONNELL: I just want to clarify this. Is it your evidence that while the flood engineer is managing the flood, the flood engineer does or does not have in mind, 'what is the current strategy I'm using?'

AYRE: I believe we are aware of the objectives. We are aware of all of the associated parameters or conditions that describe the relevant strategies but do I go around necessarily thinking W3? No, not necessarily.<sup>42</sup>

88 Here Strategy W3 was engaged without the need for any exercise of choice. In essence, the choice to adopt strategy W3 once the lake reached 68.5m was put in train when Mr Malone first proposed the strategy to increase releases to 1200 cumecs, and when the actual decision to increase releases above the naturally occurring peak had been made by John Ruffini at about 5am. Once the lake level crossed 68.5m, Mr Ayre did not need to make a choice to invoke strategy W3, as he was already committed to that strategy when Mr Ruffini had pre-determined to increase releases above the naturally occurring peak.

89 Mr Ruffini explained his decision-making process (and the use of forecasts) for increasing releases on his Friday night shift as follows:

O'DONNELL: Can I ask you to walk us through what was the analysis during that shift that ended on Saturday morning the 8th?—

RUFFINI: Okay. The analysis was we had - the spreadsheets had done the model runs and Mr Malone had handed over his work at handover which sort of was indicating - indicating those releases and when I came on I'd relooked at those, redid those numbers and sums.

O'DONNELL: So that is Friday evening around, starting at 7 p.m.?

RUFFINI: Yes.

O'DONNELL: Yes?

RUFFINI: Okay. I'd come up with a similar release pattern to what Terry had done and that was sort of, you know, showing that we'd ramp -

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<sup>42</sup> T5273 L 50 – 60



you know, we were going to ramp up releases; we were going to hit 68.5 and

O'DONNELL: Just take this slowly. You are talking to lay people here?

RUFFINI: Sorry.

O'DONNELL: Ramp up releases from Wivenhoe hoe?

RUFFINI: That's right.

O'DONNELL: The lake level would hit 68.5?

RUFFINI: That's right. That's what the model was saying. It was going to hit 68.5 correct.

O'DONNELL: Was consideration then being given to flows at Lowood and Moggill?

RUFFINI: Yes.

O'DONNELL: Tell us about that, please?

RUFFINI: We were looking at the downstream impacts. In my situation report I was looking at - I put something in there about what might happen in Brisbane with these releases. If you look at the actual release pattern it was over while we had seven days of opportunity to drain. Given the forecasts that were in front of us that draining time in terms of the last model that I looked at, because of the forecasts of the rain, I had it down to three days so we weren't - we weren't attempting to keep that as low as possible and do a seven day drain, which I would have been probably playing with if I was considering those lower threshold objectives.

O'DONNELL: When you said "we" in that last answer, do you mean you?

RUFFINI: Yes.

90 Mr Ayre has never said that they consciously decided to implement W3 at 8:00 am on Saturday 8. For instance, at paragraph 34 of Mr Ayre's supplement any statement (exhibit 18), he states:

*"By about 8am, Wivenhoe Dam had reached 68.52m AHD. Because this level was above the predicted lake level of 68.5 m AHD relevant to strategy W1, I was conscious of the fact that we were transitioning the strategies from W1 to W2 or*

*W3. As a consequence of the 7am model run I was planning to increase releases from Wivenhoe Dam to 1,250m<sup>3</sup>/s by about 2pm.”*

91 Mr Ayre’s supplementary statement continues on at paragraph 36 to state:

*“I note from the Schedule to my first statement that by 8am on Saturday Wivenhoe Dam was within the parameters of strategy W3 because the lake level was slightly above 68.5m AHD and Wivenhoe Dam was releasing above the naturally occurring peak flow at Lowood.”*

92 During oral evidence in April 2011, Mr Ayre stated that W3 had essentially been engaged by Mr Ruffini at 5am when the decision to take releases to 1,250 cumecs by 2pm was made.<sup>43</sup>

93 If a conscious decision was not required and the Flood Engineers didn’t think it was needed, they had no reason to write the Flood Event Report pretending they had that level of consciousness at the time. If they had no reason to do so it is more likely that such a construction of the Report is either strained or a product of a poor choice of words but in no case a result of a deliberate decision to deceive.

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<sup>43</sup> T 155 L 40

**EVEN IF A CONSCIOUS DECISION WAS REQUIRED, THE PROCESS ADOPTED BY THE ENGINEERS IN PREPARING THE MARCH REPORT WAS NOT DISHONEST OR INTENDED TO MISLEAD**

94 If the general proposition by Senior Counsel assisting is wrong, then the specific allegation cannot be maintained.

95 However on the assumption that the Manual of Operational Procedures did require a conscious decision to move to W3,(which is denied), it is submitted that the process adopted by the Engineers in writing the Flood Event Report:

(a) did not imply or state that a conscious decision was made: and

(b) was not dishonest or intended to mislead or persuade a reader that the flood engineers had consciously made such a decisions.

**The Flood Event Report did not imply or state that a conscious decision was made**

96 In our submission the Flood Event Report did not so report or record.

97 Did it sometimes use language that if reviewed pedantically was inappropriate? Maybe. It is said that W 3 was “adopted”. An ordinary meaning of that word is to “choose”. However would an ordinary reader not a pedant know what was meant? In our submission the answer is yes. What is meant was that the objectives imposed under W3 were in place at that time and acted upon. On any fair reading of the facts and undisputed by any expert - that was the truth.

98 It is also suggested that the choice of the words W 2 was “bypassed” or that an “attempt was made to transition to W2” implied a deliberate and active choice. It might in some circles. But as a matter of fact, W2 was bypassed. It was bypassed by the earlier choice of the release rates and when 68.5m was reached.

99 However, in our submission the use of those expressions was not intended to imply that there was conscious decision so to do. This is a reading which might very superficially be made but does not bear scrutiny.

100 Even if the choice of language did so imply, in our submission it does not follow that this was intended as a result of a criminal conspiracy to mislead. At worst, it was a simple mistake using an auxiliary verb (was) and a past -participle (adopted) when other language and grammar might have been chosen.

101 On the strength of a less than perfect understanding of the choices available under the Manual of Operational Procedures and a pendant’s view of language it would be wrong to impugn the character of 4 men.

- 102 It is necessary to explore how unlikely it is that these 4 engineers had first to have such a forensic knowledge of the construction of the Manual of Operational Procedures to arrive at a single view of the meaning.
- (a) The flood engineers are highly qualified professional engineers;
  - (b) Secondly, if there was a conspiracy, the engineers must have concluded (wrongly in our submission) that every W strategy variation must involve a conscious decision.
  - (c) Thirdly, they must have each agreed that this was not done;
  - (d) Fourthly, they must have then all agreed to let Mr. Tibaldi write a false report; and
  - (e) Fifthly, left no trace of the urgency that must have been needed to ensure everyone's individual contribution to the Report was not in conflict; and
  - (f) Sixthly, they must have determined to have made false statements and give false evidence.

**The process engaged in by the engineers in preparing the report was necessarily a reconstruction, but a reconstruction where the engineers have sought to accurately report on the Flood Event.**

- 103 It is central to the theme implicit in the questions of Counsel Assisting that the Flood Report was a reconstruction, or a fiction. It was likened to putting a bet on a race once it had already run.
- 104 A 'reconstruction' can have different meanings. One arrives at what the person *actually* believes happened, the other arrives at what a person believes *should* have happened.
- 105 As Mr Tibaldi stated in his evidence, the task that he undertook in preparing the flood report was trying to write what actually occurred. He honestly believed that W3 had been applied from 8am Saturday 8 January. <sup>44</sup> Clearly, all of the engineers honestly believe that W 3 was applied from 8am on Saturday 8 January 2011. The evidence bears this belief out.
- 106 Operational strategies under the Manual are dictated by objective facts. The Flood Report is constructed by reference to these objective facts. The strategies used during the Flood Event are an objective fact. It is a matter of objective fact that the lake level had exceeded 68.5m, and that releases from the Dam had exceeded the

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<sup>44</sup> T5159

down stream naturally occurring peaks. As a matter of objective fact, strategy W 3 was the applicable strategy from 8.00am on Saturday 8 January 2011.

107 The Flood Event Report is a document that has been written by engineers, who are not expert report writers. It is 1100 pages of analysis of data, and explanation of what that data means in laymans terms.

108 That task had to be completed in only 6 weeks, and whilst flood operations were continuing. That there are aspects of the Report that could be improved is understandable, considering the tight timeframe and the fact that the engineers were required to prepare it whilst flood operations were continuing. Mr Ayre in his first statement (exhibit 17) suggested that more time be available to produce the reports.

109 The January 2011 Flood Event was on a much larger scale to previous events (such as the March 2010 event, the October/December 2010 event, or the 1999 flood events).

110 However, as the report was likely to be read by people other than experts experienced in hydrology, an attempt has been made to explain that data in the Flood Event Report. This process had not been necessary for previous Flood Event Reports, as the reading audience was not likely to extend beyond those with the technical capacity to comprehend and interpret the data.

111 By necessity, the Report is a post -event document. That is demonstrated by the fact that it is required to be submitted to the Chief Executive 6 weeks after the flood.

112 The drafting period for the Flood Report included 21 drafts and it was a lengthy exercise.<sup>45</sup>

113 The report addressed 324 hours of flood.<sup>46</sup>

114 The process involved in preparing the flood report was necessarily a reconstruction, but it wasn't a dishonest reconstruction. Mr Tibaldi explained in his evidence *"I wasn't there for extended periods and... it was a reconstruction certainly."*

115 Mr Tibaldi explained the manner in which he undertook the task:

CALLAGHAN: And were you concerned, for example, that the report recorded things like the transition of strategies under the manual at the right time?

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<sup>45</sup> T5023 Lines 10-20

<sup>46</sup> T5025 Line 20

TIBALDI: Yes, I tried to match the strategy transitions against the data that was available to me. I just made conclusions based on that data as to when strategy transitions had occurred.

116 The focus on the data, to demonstrate the strategies used during the flood event is the preferable manner of reporting the flood report.

TIBALDI: "It is just that every one has different recollections but the only thing that really – you know, gives you the truth is the facts about what occurred, because they're undeniable. Like, anyone can look back with a recollection on something and say this happened or that happened and you might have conflicts, but if you look back at the facts, and the facts are in the releases, the lake levels, the river flows, the rainfall, the Situation Reports which are written, the logs, directives, all that stuff, you can work out what's occurred."<sup>47</sup>

117 Mr Tibaldi explained to the Commissioner that his process when writing the report was to complete a draft: Mr Ayre and Ruffini weren't available; they had other commitments.

"I think if we'd all been available, the principal author of the report would have been Mr Ayre .... unfortunately, they weren't available. ...the second point is that in mind, it is not a great process to be sitting around sort of throwing in ideas and then me go away and try and write the report. I think you have got to start with the facts you have got to start with what you definitely know. That's my view."<sup>48</sup>

118 The suggestion that the better approach would be simply to ask the engineers about what strategies were in place at particular times is not in our submission correct:

CALLAGHAN: It didn't strike you that they might definitely know which strategies they were in at given times?

TIBALDI: Well how do you remember – how do you remember the event? How do you remember 14 days? ...I am not over dramatising what occurred, but it was – it was an emotional time and lack of sleep ... even straight after the event you're trying to remember back

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<sup>47</sup> T5067 L 50 – 506 L 12

<sup>48</sup> T5067 L 50 – 506 L 12

what's occurred over a 14 day period. You're only there for snapshots of that. How do you remember that?<sup>49</sup>

119 Mr Ruffini's evidence is also of relevance and demonstrates that the manner in which the report was written was not a dishonest process. Mr Ruffini explained that the preparation of the Flood Event Report was a "joint effort", and that he came in late on the end of the review. In explaining that review process he outlined the process that he used:

RUFFINI: I used the information that was down there to try the spread(sheet) – you know, all the information that John (Tibaldi) had put together to try and to try and inform myself about what the state of mind I was in when I was making those decisions. In the absence of having written it down, you know, in the absence of explicitly having written it down, that's what I did.<sup>50</sup>

120 It is unrealistic and illogical to suggest that the best place to start a report as to the strategies used during a flood event, (which strategies are determined by reference to objective data) might be to start with the piecing together of the recollection of the flood engineers. If that were so one would think Counsel Assisting would put on some expert evidence to support it, or at the very least ask the question to one of the independent experts. No such question was asked.

121 Mr Ruffini also made it clear that the information in the draft report was reviewed by him to ensure that he believed that the Report was accurate or not:

RUFFINI: ...The information that was available at the time was all assembled in to one location. When I was reviewing that, I looked at the spreadsheets and the things that I was using at the time when I was making those decisions and came up with my own assessment as to whether I believed that was accurate or not... all of us would have discussed it at some stage.<sup>51</sup>

122 Mr Ruffini said that he would have told Mr Tibaldi "that matches my recollection."<sup>52</sup>

123 Mr Ruffini further described to the Commissioner the process by which the flood event report was prepared.<sup>53</sup>

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<sup>49</sup> T5076 L 30

<sup>50</sup> T5399 L18-25

<sup>51</sup> T5399 L40-50

<sup>52</sup> T 5414 Lines 10-50

<sup>53</sup> T5418 Lines 35 - 55

RUFFINI: “ ... at some point when the draft was reasonably mature ... the process was we’d go into the flood room ... there was a computer with the draft document on there, ... because to review it properly, you also needed all that other material that I spoke about. So effectively you really needed to be in the flood control centre so you had access to all that relevant material. ... when I did it, I would open it up, I would look at what he had written and then I would check in terms of all that relevant data to make sure the numbers and things were right, and then ... I’d go through the logic, have the manual there and say does that sort of – is that correct in as much 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 on. So that’s what I did.”

124 Mr Malone said:

Callaghan: You knew how he was going about the report? You knew what his methodology was, to go back and look at all the data and make sure that strategies, changes of strategies were entered at the times when the data suggested that they should have been? You knew that was his methodology?

Malone: He was going through the logs and everything, like trying to make sure it was all - he gleaned that was - that's what happened.

125 Mr Tibaldi explained that he used words like “adopted” or “used” or “transitioned” or “applied” interchangeably. There is no dishonest intent.

TIBALDI: Discussions yesterday about the use of individual words like “adopted” or “used” or “transitioned” or “applied” to me they are just interchangeable, and that’s just the way I feel about it. I am not a professional report writer. I have written that report the best I could. You know, you can say, OK, I used “adopted” there but in another place I have used “transitioned” and we can talk about those individual single words, but it is what it is.<sup>54</sup>

126 Mr Tibaldi rejected any suggestion that the Flood Report was in any way intended to mislead. His intention was clearly to present the facts:<sup>55</sup>

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<sup>54</sup> T 5078 Lines 7-14

<sup>55</sup> T5080 Lines 29-55



TIBALDI: We've looked at data, at certain times required a strategy, that's the strategy that was used. That's how it is.

CALLAGHAN: You've done that all after the event?

TIBALDI: How could you do it before the event?

CALLAGHAN: Well, how about during? That's all that's suggested, that you do it during?

TIBALDI: Come to the flood room, even an event like, you know, this week, and just see how busy people are in the flood room.

CALLAGHAN: Too busy to look at a copy of the manual?

TIBALDI: Of course we're looking at a copy of the manual and of course we're looking at release rates and things like that, but in terms of writing the report, I don't think you can write it during the event.

CALLAGHAN: No, I'd accept that.

TIBALDI: Good.

CALLAGHAN: But the report, I would suggest to you, was calculated to convey an impression because you were afraid of what people would think if they knew that there had been no choice of strategy during the event?...

TIBALDI: Look, you know, I disagree with you. That wasn't my intention. My intention was to present the facts. If because of the way I have written it you feel it is not that way, I'm sorry, but I can't agree with you and I can't agree that was my intention.

127 The process adopted by Mr Tibaldi in preparing the various drafts of the Flood Report was comprehensive and intended to report only the facts. Mr Tibaldi explained in evidence.<sup>56</sup>

- (a) That he gathered all the records that he could find, "basically everything that's in the Appendices of the Flood Report"
- (b) Based on that data, given that recollection of actual events wouldn't be good, even soon after the event, "you can't rely on memory in those situations". He went back and looked at the facts.
- (c) He wrote down, based on those facts, what he believed to have occurred.

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<sup>56</sup> T5159 Lines 35 - 60

- (d) He distributed it to the other people that were involved “and they made an assessment as to whether it was accurate or not”
- (e) The other people did recall certain things that they would have drawn to his attention and he would have made the changes accordingly.
- 128 All of the flood engineers confirmed under oath that they endorsed the relevant contents of the flood report.
- 129 When asked by Mr O’Donnell QC whether the “reconstruction” was in the “Sherlock Holmes” sense of solving a crime, or whether it was a working out of what should have occurred, whether or not it did occur, Mr Tibaldi stated:
- TIBALDI What I was trying to write was what actually occurred. That was in my mind.
- O’DONNELL And did you honestly believe that as from Saturday morning at 8:00am the flood engineers had actually applied W3?
- TIBALDI That was my belief. Unless I was presented with evidence to the contrary, I was not – could never be – recall being presented with evidence to the contrary so that was my belief when I was writing it.
- 130 Those with knowledge of event reports would expect the flood report to have an element of reconstruction from the data. For instance, in questioning Ms Wilson SC asked Professor Apelt to make an assumption that the strategy is based on a reconstruction of events:
- APELT: Well, that’s really the way 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.”<sup>57</sup>
- And:
- WILSON: 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?
- SHANNON: 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

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<sup>57</sup> T5732

can look up to the heading of that requirement and it will say what strategy that falls under.

131 It is also important to note the process adopted by the independent experts when reviewing the draft Flood Event Report which bears a striking resemblance to the process adopted in the first place:

(a) Prof Apelt said:

WILSON: So was that the information that you accepted in doing your analysis, that W3 was triggered on 8 a.m. on the 8th of January?

APELT: Well, not just from that statement

WILSON: Engaged, sorry, engaged?

APELT: Not just from that statement, there's a - in other sections of the report there's a whole - tables of information about lake levels and so on, and times, and so when I was looking at that I would consult the - all of that information to decide for myself were the conditions as summarised there, and so it's - as indicated there, it's a question of the lake - the dam level, and also the matter of having to go to W 3 because W 2 was not available, so I satisfied myself that in the document there was information that detailed - that supported it. When a strategy is engaged there are primary considerations?

WILSON: Yes.

APELT: And that is the primary - that is the primary consideration that the dam operator must have

WILSON: Yes.

APELT: when engaging in that strategy?-

WILSON: Yes. And part of your task was to determine, was it, that whether the right strategy was being used at the right time?

APELT: Yes.

WILSON: Now, in preparing your report did you accept that the engineers moved to strategy W3 at 8 a.m. on the 8th of January?

APELT: Yes, I had no reason to question that

WILSON: And is that

APELT: from the information I had, mmm.

WILSON: And is that because that is what is in - that is what is at page 13 of section 2?

APELT: No, no, it's as I said, I consulted - in other parts of the report there's - for example, I think it might be section 9, there's a list of dam levels, inflows, the projected dam levels from the modelling and so forth, so I - I consulted all of that, including going back to the model results, before I was satisfied that that was a correct state - that it was appropriate for them to do that.<sup>58</sup>

(b) Len McDonald said

COMMISSIONER: I was interested in your sources and I think you are telling me it's the objective evidence and also what you can discern about what they were talking and thinking about from the materials supplied to you. Is that a fair summary or not?

McDONALD: It's more on the objective evidence because if I wanted to see what they were talking about, I would have to go to the appendices and study those closely, which I didn't do.<sup>59</sup>

(c) Greg Roads said:

WILSON: And you looked at the data and paid particular attention to the data in looking at your review?

ROADS: Yes

COMMISSIONER: Was your basis to look at what the strategies had to be at given times by reference to the lake level, among other things, and to see whether what they did was consistent with having been in those strategies; as opposed to looking at what their state of mind actually was?

ROADS: I have no idea what their state of mind was, and I can't really report on that. I look at it what I would do. I'm a flood modeller. I look at all of the model runs and when they have done them and when they reported them. If you look at the model runs and pick any day, any of those scenarios, you look at - you put in - you know, whether you use forecast rainfall or not, I looked at all the

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<sup>58</sup> T5727, Line 55 to T5728, Line 38

<sup>59</sup> T5571, Line 1

forecast rainfall plots. At any particular point in time, you could look across that chart and see that – which objectives were met. So it's almost like a reset of your mind whenever you do a model run to check whether your primary objectives are met. So I look at that model run, say the run that was done at 2 o'clock on Saturday, you do the run, you use forecast rainfall, you see that the peak water level in the dam is going to reach X, and using that maximum outflow that the models are predicting, whether - what is going to be the flow at Moggill and at Fernvale. If you look at that and you say the flows are lower than the 3500 or 4000, tick, your primary objectives are met ; then it comes back to looking at your secondary objective.<sup>60</sup>

And:

WILSON: If you assume that was the methodology, would that cause you any question - would that cause you to ask any further questions about whether W3 was engaged at 8 a.m. on the 8th?

ROADS: Look, I can't tell you whether they actually had a thought process that they engaged W3 at that particular point in time. I can't do that because I wasn't them. Section 2, in my view, is a summary, what happens, how they put it into a format that is digestible to the public. 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 W 3 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.

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<sup>60</sup> T5768, Line 42 to T5760

**The engineers would not have been party to a flood report that dishonestly asserted that W3 had been in use if they knew it had not been**

132 All of the flood engineers have given evidence that they would not be part of any flood report which dishonestly asserted that W3 had been in use if they knew it had not been.

133 On this topic, Mr Malone strongly denied any such suggestion. Mr Malone said:<sup>61</sup>

*“Most people know me as a very honest person, and to suggest such a thing impugns my honesty and I take great exception to that”*

134 Mr Ruffini also confirmed under oath that he would not be a party to a flood report which asserted a strategy had been used, knowing it had not been used.<sup>62</sup>

135 Mr Ayre denied that he had in any way conspired with the flood engineers to manipulate the facts, and affirmed that the flood report was correct and was not intended to mislead in any way.<sup>63</sup>

136 Mr Tibaldi stated, under oath, that in writing the report that it was his intention to present the facts and denied that was dishonest or calculated to convey an impression.<sup>64</sup>

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<sup>61</sup> T5369

<sup>62</sup> T 5450

<sup>63</sup> T5992 Lines 50-60

<sup>64</sup> T baldi at T5080 L 45 – T5081 L 5.

## OPERATIONAL COMPLIANCE – STRATEGY W3 WAS USED

- 137 It is submitted that the primary consideration of protection of urban areas under strategy W3 was actually used and achieved over the weekend of Saturday 8 and Sunday 9 January is demonstrably correct because:
- (a) this was achieved in the opinion of all independent experts, who all agreed that the releases were reasonable and appropriate for strategy W3;
  - (a) the releases made were consistent with achieving this objective;
  - (b) it is able to be demonstrated if any releases were inconsistent with achieving this object and no such evidence is produced;
  - (c) it is wholly consistent with the evidence of consciousness that protection of urban areas needed to be prioritized.

### The releases were appropriate and reasonable for strategy W3

- 138 There is a substantial body of evidence that demonstrates that the releases made over the weekend were appropriate for strategy W3.
- 139 Mr Ayre confirmed his view that, on the assumption that W3 was being applied on Saturday and Sunday, the rates of release were appropriate.<sup>65</sup>
- 140 Mr O'Donnell QC explored the facts that allowed Mr Ayre to give this conclusion during questioning.<sup>66</sup>
- 141 Mr Tibaldi expressed the same conclusion and outlined the reasons for his opinion during examination by Mr O'Donnell QC.<sup>67</sup>
- 142 That the release rates chosen by the engineers was reasonable and appropriate over the Saturday and Sunday is agreed to by all of the experts who have given evidence in this round of hearings, including Mr. Len McDonald, Professor Colin Apelt, Dr Greg Roads and Mr. Mark Babister.
- (a) Mr McDonald agreed that the rates of release decided upon by the engineers were appropriate to operating the dam under W3 on those three days: *"...given the circumstances obtained at the time and the mind set of the flood engineers. So I am not looking here at hindsight when we will know what has happened, I'm looking at how they might reasonably perceive the world at the time."*<sup>68</sup> Mr McDonald went on to state "I thought

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<sup>65</sup> T 5281.

<sup>66</sup> T 5278 - 5281

<sup>67</sup> 5139 - 5140

<sup>68</sup> T5569 Lines 8-13

(the rates of release) were reasonable because the lake level was flat or in fact declined slightly, there had been little rain – I’m talking about primarily the Saturday – there was forecast rain but the forecast was actually much lower than the rain that occurred...”<sup>69</sup> Mr McDonald said that the engineers were operating “fairly reasonably” on the Sunday as well because the lake level was actually declining slightly, there hadn’t been a deal of rain (with some forecast rain) and if they went above 2,100 cumecs, outflow would have exceeded inflow up until noon on Sunday 9 January.<sup>70</sup> Mr McDonald thought that the engineers were operating reasonably over the three days.<sup>71</sup> In forming this opinion, Mr McDonald took into account the objective evidence in the Flood Event Report.<sup>72</sup>

- (b) Mr Roads stated that the only real thing that’s important with the manual is how the engineers actually operated the dam and that he had satisfied himself that the primary objective was achieved every time the flood engineers did a model run.<sup>73</sup>
- (c) Mr Cooper formed the overall view that the decisions of the flood engineers were appropriate by reference to the information available to them, and that they had done a good job. That remained Mr Cooper’s view.
- (d) Mr Apelt agreed that the decisions made by the engineers as regards releases was appropriate based on the information available to them, on the basis that they were operating under W3 and giving primary protection to urban areas against the risk of inundation.<sup>74</sup>
- (e) Mr Babister agreed that with the information available to the engineers at the time and operating under the strategies of the manual, the management of Wivenhoe was utilised very close its maximum ability to protect against urban inundation and agreed that it was his view that the results the flood engineers achieved in managing Wivenhoe showed that they had done a good job.<sup>75</sup>

143 That it would not have been reasonable or appropriate to immediately “ramp up” releases on Saturday is expressly dealt with by Mr Babister in his report dated 3 February 2012. At paragraph 27 of his report, Mr Babister concludes:

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<sup>69</sup> T 5569 Line 20  
<sup>70</sup> T 5569 Lines 40-50  
<sup>71</sup> T 5570 Lines 1-20  
<sup>72</sup> T5571 Lines 1-20  
<sup>73</sup> T 5771 L 7  
<sup>74</sup> T5735 to T5736  
<sup>75</sup> T5900



*“WMAwater consider it is unreasonable to consider release scenarios (such as Scenario G1 and G2) that require dam outflows to be escalated above inflows for a significant period as plausible alternative courses of action. To enact such strategies would have required foresight beyond that obtained from a measured consideration of weather forecasts.”*

144 Mr Babister referred to ramping up releases as “highly risky” and a “massive gamble.”

O'DONNELL: And if they'd done that they, in effect, in the conditions that they were in at the time, they would have sent down, effectually a flood pulse

BABISTER: That's right

O'DONNELL: down the river?

BABISTER: and - and really not - not consistent with the manual because the manual still says that you've got to try and reduce flood peaks.<sup>76</sup>

And

O'DONNELL: 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?

BABISTER: 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.<sup>77</sup>

**The releases made by the engineers were not inconsistent with the use or application of strategy W3 and were consistent with the objective of protecting urban areas from inundation.**

145 Once it is accepted that the releases from the dam were appropriate and reasonable for strategy W 3, it follows that the decisions made by the engineers were reasonable and appropriate for meeting the primary consideration of protecting urban life from inundation under strategy W 3. Operational compliance has been demonstrated, even if the engineers cannot now say that the labels were consciously applied at those times.

146 No finding should be made that the engineers did not achieve the primary consideration of protecting urban areas from inundation, as the decisions made by

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<sup>76</sup> T5812 L 16

<sup>77</sup> T5896

the engineers about releases have protected urban areas to the maximum extent possible in the circumstances.

**The Engineers have demonstrated an awareness of the need to consider and prioritize the protection of urban areas.**

147 There is clear evidence of the impacts of releases upon urban areas being consciously considered before the lake level reached 68.5m.

- (a) The Situation Reports demonstrated that the local Councils, including the Brisbane City Council, had been advised of the potential for gate operations. (Situation Report 1,2,3,4, 6, and 8)
- (b) In Situation Report 3, releases of 1,200 cumecs were flagged and were described as “similar but slightly smaller to recent events”. This is clearly a reference to the experience and knowledge gained during October 2010.
- (c) By Situation Report 6, issued at 17.57 on Friday 7 January 2011, a paragraph was included in the Situation Report that there had been discussions held with the Brisbane City Council and the BoM with all agencies agreeing that the combined flow in the lower Brisbane River will only add 50 to 100 mm to the recorded water levels in the City Reach of the Brisbane River. Clearly, the urban impact of releases was being considered.
- (d) Situation Report 7 demonstrates that there had been further discussion with the Brisbane City Council regarding the impact of releases at the city reach of the Brisbane River. The BCC were prepared to accept Seqwater and the BoM's estimate.

148 Once the lake level had crossed 68.5 metres, the Situation Reports continue to demonstrate that the engineers consciously considered the impacts of the releases on urban areas:

- (a) Directive 4 was issued at 8.15am, immediately after the lake had crossed the 68.5m mark. The directive states “at the completion of these gate operations the dam will be releasing 1,247m<sup>3</sup>/s. The issuing of this directive is inconsistent with strategy W2, as it was further increasing releases above the naturally occurring peaks”.
- (b) Shortly after, at 11am, Somerset Directive S2 was issued. That directive states that the implementation of Strategy S2 “*is aimed at maximizing the benefits of the mitigation storage in both Somerset and Wivenhoe Dams.*”

This demonstrates that the Manual was part of the real time consciousness of Mr Ayre and that he was aware of changing strategies based on lake levels

- (c) Situation Report 9 issued at 14.22pm on Saturday 8 January 2011 includes for the first time the Dam Safety Regulator. Mr Ayre had including the dam safety regulator in the first Situation Report he prepared on that Saturday 8 January at 14:22 hours because as he said having looked at the 11:00 am BOM 4-day outlook he appreciated that this particular event could actually become somewhat larger and prudence dictated that the regulator be advised.<sup>78</sup> This consciousness would not have been elevated if the event looked to be a “fresher” which remained within the W1’s.
- (d) By Situation Report 9, combined flows of 1,600 cumecs in the Brisbane River were planned. Past experience had shown that this was the point where urban areas commenced to be impacted. Again, the impact of these releases in the City reaches of the Brisbane River was only expected to add 50-100mm.
- (e) In the 5.53pm Situation Report on Saturday, the lake level was only 68.65m and rising slowly. A paragraph was added to this Situation Report dealing with potential forecast rainfall, and the intention to maintain releases below 3,500 cumecs. Again, the impacts of releases that were currently being made in the City Reaches of the Brisbane River was only expected to add 50-100 mm.
- (f) By Situation Report 10 issued at 6.15am on Sunday 9 January, the lake level was again falling slowly, but the engineers maintained releases to achieve a flow of around 1,600 cumecs in the Brisbane River.
- (g) By Situation Report 11 issued at 5.51pm on Sunday 9 January 2011, the engineers noted the lake was rising again, and noted the strong possibility that the bridges at Fernvale and Mt Crosby Weir would be closed.
- (h) By Situation Report 12 issued at 9.04pm on Sunday, the engineers stated there had been very heavy rainfall in the last 6 hours, and that the combined flows in the lower Brisbane would be limited to 4,000 cumecs. The Situation Report states that all bridges will be closed.

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<sup>78</sup> T 5285 L10

- 149 Clearly, it is submitted, the engineers have demonstrated that they actively considered urban areas, and were making releases that were appropriate to protect urban areas from inundation. This evidences the application of a mitigation strategy consistent with W3 that provided optimum protection to urban areas;
- 150 All of the releases were in correct compliance with the Manual of Operational Procedures operating within W3.

**DOCUMENTS RELIED UPON AS PROVING THE ALLEGATION THAT W3 WAS NOT ENGAGED UNTIL AT THE EARLIEST 3.30PM ON SUNDAY 9 JANUARY 2011**

- 151 Counsel Assisting appears to rely upon 3 primary documents produced by the engineers as being inconsistent with the engagement of W3 on Saturday 8 January and Sunday 9 January 2011.
- (a) The 5.53pm Situation Report on Saturday 8 January 2011;
  - (b) The 3.30pm event log entry for the engineers conference on Sunday 9 January 2011.
  - (c) The 9.04pm Situation Report on Sunday 9 January;
- 152 Whilst the arguments may be superficially appealing, those situations reports and the event log entries cannot be considered in isolation from the context within which they were written.

### The Situation Report at 5.53pm Saturday 8 January

- 153 A Situation Report was issued at 5.53pm on Saturday 8 January 2011 (exhibit 1047)
- 154 That Situation Report includes a paragraph that has been the subject of much focus and attention during the resumed hearings between 2 and 11 February 2012, in particular the paragraph that reads:

#### ***Forecast Scenario – Based upon mid-range rainfall forecasts.***

*Assessments have been undertaken to determine possible increases to releases given the high likelihood of significant inflows in the next few days. The interaction with runoff from the Bremer River and Warril Creek catchment is an important consideration as the magnitude will require the application of Wivenhoe Dam flood operation strategy W2 (Transition to strategy between minimizing downstream impacts and maximizing protection to urban areas).*

*Projections based upon the forecast rainfalls suggest flows of up to 1,200 m<sup>3</sup>/s will emanate from the Bremer River catchment. If similar rainfall magnitudes occur in the Upper Brisbane and Stanley Rivers then increased releases may be required from both Somerset Dam and Wivenhoe Dam. Preliminary projections suggest that such a forecast will extend the release duration until next Saturday 15 January, but mid-Brisbane River flows will be kept to a maximum of 1,800 m<sup>3</sup>/s. However, if falls are greater than those forecast releases from Wivenhoe Dam may need to adversely impact Mt Crosby Weir Bridge (1,900 m<sup>3</sup>/s) and possibly Fernvale Bridge (2,100 m<sup>3</sup>/s) but will be maintained below 3,500 m<sup>3</sup>/s).*

### Lead up to the Situation Report at 5.53pm

- 155 This paragraph should not be misinterpreted by considering it in isolation from the information that was available to Mr Ayre over the course of the Saturday.
- 156 The events that had occurred in the lead up to the 5.53pm Situation Report informs the construction of the words in that document.
- 157 Mr. Ayre had been conducting modelling at about 3pm on Saturday 8 January 2011.<sup>79</sup> The hydrograph results are contained at page 224 of Appendix K to the Flood Event Report.<sup>80</sup>

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<sup>79</sup> Paragraph 48 of Rob Ayre's Supplementary Statement (Exhibit 18).

- 158 The model showed a second major inflow into Wivenhoe Dam as a result of the three day rainfall that was predicted.<sup>81</sup>
- 159 The reference in the heading to “mid-range forecast” means a 72 hour, or three day rainfall total forecast, as opposed to the QPF which is a 24 hour rainfall forecast.<sup>82</sup>
- 160 Under the heading “Forecast Scenario” it states “projections based upon forecast rainfalls suggests flows of up to 1200 cumecs will emanate from the Bremer River.”<sup>83</sup>
- 161 A flow of 1,200 cumecs in the Bremer was very different to the current situation where most of the rain had been in the upper Brisbane and Stanley. At this stage, the Bremer and the metropolitan areas hadn’t received much rain. At that stage, the flows in the Bremer were only in the order of about 200 cumecs.<sup>84</sup>
- 162 The predicted future flow of about 1,200 would mean that you would potentially reduce flows out of Wivenhoe to allow the peak to pass and then “piggy back” on that peak, to elongate the peak of the hydrograph.<sup>85</sup>
- 163 At the time of the model, the lake level was only above 68.5 by 150mm, and releasing 1250 cumecs per second. If releases exceeded inflows, there was a good likelihood that the lake would fall back into W1.<sup>86</sup>
- 164 The lake level was expected to drop below 68.5 by sometime late Sunday.<sup>87</sup> This is demonstrated by the modelling contained in Exhibit 524, attachment 34.
- 165 The gate operations spreadsheet allows the engineers to model, or estimate when the lake would fall back below 68.5m.<sup>88</sup>
- 166 If the rain occurred as forecast, with the predicted inflows on Tuesday or Wednesday, the lake level would then increase again, and would return above 68.5m.<sup>89</sup>
- 167 As a consequence of the lake level crossing 68.5, the Manual dictates a change in strategy, with a switch to W2 or W3 as appropriate if the forecast came to pass.
- 168 With the significant modelled flows for the Bremer, that switch would almost certainly have to be made to W 2, as the releases would piggy back on the back of

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<sup>80</sup> T5274.

<sup>81</sup> Exh bit 24, Appendix K, Page 224

<sup>82</sup> T5274.

<sup>83</sup> T5275.

<sup>84</sup> T5275

<sup>85</sup> T5275

<sup>86</sup> T5276

<sup>87</sup> T5275

<sup>88</sup> T5275

<sup>89</sup> T5275

the elevated peaks emanating from the down stream tributaries, in particular the Bremer.

**“Will require the application of” W2” does not mean that at that time they were in W1.**

169 The Situation Report issued at 5.53pm on Saturday 8 January 2011 (Exhibit 1047) included the phrase “will require the application of ...strategy W 2” under the heading “forecast scenario.”

170 This is made clear with a proper reading of the paragraph. At that time, Mr. Ayre was clearly thinking of a future possible move if other events transpired “over the next few days”.<sup>90</sup> This is particularly so given:

- (a) river in-flows had peaked the night before;
- (b) the lake level had reached 68.68 but still very close to 68.5;
- (c) there was very little rain Saturday;
- (d) the lake level in those circumstances might drop to below 68.5 and hence into W1.
- (e) As predicated, the lake level did in fact fall, almost below the 68.5m mark. Between 5pm Saturday 8 January and 10am Sunday 11 January, the lake level fell from 68.65 to 68.53m, only 3 centimeters off the 68.5m threshold.<sup>91</sup>

171 Clearly, Mr Ayre had a proper basis for considering that the lake level would fall below 68.5m in the coming days. Following that, the 3 -day forecast predicted an increase in rainfall and if those matters came to pass, the lake level could be expected to again cross over the 68.5m threshold which would require move from W1 to W2 to enable the releases to be piggy -backed on to natural flood peaks. This is because, as is stated in the Situation Report, “Projections based upon the forecast rainfalls suggest flows of up to 1,200 m/s will emanate from the Bremer River Catchment.” Such a significant naturally occurring flow rate below the dam was a very different scenario to what had occurred over the course of the Saturday, where releases had already exceeded the down stream naturally occurring flow rate. In essence, the flood event was no longer dominated by inflows above the dam, but rather, flows from tributaries below the dam were predicted to dominate.

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<sup>90</sup> T 5187 L 49

<sup>91</sup> See Schedule 1C to Mr Ayre’s supplementary statement (exhibit 17A)



- 172 It is submitted that the use of the words “will require the application of Wivenhoe Dam flood operation strategy W 2” does not allow the inference to be drawn that Mr Ayre believed at that stage that they were at the time of the Situation Report in W1.
- 173 If that were the case, then one would expect the phrase to appear in a different paragraph not one dealing with a possible future occurrence. Clearly, as the paragraph in the Situation Report indicates, Mr Ayre was dealing with possible future events:
- (a) The heading deals with the “forecast scenario”;
  - (b) The forecast utilized is the “mid range rainfall forecast”, which is the 72 hour, or three day forecast.
  - (c) It deals with “possible increases to releases”
  - (d) It deals with the “likelihood” of inflows “over the next few days”
- 174 It is submitted that the paragraph in the Situation Report was merely the proper evaluation of possible future forecast rainfall and what might happen if those forecasts came to pass.
- (a) Mr. Ayre modeled this prospect during that afternoon.
  - (b) He used this model for a purpose. Its very existence must be given meaning.
  - (c) The only meaning is consistent with the possibility of this happening “in a few days” ie when the mid range forecast comes to pass.
- 175 Whilst not clearly expressed, it is submitted that the 5.53pm Situation Report does not allow the inference to be drawn that at the time of it being issued, Mr Ayre thought that W1 was being applied, having regard to:
- (a) The objective facts that were available to Mr Ayre at the time of issuing the Situation Report (ie that the lake level was above the 68.5m threshold, albeit only just, and that there had been no significant rain, and that the lake level was expected to fall;
  - (b) The modeled peak inflow in a few days time (see Appendix K);
  - (c) The demonstrated expectation that the forecast rainfall would result in flows below the dam of up to 1,200m<sup>3</sup>/s from the Bremer.

- 176 The interpretation of the words in the 5.53pm Situation Report that has been advanced, namely that it indicates that strategy W 3 was not currently in place, ignores the proper context of the information contained in the report.
- 177 Indeed, all of the experts, when confronted with the objective facts that were prevailing at the time and available to Mr Ayre through his modelling (the anticipated drop in lake level and subsequent second peak with flows dominated by the Bremer) could understand the reference in the 5.53pm Situation Report in its proper context:
- (a) Professor Apelt agreed that the interpretation was conceivable, knowing the information that was available to Mr Ayre at the time.<sup>92</sup>
  - (b) Mr McDonald agreed that the author may have been contemplating a transition to W2 in a few days hence, if there was fresh rainfall as per the model.<sup>93</sup>
  - (c) Mr Shannon agreed that he could understand that if the inflows dried up on the Saturday and Sunday, and you drop back below 68.5<sup>94</sup>
  - (d) Mr Roads agreed that based on the longterm forecast rainfalls that the situation report was not contemplating an imminent transition to W2 but rather a transition to W2 maybe on the Tuesday or Wednesday.<sup>95</sup>
- 178 It is suggested by Counsel Assisting that Mr Ayre's explanation of the 5.53pm Situation Report was a 'recent invention'. It does not deserve this description.
- 179 Mr Ayre's detailed explanation for the meaning of the relevant paragraph in this Situation Report, provided in the resumed 2012 hearings is, it is submitted, the correct and more probable and reliable explanation.
- 180 During the resumed hearings, Mr Ayre explained that he was confused by the line of questioning in April 2011. He stated,
- "I think I may have been confused by that line of questioning, and I think it was a confusion between what the current situation was or what we were talking about in that forecast scenario."*<sup>96</sup>

181 In giving his evidence in April 2011, the following exchange occurred:<sup>97</sup>

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<sup>92</sup> T5740 L35

<sup>93</sup> T5575 L 1

<sup>94</sup> T5849 L50

<sup>95</sup> T5808 L20

<sup>96</sup> T5189 L 30-35

<sup>97</sup> T172 L 30 - 50

RANGIAH        So what I want to suggest to you is that your concern about downstream impacts that you express later on in that situation report were based on a mistaken assumption that you were still in the W2 strategy?

AYRE            I think the overall objectives of the strategies are reasonably consistent. I do acknowledge that I had inadvertently recorded strategy W 2 at that point in time but recognize that that wasn't correct, we had transitioned into W3 earlier in the day.

RANGIAH        Well, this situation report is a record of what you were actually thinking at the time that you wrote it?

AYRE            That's correct, yes.

RANGIAH        And what you thought at the time you wrote it was that you were still applying W2 strategy?

AYRE            The strategies, I think, are consistent between strategy W 3 and W2 in that context, yes.

RANGIAH        But did you think that you were applying strategy W2?

AYRE            At that time I would have, otherwise I wouldn't have put it in the situation report.

182        The questions that were asked of Mr Ayre during the hearings on 12 April 2011 were directed to the proposition that at the time the situation report was issued, Mr Ayre then believed that he was then in s trategy W 2. Mr Ayre answered those questions without at that time being referred to his model results.

183        It is submitted that Mr Ayre agreed with that series of questions, without at that time having drawn to his attention all of the facts that caused him to write the relevant passage in that part of the situation report dealing with the 'forecast scenario - based on mid-range forecast'.

184        During Mr Ayre's evidence in the resumed hearings, he gave a detailed explanation of the information that was available to him on the Saturday afternoon, namely:

- the lake level was falling; and
- the rivers were receding, and
- modelling had only just been conducted that indicated that there would be a further peak in a few days time; and

- That a further peak was expected to produce significant flows downstream, with 1,200 cumecs emanating from the Bremer.

185 Mr Ayre did refer to this modelling shortly after the above exchange with Mr Rangiah SC in his evidence in 2011:<sup>98</sup>

RANGIAH But was any modeling done on the basis of a significant increase in rainfall?

AYRE On the Saturday afternoon, I ran the three day forecast which was incorporated into appendix K of the Flood Event Report, which formed the basis of the situation reports, further assessments:

RANGIAH Does your situation report at that stage refer to that modeling on the basis of a rainfall increasing significantly?

AYRE: It is made on the basis of a three-day outlook.

RANGIAH Was that referred to, though, in your situation report?

AYRE Yes, I believe on page 19 where it is indicated, “forecast scenario”, “based upon mid-range rainfall forecasts”, and the mid-range there means the three-day outlook.

186 However, during the hearings in 2011, Mr Ayre did not have his attention drawn to whether those model results indicated that the lake level would fall below 68.5m, and be followed by another peak in a few days time.

187 It is submitted that Mr Ayre’s March 2011 supplementary statement makes it abundantly clear that the modelling that had been conducted was important to understanding the paragraph that was entitled “forecast scenario.”

188 In that statement, Mr Ayre set out the 5.53pm Situation Report in full, followed by an explanation that the information under the heading “forecast scenario” was an important point to note. Mr Ayre stated at paragraph 51 of his Supplementary Statement:

*“One important point to note from this situation report is the information under the heading “Forecast Scenario – Based on mid-range forecasts’. The models that I used in preparing the projections I refer to were based on 72 hour rainfall forecasts (I note that the 72 hour forecast models were*

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<sup>98</sup> T 174 Line 9 to 22

*included in Appendix K of the Wivenhoe and Somerset Dams Flood Report 2011).*”

- 189 Clearly, Mr Ayre conducted that modelling for a reason, and he endeavoured to explain the importance of that modelling as early as March 2011.
- 190 On careful examination of the modelling that was actually conducted, that modelling demonstrates an anticipated drop in the lake level, followed by a subsequent peak in rainfall and consequent peak in lake level. The Situation Report demonstrates that flows of 1,200 cumecs emanating from the Bremer were anticipated. This is far in excess of what the current naturally occurring down stream flows were.
- 191 It is submitted that Mr Ayre’s explanation provided in the resumed 2012 hearings is the more probable and therefore the more reliable explanation. His agreement in the 2011 sittings with the propositions suggested to him by Mr Rangiah were mistaken and made without all of the modelling results then and there being drawn to his attention.
- 192 It is perfectly proper for a witness to reconsider an explanation upon careful consideration of the topic, and where necessary, provide a more considered and probable explanation.
- 193 Counsel Assisting now argues that, as a matter of fact, at 5.53pm on 8 January 2011, the dam was operating in W1, and that the use of the words “will require the application of Wivenhoe Dam flood operation strategy W2” evidenced the dam being in W1 at 5.53pm.
- 194 Mr Ayre says that the whole Situation Report evidenced an awareness that the lake level was likely to fall, and if the three-day forecast came to pass, the lake would rise again and there would be significant flows in the Bremer. The move to W2 would be from W1 if the forecast came to pass in a few days time.
- 195 Mr Ayre’s responses to Mr Rangiah SC in April 2011 were to the effect that those words reflected his state of mind at 5.53pm, that they then were in W2.
- 196 This was simply an error on the part of Mr Ayre which has been corrected by a full consideration of the entire issue, including his modelling. To some extent Mr Ayre tried to do this at T174 on 12 April. Mr Ayre’s answers to Mr Rangiah in April 2011 can now be seen as wholly incorrect, in that the answers do not conform with either position; you cannot plan to apply W2 and yet at the same time be in W2.

**The 3.30pm Engineers Conference - “operating at the top end of W1 and bottom end of W2”**

197 On Sunday 9 January 2011, the engineers held a meeting at 3.30pm which is recorded in the Event Log at Exhibit 23 of the COI as the “Duty Engineer Conference.”

198 That entry states:

*“Duty Engineer Conference held at the FOC: Attended by RA, JR, TM with JT on conf phone. At this stage operating at the top end of W1 and the bottom end of W2. Storing approx 300,000 MI at present (above Wivenhoe) with an additional 500,000 MI expected to flow into the dams from rainfall on the ground. The rainfall system is currently in the N -E part of the catchment and expected to travel south over the next 24-36 hours according to the BoM forecasts. This has the potential to significantly increase flows in Lockyer Creek and the Bremer River, which potentially could close Fernvale Bridge and Mt Crosby Bridge and increase the risk of flooding in the Lower Brisbane. Releases from Wivenhoe Dam will be maintained at the current level of -1,400 cumecs. If required, releases from Wivenhoe Dam will be reduced to contain the flow in the Mid -Brisbane to 1,600 cumecs and 3,000 cumecs in the Lower Brisbane. At this stage it is anticipated that levels below 10.25 in Somerset and 72.5 in Wivenhoe can be attained”*

199 The event log is well recognized as being imprecise and incorrect in many respects. There is no transcript of the conference, so the exact words used cannot be known. The 3.30pm log entry is not a verbatim account of all that was actually discussed. The Commission should allow for the probability that in summarising this conversation for inclusion in the event log, the full context of the conversation has not been captured. The errors in precisely recording entries in the event log are now well known to the Commission.

200 However, even if one assumes that the entry accurately records all that was said (which seems highly unlikely), it provides no evidence that the flood engineers were not properly using strategy W3 at the time.

201 It is sought to be argued the phrase “operating at the top end of W 1 and bottom end of W2” means that in fact the engineers were not then and had not relevantly been operating in W3 at all.

202 But this is not so if one accepts this is not how the flood engineers communicate. The phrase, it is submitted, is simply a shorthand, or practical way of describing where the flood event was on the ground, rather than identifying with precision the formal strategy label applicable.

203 It is submitted that this entry is not of sufficient strength to allow the inference to be drawn that by referring to “operating at the top end of W1 and the bottom end of W2”, the engineers were not operating within strategy W3.

204 Of course, it is simply not possible to be in two strategies simultaneously. Mr McDonald described it as a loose bit of language, that he took to simply mean “we are about on the margin”<sup>99</sup>:

AMBROSE SC: So if the words that you were referred to in the event log, at 3.30 on the Sunday, said that they were operating at the top of W1 and the bottom of W2, then it's possible that those words mean something other than being simultaneously in two strategies?

MCDONALD: Yes, well, I would have thought maybe they mean that it's a loose use of language and “we are about on the margin”

205 Mr Shannon also was able to see that the language used was not intended to be taken literally in terms of an accurate description of the strategy that was currently in place<sup>100</sup>.

AMBROSE SC: It's fair to say that any flood engineer would know that you couldn't be in two strategies – W strategies simultaneously?

SHANNON: Absolutely.

AMBROSE: Even the most fundamental of flood engineers would know that you can't be in two simultaneously?

SHANNON: That's right.

AMBROSE: The statement there is more likely, is it not, in your view, to be understood to not mean that at all. They couldn't mean something as silly as that.

SHANNON: It's a nonsequitur, yes.

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<sup>99</sup> T 5568 Line 10

<sup>100</sup> T 5854

- 206 It's perfectly explicable as an explanation of the facts that the 2 bridges, Mt Crosby Weir Bridge and Fernvale, were in fact still open and it is still consistent with the fact that rural areas were not then being unduly affected. Both are statements of fact and consistent with the results of decisions made and not inconsistent with being in W3.
- 207 In terms of a shorthand description therefore it is perfectly accurate in terms of the objectives that were still able to be achieved.
- 208 But because the lake level was in excess of 68.5 (it was 68.61) there was never any belief that they were still in W1. They were and they knew they were in W3 because of the lake levels and the release rates were greater than the natural peak flows at low-level Moggill.
- 209 Whilst not expressed in precise language, the entry in the log demonstrates nothing further than that the lake level had only just crossed 68.5, but that lower level objectives were still able to be achieved.
- 210 It is loose language that was intended merely to indicate that they were on the margins.
- 211 None of the flood engineers took the reference as a literal description of the operational strategy as defined in the manual that was currently engaged. Rather, it appears, they all understood it as a loose description of the objective that had able to be achieved until that point in time, and the fact that the lake level had only just crossed 68.5.<sup>101</sup>
- 212 As was explained by Mr Malone, he took the reference to mean that they were operating at the top end of W1 and bottom end of W2.<sup>102</sup>
- 213 In his evidence Mr Ayre stated that
- “... what I took that to mean was we were achieving the top objective of strategy W1, that is to keep the high -level bridges open, and I took the bottom end of W2 to be meaning exactly the same thing, in reality; it is minimising disruption to downstream rural life.”<sup>103</sup>*
- 214 It is submitted that the reference in the event log entry of the 3.30pm conference is simply an inexact reference to the fact that the engineers had been able to achieve

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<sup>101</sup> Ruffini at T5403 L 1

<sup>102</sup> T5301 L 25 – 35

<sup>103</sup> T 5193 L 30



some of the lower level objectives until that time. Clearly, the 3.30pm conference contemplates that with the expected rain, that may no longer be possible.

215 It is clear that the engineers had a conscious appreciation of the potential that much more dramatic releases from the dam may be required.

216 Mr Malone was the engineer who actually worked the Sunday shift from 7am to 7pm. It is clear that he knew that the strategy was W3. Mr Malone explained in evidence that he knew what the lake level was because he received the 6am Situation Report, and that email tells you what the lake level is. He explained that the engineers get hundreds of emails during the event from all the dam operators which tells him what the water level is and what the gate settings are.<sup>104</sup> Mr Malone said that at that stage, as far as he was concerned, they were in W3.<sup>105</sup>

217 Whilst Mr Malone honestly and properly accepts that he can't recall thinking "oh, we are at W3"<sup>106</sup>, he would have appreciated the fact that he was in W3.<sup>107</sup> Mr Malone explained that they had managed the dam at just over 68.5, and agreed that that affected the strategy. As was agreed by Mr Malone, "it was just obvious that the lake had crossed 68.5".

218 As the situation developed on the Sunday, Mr Malone was forced to consider how the dam would be able to continue to protect the urban areas from inundation.

MALONE: My major concern on Sunday was how we were going to manage these expected huge volumes of inflows over the next coming days to minimize impacts of urban damage. That was the purpose of our job.<sup>108</sup>

219 Mr. Malone knew how serious the situation was. As Mr Malone commented, "that's why they called the meeting."<sup>109</sup>

220 At the beginning of Mr Malone's shift, the releases being made were about 1,330 cumecs. Over the period of that day, those releases were increased to about 1,500 cumecs by about 6pm.<sup>110</sup> Mr Malone explained that he expected that in the following days they would need to manage larger volumes, and that he was increasing the releases so that storage was available if the rain comes, without

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<sup>104</sup> T 5360

<sup>105</sup> T 5360

<sup>106</sup> T 5360

<sup>107</sup> T 5361

<sup>108</sup> T 5362 L 10

<sup>109</sup> T 5365- 5366

<sup>110</sup> T 5364

causing too much downstream damage too early.<sup>111</sup> Mr Malone was seeking to maximize the capacity within the dam without causing undue flooding.<sup>112</sup>

221 In the Situation Report that was issued at 5pm on Sunday, there is contemporaneous evidence of Mr Malone's intention. In that Situation Report (page 19 of Appendix E), under the heading "Wivenhoe Dam (full supply level 67m), the fourth line provides:

*"The current gate operation strategy will maintain flows of around 1,600 cumecs in the mid-Brisbane River for the next 24 hours"*

222 It is submitted that by increasing the releases over the course of the Sunday, Mr Malone was trying to strike an appropriate balance between not causing unnecessary urban inundation, and ensuring that storage in the lake was maximized if the rain did eventuate.

223 It is submitted that Mr Malone's actions demonstrate that combined flows were deliberately maintained at that 1,600 cumecs point in the Brisbane River. Because of the engineers' experience in dealing with the October 2010 flood event (where similar combined flows were achieved), the engineers had experience in knowing that such a release rate would start to impact upon ferry services, bikeways, low lying areas and some crossings.<sup>113</sup>

224 It is submitted that the 3.30pm conference was a clear recognition that flows that *would* impact upon urban areas were now in contemplation. Indeed, that entry in the event log refers to the fact that it was anticipated that a level below 72.5m in Wivenhoe Dam can be achieved. This is well within the range of W3, and towards the top of that range. Until that point in time, the engineers had been able to completely protect urban life, maintain Fernvale Bridge and Mt Crosby Weir Bridge, and keep the dam just slightly above the 68.5m threshold.

225 Whilst inexact language has been used, the event log entry does not, it is submitted, demonstrate that the engineers had been in W1 until that time. No reading of this entry allows a literal interpretation, that being that the dam was being operated in W1 and W2. This phrase, therefore, must mean something else (if it was an accurate record of what was said).

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<sup>111</sup> T 5364

<sup>112</sup> T 5364 - 5365

<sup>113</sup> Malone at T5365 L 30 - 50

- 226 It is submitted that when viewed in its proper context, the 3.30pm conference is simply a recognition that the engineers knew that combined flows would likely have to be increased to the upper limit of strategy W3.
- 227 This would mean that the lower level objectives within W 1 (that until this point in time were still partially being achieved) would have to be abandoned, and the lake level would no longer be at the W1 / W2/3 threshold point of 68.5m.

### **The 9.04pm Situation Report on Sunday 9 January 2011.**

- 228 This Situation Report can be found in Appendix E to the Flood Report at page 21.
- 229 At 9:00 pm a Situation Report was issued that includes the words *“the objective for dam operations will be to minimise the impact of urban flooding in areas downstream of the dam and, at this stage, releases will be kept below 3,500 m<sup>3</sup>/s and the combined flows in the lower Brisbane will be limited to 4,000. This is below the limit of urban damages in the City reaches.”*
- 230 Much attention was focused on the inclusion of this phrase, and in particular the words “will be to” during the resumed hearings, with the suggestion being made that the absence of this phrase in prior Situation Reports demonstrates that urban inundation had not been the primary consideration, and therefore, they had not been in W3 before that time.
- 231 In truth, there was no change in the manual operating strategy, but rather a change in “release strategy” in terms of the need to increase releases within strategy W 3. It does not follow that the engineers, by indicating a firm plan to increase releases to the upper limit of those permitted in strategy W 3, had therefore not earlier been in W3, with their primary consideration being urban protection.
- 232 As was explained by Mr. Malone, there was no change in strategy (in the operational sense) to avoid urban inundation. It was always the strategy to minimise urban damage.<sup>114</sup> However, if they could possibly avoid urban damage, that was foremost in their minds.
- 233 In essence, the 9.04pm Situation Report is the point at which the engineers abandoned any hope of achieving the lower level considerations under strategy W3.<sup>115</sup> It does not mean that they had only at that time adopted strategy W3. This is made clear by a comparison of the Situation Report issued at 17.51 on Sunday (Situation Report 11), and the report issued only a few hours later at 9.04pm (Situation Report 12.).
- 234 In the earlier report (Situation Report 11), under the heading “Impacts downstream of Wivenhoe Dam” it contains in bold writing “At this stage Fernvale and Mt Crosby Weir Bridge will not be affected for the next 24 hours but there is a strong possibility that, if the predicted rainfall totals eventuate in the next 12 to 24 hours, higher releases from Wivenhoe will be necessary. This may adversely impact upon Fernvale and Mt Crosby Weir Bridges as early as Tuesday morning.”

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<sup>114</sup> T5367

<sup>115</sup> T5157

- 235 However, in the Situation Report issued at 9.04pm (Situation Report 12), it is made clear that “all bridges downstream of Wivenhoe ... will be adversely impacted until at least Saturday 15 January in varying degrees.”
- 236 Until that point in time, the engineers had been able to completely avoid any urban inundation and still achieve some of the lower level objectives, which is in accordance with the requirements of the manual.
- 237 Indeed, earlier Situation Reports demonstrate the engineer’s active consideration of the protection of urban areas and the consideration of the impact of releases on urban areas.
- 238 Previous Situation Reports that make mention of the fact that the combined flows were only expected to add 50-100 mm in the lower Brisbane River demonstrate that they were actively thinking about urban areas, but there was negligible impact and no urban damage.
- 239 That this demonstrates that the flood engineers gave primary consideration to urban damage is made clear by the evidence of Mr Malone, where he states:
- “... there is a reference to what we were considering. Our primary objective... these releases will only have a minor impact on flood levels – or water levels in the lower Brisbane River, so to me that indicates that we were clearly thinking of the objective of minimising urban damage.”<sup>116</sup>*
- 240 Where it is demonstrated clearly to the engineers through the modelling that there was no impact, or at least negligible impact on the urban areas, and they knew that this meant that the urban areas were completely protected, it is not surprising that the Situation Reports do not spell out in precise terms that protection of urban areas was the primary consideration, as at that stage, there was no real threat to urban areas.
- 241 In our submission there was no need to mention the primary consideration being to protect against urban inundation in previous Situation Reports in these terms unless the engineers were sending a warning that the discharges and the natural peak flows at Moggill are going to touch the identified level of damage to urban areas.
- 242 It is this information that is necessary to be spelt out. It is not necessary to spell out any clearer that the flows are not going to impact or cause urban damage. The fact that the Situation Reports in fact record the lake levels increasing shows that the

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<sup>116</sup> O'Donnell QC to Malone at T5368 L 30 – 40

storage capacity is being used. The release rates actually being made and the maximum combined flows are what is needed to be known.

## **THE ABSENCE OF A “W3” RECORD**

- 243 The absence of a contemporaneous record of W 3 is of no significance. Clearly, it was not the practice of the engineers to record W 's at any stage. The absence of such a record does not assist in proving W3 was not used by the engineers over the weekend of Saturday 8 and Sunday 9 January 2011
- 244 This might have some significance if the evidence demonstrated that there was a contemporaneous record of W1C, D & E and/or 2 but not W3.
- 245 Absent such notation simply means to do so was not important in the eyes of the flood engineers at the time. The engineers have acknowledged that this is one of the lessons learnt, and that a new procedure is now in place that records the strategy that is engaged. However, the absence of such a record does not in itself indicate that W3 was not being used by the engineers.
- 246 The flood engineers focus on releases as informed by in-flows, lake levels and peak flow rates.

## **“MISSING” SITUATION REPORTS AND EVENT LOG ENTRIES**

### **Situation reports**

- 247 The Flood Event Report omitted a number of Situation Reports that were sent during the January 2011 flood event:
- (a) 18:00, Saturday 8 January 2011 Situation Report (sent 5:53pm);
  - (b) 14:00, Monday 10 January 2011 (sent at 2:52pm);
  - (c) 14:00, Wednesday 19 January 2011 (sent at 1:57pm);
  - (d) 09:30, Thursday 20 Jan 2011 (sent at 9:24am);
  - (e) 15:00, Thursday 20 Jan 2011 (sent at 8:07pm).
- 248 The evidence before the Commission is that a number of the appendices to the Flood Event reports, including the Situation Reports in Annexure E, were prepared by the a Seqwater “Dam Safety and Emergency Response Support Officer”, Chloe de Marchi (nee Cross).<sup>117</sup>
- 249 At the time, Ms de Marchi reported to Mr Tibaldi and would assist the hydrologists in the dam safety team with administrative duties.<sup>118</sup>
- 250 Ms de Marchi said that she was asked by Mr Tibaldi to collate the appendices<sup>119</sup>.
- 251 Ms de Marchi collated the Situation Reports by reviewing the Duty Engineer email account, locating all the Situation Reports she could find in the sent box of that account and would then copy and paste those into a separate document she had created for the appendix. She then made the headings “Situation Report 1”, and added the time and date, and so on.<sup>120</sup>
- 252 She said that Mr Tibaldi’s and Mr Malone’s involvement in that process was (in essence) limited to helping her to locate material.<sup>121</sup> She said she was under the impression that Mr Tibaldi was checking her work, but she said that she did not witness him doing so and he was busy on drafting other sections of the Flood Event Report.<sup>122</sup> She thought that Mr Malone would be checking hydrographs, but did not know if he was checking Situation Reports<sup>123</sup>

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<sup>117</sup> Exhibit 1141, page 8, line 42 and page 27, Line 28

<sup>118</sup> Exhibit 1141 page 4, line 40 to page 5, line 3.

<sup>119</sup> Exhibit 1141, Page 27, line 28 to 33

<sup>120</sup> Exhibit 1141, Page 33, line 1 to line 11

<sup>121</sup> Exhibit 1141, Page 33, Line 16 to 20

<sup>122</sup> Exhibit 1141, Page 34, Line 10 to 22 and T6046, L 8 to 20

<sup>123</sup> Exhibit 1141, Page 34, Line 30 to 35.



- 253 She said that Mr Tibaldi did not tell her not to include any documents in the appendices, including Situation Reports.<sup>124</sup> She also said that there were no email s, including Situation Reports, in the “deleted” box of the email account.<sup>125</sup>
- 254 Ms de Marchi was unaware why Situation Reports, that were not included in the 25 February 2011 draft of the Flood Event Report, were included in the final report dated 2 March 2011 .<sup>126</sup> It seems likely that somebody, perhaps Ms de Marchi or perhaps someone else, simply identified the error and corrected it.
- 255 Ms de Marchi was also given the job by Mr Tibaldi of printing and binding the briefs to the peer reviewers.<sup>127</sup>
- 256 It has not been suggested that she was not giving honest evidence and there is no basis to draw an inference to that effect against Ms de Marchi.

### **The event log**

- 257 Similarly, the event log given to the expert reviewers omitted the 3:30pm Sunday conference.
- 258 The evidence before the Commission is that Ms de Marchi was also responsible for preparation of the event log that formed Annexure M to the draft and final Flood Event Report.<sup>128</sup>
- 259 She undertook that task, at the request of John Tibaldi, by first obtaining the flood event log (Exhibit 23) from the server and saving a new copy of the log, which she named “*Event Log\_Chloe Ver.xls*” so as not to modify the original log.<sup>129</sup> She said that she would have only made one version of *Event Log\_Chloe Ver* so as not to confuse herself.<sup>130</sup>
- 260 Next, at the request of Mr Tibaldi, she took out (either by deleting or hiding<sup>131</sup>) from the *Event Log\_Chloe Ver* log personal information, such as names, and replaced them with code -names such as “Engineer 1”. She also took out entries that she thought related to North Pine Dam and fixed up spelling errors.<sup>132</sup> During her oral evidence, Ms de Marchi said that she also believes that she took out references to

<sup>124</sup> Exhibit 1141, page 27, Lines 44 to 47 and Page 35, Lines 35 to 42. See also T6047, Lines 15 to 20.

<sup>125</sup> Exhibit 1141, page 33, Line 39 to 42.

<sup>126</sup> Exhibit 1141, Page 47, Line 1 to page 48, Line 4.

<sup>127</sup> Exhibit 1141, Page 29, Line 2 to 29 and page 30 Line 32 to page 31, line 8.

<sup>128</sup> Exhibit 1141, Page 36, Line 10 to 34

<sup>129</sup> Exhibit 1141, Page 37, Line 2 to 31 and T6041, Line 20 to 40.

<sup>130</sup> Exhibit 1141, Page 39, Line 32 to 36

<sup>131</sup> Exhibit 1141, Page 40, Line 43 to page 42, Line 12.

<sup>132</sup> Exhibit 1141, Page 36, Line 6 to 34 and Page 37, Line 33 to 40

Situation Reports or directives to keep the document readable because those items were in other appendices to the Flood Event Report.<sup>133</sup>

- 261 “Hiding” cells is merely a function of Microsoft Excel that allows the cell information to be hidden, but not deleted, so it can be recovered if required.<sup>134</sup>
- 262 Ms de Marchi then exported the *Event Log\_Chloe Ver* log into a separate document which formed Annexure M to the Flood Event Report, and added the date column.<sup>135</sup> Again, this was at the request of Mr Tibaldi.<sup>136</sup>
- 263 The 24 February version of the *Event Log\_Chloe Ver* log did not include Situation Report, whereas the final Flood Event Report did include Situation Reports; however, Ms de Marchi could not recall why that was the case.<sup>137</sup>
- 264 Ms de Marchi accepted that she removed the reference to the 3:30pm Sunday 9 January conference of the flood engineers because it had been listed as “Situation Report” in the “category” column.<sup>138</sup> As we know this was a conference – but she could not have been expected to know that. This is the simple non –controversial explanation for the omission of the 3.30pm conference. The omission was not sinister. In fact the reviewers paid very little if any attention to the log anyway.
- 265 Ms de Marchi said that she was not asked to remove information from the log, other than personal information<sup>139</sup>, and she did not know if anyone else modified the log.<sup>140</sup> She said that she was not asked to make any changes to the content of the event log entries, other than removing personal information and amending spelling errors.<sup>141</sup>
- 266 She agreed that nobody had instructed her to hide the cell for the 3:30pm Sunday entry.<sup>142</sup>
- 267 There is no evidence to suggest that any of the flood engineers either removed the 3:30pm Sunday 9 January entry or instructed anyone else to remove that entry.
- 268 A question arose during the hearings as to why the 3:30pm Sunday 9 January entry in the flood event log (exhibit 23) has the initials “ NGA” (being Neville Ablitt of Seqwater), whereas the version in Annexure M of the Flood Event Report says

<sup>133</sup> T6040, Lines 9 to 25 and lines 45 to 55.

<sup>134</sup> T6040, Lines 25 to 35

<sup>135</sup> Exhibit 1141, Page 43, Line 3 to Page 44, line 15

<sup>136</sup> Exhibit 1141, Page 44, Line 24 to 26.

<sup>137</sup> Exhibit 1141, Page 45, Line 4 to 39

<sup>138</sup> T6041, Lines 3 to 10 and T6047, Lines 39 to 50.

<sup>139</sup> Exhibit 1141, Page 36, Line 36 to 42

<sup>140</sup> Exhibit 1141, Page 40, Lines 5 to 8.

<sup>141</sup> Exhibit 1141, Page 59, Line 9 to Page 60, Line 13

<sup>142</sup> T6047, Lines 35 to 40.

“Flood Engineer 1” (which, under the table that is exhibit 1143, corresponds to Mr Ayre).<sup>143</sup>

269 Ms de Marchi accepted that it may have been the case that, when she was undertaking the task of removing names and other personal information from the *Event Log\_Chloe Ver* log to go into Annexure M, she mistakenly put in the words “Flood Engineer 1” (the code for Mr Ayre) instead of “Flood Officer 1” (which is the code for Neville Ablitt).<sup>144</sup> Again this is obviously the unadorned if uncontroversial likelihood.

### Mr Ayre’s involvement

270 Mr Ayre’s evidence is that he was not involved in the collation of the Situation Reports for Annexure E or the preparation of the flood event log for Annexure M of the Flood Event Report.<sup>145</sup> That evidence is supported by Mr Tibaldi<sup>146</sup> and nothing is said to the contrary by Ms de Marchi.

271 Further, Mr Ayre was not involved in the briefing of the peer reviewers or preparing material for the peer reviewers.<sup>147</sup> Again, that evidence was supported by Mr Tibaldi<sup>148</sup> and not contradicted by Ms de Marchi.

272 While Mr Ayre was involved in reviewing drafts of the Flood Event Report, he concentrated his efforts on reviewing those parts of the Flood Event Report for which he was responsible<sup>149</sup>, which did not include Annexures E and M.

273 It was not suggested to Mr Ayre (nor can it be reasonably inferred) that he ought to have identified missing information in either Annexure E or M in those circumstances.

274 It should also be noted that, although the 5.53pm Saturday 8 January 2011 Situation Report was not included in the Flood Event Report and is therefore said to be “missing”, Mr Ayre included it verbatim in his voluntary supplementary statement to the Commission dated 29 March 2011.<sup>150</sup>

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<sup>143</sup> T6041, L 50 to T6042, L 1

<sup>144</sup> T6048 L 1 to 15

<sup>145</sup> Exhibit 1048 paragraph 109

<sup>146</sup> T5023 L 40 to 46

<sup>147</sup> T5038, L 1, T5039 L 1

<sup>148</sup> T6061 L 20

<sup>149</sup> T106 L 40 to T107 L3

<sup>150</sup> Mr Ayre supplementary statement (Exhibit 18) paragraph 49.

### **Submissions as to conclusions to be drawn from the evidence**

- 275 In our submission, the only conclusion that could reasonably be drawn from the evidence before the Commission is that the “missing” Situation Reports and entries in the event log are nothing more than an administrative over-sight.
- 276 While it might be suggested that the administrative error raises a “ *systemic concern*”<sup>151</sup>, there can be no adverse inferences drawn in respect to the credibility of the flood engineers in light of those errors.
- 277 Further, no adverse inference can be drawn against Mr Ayre in regards to so -called “*systemic concerns* ” because he is not a Seqwater employee and had no involvement in the parts of the Flood Event Report which contained the identified errors.
- 278 Two other points can be made:
- (a) It is perhaps unsurprising that errors of that nature might be made considering it is a 1,100 page report, prepared within 6 weeks of the end of the January 2011, at a time when the flood engineers were involved in preparation of submissions and statements to the Commission;
  - (b) Mr Ayre, in his first statement (exhibit 17), suggested that the Commission consider a recommendation to extend the time allowable for a flood event report.<sup>152</sup>

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<sup>151</sup> Callaghan to Pruss: T6063 L 50

<sup>152</sup> Mr Ayre's first statement (Exh bit 17), para. 155

## DOCUMENTS AND STATEMENTS MADE BY OTHERS

### 15 January Malone Summary for Mr Peter Borrows

- 279 Mr Ayre recalls receiving the email from Terry Malone at 1.02pm on Saturday 15 January (exhibit 1050), but thinks he would only have opened it up when he arrived at the FOC for the 2pm meeting.<sup>153</sup>
- 280 Mr Ayre said that he did not recall whether he gave the information to Mr Malone ““W1 exceeded at 8 a.m . Saturday, 6 January 2011” (it is accepted by all that “ 6 January” is a typographic error and should read “8 January”).
- 281 It is apparent that Mr Ayre was not involved in the preparation of this document. There is further no evidence that Mr Ayre was asked, or indeed, undertook to closely review or turn his mind to the contents of this document. The fact that the attachment was emailed to Mr Ayre is not of itself evidence of Mr Ayre’s agreement with its contents and there is no evidence which supports the proposition that he did agree.
- 282 No adverse finding can be made against Mr Ayre in respect to that document.

### 15 January strategies summary spreadsheet

- 283 The strategies summary spreadsheet is argued by Counsel Assisting to be evidence of the fact that the flood engineers, and Mr Ayre in particular, were unaware of the strategy that applied during the flood event.
- 284 The evidence is that Mr Ayre attended a conference at the FOC at 2pm on Saturday 15 January to discuss the requirement to prepare a briefing for the Minister. This was in the middle of operations and after a long period of working. The engineers were fatigued.
- 285 Mr Ayre’s recollection is that tasks were divided up. Because the briefing was focused on the peak release of Tuesday 11 January, Mr Ayre concentrated on a gate operating spreadsheet in respect to releases over that period.<sup>154</sup> He could not recall what Mr Drury worked on.
- 286 Rob Drury assisted in the preparation of the briefing because the engineers were fatigued.
- 287 An email was sent from the Duty Engineer account to John Tibaldi at 6.56pm (exhibit 1051). It attached a “Strategies Summary” Excel spreadsheet.

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<sup>153</sup> T5196

<sup>154</sup> T5200, Line 25

- 288 His 6<sup>th</sup> statement was based on an assumption that he must have sent it considering he was the only engineer named “Rob”<sup>155</sup>.
- 289 But after making that statement, he realised that Rob Drury was also in the FOC at the time. Naturally that prompted him to change his statement to one of a belief that he did not send it. Mr Ayre said he has no recollection of sending that email. He said that he believed that he did not because he has no recollection of it and he realised that was not the only “Rob” in the FOC at the time it was sent.
- 290 It is not possible to determine conclusively who sent the email. Accordingly, in those circumstances, and having regard to the *Briginshaw* test, it is submitted that there should not be a finding that it was sent by Mr Ayre.
- 291 However, if there is a need to make a positive finding as to who sent the email, or who created the spreadsheet, it is submitted that it is more likely that it was Rob Drury who did this because:
- (a) Rob Drury tends to sign off his emails “Rob” whereas Mr Ayre tends to sign off “Mr Ayre” (unless it’s on blackberry);
  - (b) There is no other description in the email other than “excel spreadsheet attached”, whereas Mr Ayre, if he was working on the attachment, is more likely to have explained the attachment to Tibaldi because it is likely to be Mr Ayre’s independent work which would require explanation;
  - (c) Rob Drury was there to assist with the briefing, and Mr Ayre was working on a gate operating spreadsheet in respect to the Tuesday peak releases;
  - (d) Although the witnesses say that Rob Drury was using the Ross River Dam computer (from which the Duty Engineer emails cannot be sent) and he sent an email at 7:12pm (exhibit 1064) from the “NQWater Engineer” email account from the RRD computer, Drury does not deny that he might have gone to another computer and none of the witnesses say that he did not go to another computer;
  - (e) Al Navruk, who was on -shift at the time, said that, although he does not recall preparing that document and therefore does not think he did prepare it, he thought it was the type of job that a flood engineer might ask a flood officer to do.
  - (f) The “Strategies Summary” spreadsheet was said by Counsel Assisting to be the first attempt to ascribe strategy labels to dates and times. That is

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<sup>155</sup> T5200

not correct – Terry Malone’s summary for Borrows (exhibit 1050) was sent some 5 hours earlier and that summary (other than the reference to the application is W2) is fairly accurate.

- (g) The flood engineers are clearly cognizant of the fact that lake levels, release rates and downstream flow rates are all required for an analysis of the strategies that actually applied during an event and the time that those strategies applied;
- (h) The spreadsheet looks to have been compiled by stripping out information from the Flood Event Log (exhibit 23) and leaving only situation reports, directives and the 3:30pm Sunday 9 January event. A flood engineer would know that strategies cannot be determined from that information, whereas Drury and the flood officers have a much poor understanding of the manual;
- (i) Rob Drury’s explanation of “W2” in his email to Dan Spiller was that it was “what he had in his head at the time”. The likely information that Drury would have drawn upon was the situation reports which he received from the FOC. Those situation reports largely did not refer to strategy labels W1 to W4, but rather they referred to release rates and downstream flow rates. It seems likely therefore that Drury sought to determine strategy references from information about release rates and downstream flow rates only. The spreadsheet appears to be a determination of strategies on a similar basis.

292 The Strategies Summary spreadsheet cannot reasonably be said to be an attempt to ascribe strategies to the times and dates they applied. That is because the spreadsheet information is so obviously wrong in that strategies are determined by lake level and downstream flow rates, not the information available in situation reports, gate directives and references to rates of release in entries about telephone calls and conferences. Mr Ayre’s analysis in his 7<sup>th</sup> statement makes it clear that the process was so obviously flawed.

293 If it was an attempt to ascribe strategies to times/dates, then at best it could be said to be an attempt (albeit a poor one) to “make a start” on describing strategies that were used.

294 Mr Ayre said that he cannot recall the spreadsheet and he did not think he did prepare it, but he quite candidly conceded that it was possible he did prepare it. His recollection about the dividing up of tasks was that “*we decided that we just needed a very high level cut of the interpretation of the application of the strategies and the*

*starting point was just to go through the flood event log*", but he could not recall who performed that task.

295 However, it is not possible to determine conclusively who drafted the spreadsheet. Again, in those circumstances, and having regard to the *Briginshaw* test, it is submitted that there should not be a finding that it was drafted by one of the engineers, and in particular Mr Ayre.

296 However, if one assumes for the moment that the "strategies summary" spreadsheet was prepared by a flood engineer (and emailed by either Rob Drury or Mr Ayre to John Tibaldi). What is it evidence of? The spreadsheet is so clearly wrong that it must have been put together either as way of simply "kicking things off" with a chronology and a strategy labelling process, without regard to the full set of information that is required for that job to be done properly, and at a time when the engineers were fatigued, stressed and had just gone through a traumatic experience of W4 releases. At worst it is a poor attempt to cobble together material for a briefing which they did not want to have to do.

297 It cannot reasonably be suggested that the spreadsheet is evidence to support a submission that the flood engineers were not operating in W3 throughout the weekend of 8 and 9 January 2011.

### **The draft Ministerial briefing**

298 John Tibaldi prepared a draft of the ministerial briefing and then emailed a draft on Saturday evening at 9:10PM (exhibit 1053). However, Mr Ayre was not in the FOC at the time and he cannot recall seeing it the next day when he was on shift.<sup>156</sup> There is no evidence to suggest that he did.

299 It was put to Mr Ayre that Mr Tibaldi sent another version of the draft Ministerial Briefing document on the morning of Sunday 16 January to a number of people including the Duty Engineer email account. Mr Ayre said he recalled noting that an email, but cannot recall reviewing it at the time because there were a number of issues to deal with in relation to communications to Somerset Dam.<sup>157</sup> The Event Log (exhibit 23) notes a number of communications on that issue on the Sunday morning. Any checking he did would likely have concentrated on the aspects that Mr Ayre dealt with in preparation, namely the events of Tuesday 11 January.

300 It is submitted that when a flood engineer is on shift during a flood event with communications problems at Somerset Dam, as well as the usual tasks to be

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<sup>156</sup> T5203, Line 20

<sup>157</sup> T5204, Line 20



performed, it would be surprising if Mr Ayre was able to take any real time to review the draft for accuracy.

301 Furthermore, an assessment of the strategies engaged in during an event requires analysis of lake levels, release rates and flow rates, so it is unsurprising that Mr Ayre did not undertake that task when he was on shift on Sunday 17 January 2011. The length of the document is not indicative of the amount of work required to properly review it.<sup>158</sup>

302 Chloe de Marchi was involved in collating the documentation for the Ministerial briefing.<sup>159</sup> She attended a meeting at Seqwater's offices on Sunday 16 January with (to her recollection) Peter Borrows, Jim Pruss, Paul Bird, Rob Drury and John Tibaldi to discuss preparation of the Ministerial briefing.<sup>160</sup>

### **Brian Cooper's 13 January 2011 report**

303 Brian Cooper wrote in his 12 January 2011 report " *For a few days at the end of December and for the last day or so before yesterday's big rise, Strategy W2 would be in place ...*". It appears that Mr Cooper's wording came from Peter Allen.

304 Mr Ayre said that he did not see the report when it was sent on 12 January, and there is no evidence to suggest otherwise. He thinks he saw it a few weeks later, when the engineers were preparing the Flood Event Report.<sup>161</sup>

305 He said that he was surprised by some of the descriptions in the Cooper report about the Wivenhoe strategies, but he did not voice any concerns because he thought the response was going to be made in the Flood Event Report being prepared for the Dam Safety Regulator.<sup>162</sup>

### **Spiller/Drury "w2" email reference**

306 The only relevance of the emails between Spiller and Drury in which Drury said on Monday 10 January that the operating strategy was "W 2" (RD5-321) is whether Drury obtained that (incorrect) understanding from one of the flood engineers.

307 Mr Drury said on numerous occasions that he does not know where he got that understanding from, but it must have been what was in his head at the time. There is no evidence it was based on information provided directly by the flood engineers. It probably came from his examination of the Situation Report and directive from

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<sup>158</sup> T5204, Line 50

<sup>159</sup> Exhibit 1141, page 11 Line 35 to page 25, Line 28

<sup>160</sup> Exhibit 1141, page 9 Line 20 to page 11, Line 33

<sup>161</sup> T6112, Line 50

<sup>162</sup> T6113, Lines 10 – 15.

about 6:30 am that morning and was simply a careless error. Mr Drury has an incomplete understanding of the manual and lacked all of the information that would be necessary to make the determination of which strategy applied.

- 308 The mistaken understanding of Mr Drury does not indicate that the mistaken understanding was shared by any of the flood engineers.

**Monday 10 January meeting “W2” reference**

- 309 Similarly, there is no evidence to suggest that the reference in the meeting notes of 10 January to “ W2” and “W 3” has any connection with the flood engineers, so no adverse finding could be made in that respect.

## **IF THERE IS TO BE A FINDING AKIN TO A CONSPIRACY TO MISLEAD**

310 If the Commission forms the view (despite the overwhelming evidence to the contrary) that there has been some collusion to mislead in the March Report, then it should not be found that Mr Ayre was part of that conspiracy taking into account that:

- (a) Mr Ayre does not work for Seqwater; and
- (b) Mr Ayre gave a full account of his actions in his voluntary statement in March 2011, including providing a verbatim account of the 5.53 pm Situation Report and a full account of the events at the 3.30pm Engineers' Conference on 9 January 2011;
- (c) During Mr Ayre's interview with the Commission in March 2011, he provided to the Commission staff the complete event log;
- (d) Mr Ayre included a complete copy of the event log (which included the 3.30pm conference) as an exhibit to his supplementary statement.

311 All of those actions, at the same time as the March report was submitted, are completely inconsistent with a suggestion that Mr Ayre was conspiring to conceal information.

## THE ENGINEERS SHOULD NOT BE REFERRED TO THE CMC

312

- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
  - [REDACTED]  
[REDACTED]
  - [REDACTED]  
[REDACTED]
  - [REDACTED]
  - [REDACTED]
  - [REDACTED]  
[REDACTED]
  - [REDACTED]  
[REDACTED]

313 In particular, Counsel Assisting has recommended that the CMC should investigate:

*“whether the conduct of Mr Tibaldi, Mr Ayre, Mr Malone and [REDACTED] relating to:*

- a. preparation of documents surrounding the January 2011 flood event, including the 17 January 2011 report to the Minister, the 2 March 2011 flood event report, statements provided to the Commission;*
- b. oral testimony given to the Commission*

*evidences offence/s against Chapter 16 of the Criminal Code, and/or official misconduct under the Crime and Misconduct Act 2001 committed by any, or all, of the named persons.” [para 487]*

314 The reference by Counsel Assisting to “offence/s” against Chapter 16 of the Criminal Code [REDACTED]

[REDACTED]  
[REDACTED] necessarily points to the following possible offences in Chapter 16 of the Criminal Code:

- 123. Perjury;
- 126. Fabricating evidence;

132. Conspiring to defeat justice; and

140. Attempting to pervert justice.

315 We note that each is a serious indictable offence punishable by a maximum of seven years imprisonment, except in the case of perjury where the maximum sentence is 14 years imprisonment.

316 The allegation made by Counsel Assisting is that [REDACTED]  
[REDACTED] an offence or offences representing their conduct is contained in Chapter 16 of the Criminal Code.

317 The only offence directly answering this description which relates to persons acting in concert is the offence of conspiring to defeat justice contrary to section 132.

318 The elements of the offence are:

The accused:

- conspired together;
- to obstruct, or prevent, or pervert, or defeat;
- the course of justice.

319 In section 119, “judicial proceeding” is defined to include any proceeding had or taken in or before any court, tribunal or person, in which evidence may be taken on oath.

320 A conspiracy to pervert the course of justice, like any other conspiracy to commit an offence, requires evidence that the conspirators were acting in pursuance of a criminal purpose held in common between them.

321 In *Churchill v Walton; R v Churchill* <sup>163</sup> the House of Lords held that on a charge of conspiracy to commit a statutory offence, the question essential to the determination of the issue whether there was an agreement to do an unlawful act is still “What did the parties agree to do?”; if what they agreed to do was, on the facts known to them, an unlawful act, they are guilty of conspiracy. On the other hand, if on the facts known to them what they agreed to do was lawful, they are not rendered artificially guilty of agreeing to do an unlawful act by the existence of other facts, not known to them, giving a different and criminal quality to the act agreed on.

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<sup>163</sup> [1967] 2 AC 224

322 The High Court has recently endorsed this decision and the subsequent decision of the House of Lords in *Kamara v Director of Public Prosecutions*<sup>164</sup>.

323 In *R v LK*<sup>165</sup> the majority of the High Court [Gummow, Hayne, Crennan, Kiefel and Bell JJ.] said:

*As a matter of ordinary English it may be thought that a person does not agree to commit an offence without knowledge of, or belief in, the existence of the facts that make the conduct that is the subject of the agreement an offence (as distinct from having knowledge of, or belief in, the legal characterisation of the conduct). This is consistent with authority with respect to liability for the offence of conspiracy under the common law. [para 117]*

324 To prove any of the offences referred to above requires a mens rea of intent. For the reasons set out in these submissions, it is submitted that the Commission could not be satisfied, to the requisite degree, that Mr Ayre intended that the Flood Event Report be a dishonest account.

325 A referral as recommended by Counsel Assisting necessarily implies a finding by the Commission after a public inquiry that there is sufficient evidence to satisfy the *Briginshaw* test that the engineers engaged in a criminal conspiracy to “to obstruct, prevent, pervert, or defeat, the course of justice” contrary to section 132.

### **The Briginshaw test**

326 The determination of issues and the making of findings before a Commission of Inquiry is in conformity the decision of the High Court in *Briginshaw v. Briginshaw* that in civil cases the standard of proof is on the balance of probabilities, with due regard being had to the nature of the issue involved.<sup>166</sup>

327 Much judicial consideration and comment has been directed at the statement of principle as originally postulated by Dixon J in *Briginshaw*.

328 Although the standard remains the same, not every case involves issues of importance and gravity in the *Briginshaw* sense. The need to proceed with caution is clear if, for example, there is an allegation of fraud or an allegation of criminal or moral wrongdoing.<sup>167</sup>

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<sup>164</sup> [1974] AC 104

<sup>165</sup> [2010] HCA 17

<sup>166</sup> (1938) 60 CLR at 362 per Dixon J: See the section of these submissions entitled “Standard of Proof”

<sup>167</sup> *G v H* [1994] HCA 48; (1994) 181 CLR 387 per Deane, Dawson and Gaudron JJ at [16]; see also *Graham v. Queensland Nursing Council* [2009] QCA 280 and *Hewett v Medical Board of Western Australia* [2004] WASCA 170

329 As noted, there can be few more serious allegations than those which counsel assisting has levelled against the engineers in general, and our client Mr Ayre in particular. Our client is entitled to have his actions judged on the basis of exact proofs, definite testimony, or direct inferences, not the rhetorical allegations he suffered at the hands of counsel assisting when he was first recalled to the witness box, nor the alleged inferences, the “must haves”, that he and his colleagues face in the submissions of Counsel Assisting<sup>168</sup>.

330 His reputation and future employment prospects, and those of his colleagues, have already been gravely and perhaps irrevocably damaged by the actions of counsel assisting. However, he is still entitled to receive procedural fairness from the Commission.

### **The Jurisdiction of the CMC**

331 We note that the jurisdiction of the CMC is tied to the concept of official misconduct as defined in the Crime and Misconduct Act 2001 [CM Act], namely, conduct that could, if proved, be a criminal offence; or a disciplinary breach providing reasonable grounds for terminating the person's services, if the person is or was the holder of an appointment in a unit of public administration.<sup>169</sup>

332 There are two hurdles to a referral of this matter to the CMC, one legal and the other practical.

333 The legal hurdle is the provision contained in section 332 of the CM Act, that is, whether the matter warrants investigation by the CMC. The practical, and related, hurdle is whether the CMC in a real sense has at its disposal “investigative techniques” to which the Commission does not have access which would enable to the CMC to further the investigation of this matter.

334 We will deal with the second matter first.

### **Investigative Techniques**

335 Counsel Assisting assert that the CMC has at its disposal “investigative techniques” [not delineated or otherwise described] to which the Commission does not have access which, by implication, would equip it to undertake a more effective investigation of the allegations levelled against the engineers.

336 This assertion makes two assumptions.

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<sup>168</sup> See, for example, paragraph 476 “All engineers must have known...”, and paragraphs 477 to 481.

<sup>169</sup> Crime and Misconduct Act 2001, section 15

- 337 First, that examination on oath of the engineers and the other relevant witnesses  
[the former on several occasions] undertaken by the Commission does not exhaust  
the matter.
- 338 Second, that the “investigative techniques” available to the CMC and not available  
to the Commission will prove to the requisite standard [beyond reasonable doubt if  
criminal charges are to be established] that the engineers are conspirators and/or  
perjurers.
- 339 The main power of the CMC is the power to compel persons to attend hearings and  
give sworn evidence. However, this is the very facility which this Commission of  
Inquiry also possesses and a facility which has been used extensively in the Inquiry.
- 340 What then is Counsel Assisting suggesting? What are these “investigative  
techniques” not possessed by the Commission which will make the difference and  
achieve a breakthrough?
- 341 Are we to understand that Counsel Assisting is alluding to placing the engineers  
under surveillance, or planting listening devices in their homes or tapping their  
telephones? These are the additional powers of pro-active investigation possessed  
by the CMC.
- 342 With due respect, this is extremely unlikely.
- 343 Even more fundamentally, upon what evidentiary bases could lawful access to such  
powers be obtained?
- 344 For example, under section 328 of the *Police Powers and Responsibilities Act 2000*  
an application for a surveillance device warrant requires a senior officer of a law  
enforcement agency to apply to a Supreme Court Judge for the issue of a  
surveillance device warrant if the officer **reasonably believes** that:
- a. *a relevant offence has been, is being , is about to be or is likely to be  
committed; and*
  - b. *the use of a surveillance device in the course of an investigation is or will be  
necessary for the purpose of enabling evidence or information to be obtained  
of the commission of the relevant offence or to determine the identity or location of the  
offender.*
- 345 A higher threshold still must be crossed if a warrant is to be issued for telephone  
interception.



- 346 The High Court has recently confirmed that “reasonably believes” means that a person has reasonable grounds for that belief<sup>170</sup>. It is a high threshold and substantially higher than mere suspicion Counsel Assisting asserts in paragraph 481 of the Submissions.
- 347 Is it seriously contended that, as a matter of law, such methods will be necessary for the purpose of enabling evidence to be obtained?
- 348 If not, the CMC is confined to its power to summon and examine on oath.
- 349 With respect, it would be oppressive and an abuse of process if the engineers were referred to the CMC simply to run the gauntlet of further compulsory examinations on oath.
- 350 The High Court has determined that in a curial setting, abuse of process extends to proceedings that are “seriously and unfairly burdensome, prejudicial or damaging” or “productive of serious and unjustified trouble and harassment.”<sup>171</sup>

#### **Does the matter warrant investigation by the CMC?**

- 351 We noted above the additional legal hurdle which is contained within section 332 of the CM Act, that is, whether the matter warrants investigation by the CMC.

- 352 Section 332 relevantly provides:

*332 Judicial review of commission's activities in relation to official misconduct*

*(1) A person who claims*

*(a) that a commission investigation into official misconduct is being conducted unfairly; or*

*(b) that the complaint or information on which a commission investigation into official misconduct is being, or is about to be, conducted does not warrant an investigation;*

*may apply to a Supreme Court judge for an order in the nature of a mandatory or restrictive injunction addressed to the commission.*

.....

- 353 We submit that section 332 requires the CMC, in order to properly undertake such a referred investigation and exercise its powers:

<sup>170</sup> *Taiapa v The Queen* [2009] HCA 53, paragraph 29.

<sup>171</sup> See *Batistatos v Roads and Traffic Authority (NSW)* [2006] HCA 27; (2006) 226 CLR 256 at 267; *Jeffery & Katauskas Pty Limited v Rickard Constructions Pty Limited* [2009] HCA 43 per French CJ, Gummow, Hayne and Crennan JJ at para [28].

- to have sufficient evidence of a reasonable suspicion of the commission of official misconduct; and
- to prospectively investigate beyond that point reached by the Commission.

354 Our submission in this regard is informed by the statutory guidance given to the CMC concerning the discharge of its misconduct function by sections 33, 34 and 35 of the CM Act.

355 In all the circumstances, the submission that a referral be made to the CMC should be rejected.

## NATURAL JUSTICE

- 356 These resumed hearings in February 2012 have not been conducted in a fair manner to Mr Ayre.
- 357 The resumed hearings were announced on 24 January 2012.
- 358 Mr Ayre was served with a summons to attend on 25 January 2012.
- 359 The hearings resumed from 2 February and continued until 11 February without break.
- 360 Very large volumes of material were disclosed by the Commission staff during the resumed hearings, often shortly before the witness was due to give their evidence, and on at least one occasion once that witness had already had commenced giving evidence.
- 361 To compound this, the order of witnesses was not infrequently changed.
- 362 Notice of adverse allegations were not provided to Mr Ayre before he was called to give his evidence, despite the fact that Counsel Assisting put a positive case to Mr Ayre.
- 363 Indeed, particulars were not even provided to Mr Ayre until after he had given his evidence.
- 364 Counsel Assisting's submissions are 153 pages, and contain approximately 700 footnotes of transcript references. Being expected to respond within 48 hours compounds the unfairness. The tight turn around because of the Commission's timing to hand down the Report does not give sufficient regard to principles of natural justice and Mr Ayre's legitimate interest in the subject matter of these proceedings.
- 365 The submissions make very serious allegations against Mr Ayre and the other flood engineers.
- 366 The manifest unfairness in the resumed proceedings cannot alone be remedied by any short extension of time within which to respond to Counsel Assisting's submissions.
- 367 Mr Ayre was entitled to have proper notice of allegations to be made against him before they were made and before the evidence was called; and was entitled to sufficient time to prepare for the hearings; and was entitled to sufficient time to respond. He has been given none of these things.

**PART B**

**SUNWATER'S RESPONSE TO CLOSING SUBMISSIONS FROM COUNSEL ASSISTING  
THE COMMISSION**

368 We have attempted to comment upon the more relevant of the paragraphs in the Counsel Assisting's submissions. Insufficient time has been provided to provide a response to all parts of the submissions that are contended. Accordingly, that no comment is made about every one is not to be taken as acceptance of it.

**That the Manual of Operational Procedures requires a choice of strategy**

369 We agree that to the extent the Manual requires a choice of strategy to be made, it is mandatory. See our submissions at page 12. This is evident in the choice which may be made to go to W2 by keeping releases from the dam below the downstream flow-rates and when that coincides with the lake level going beyond 68.5 mAHD. It is also possible at one point to make a choice to move to W4 or remain in W3. But this is the limit of choice available. No conscious decision is made of any other strategy.

370 The submissions of the Counsel Assisting, however, are noteworthy of a singular omission in that give no example of how any choice is open within any of the strategies available. Using the flow chart for example. When the lake level is not likely to exceed 68.5 m there is no choice. The flow chart provides that one "uses" W1. A choice requires the availability of options. Here there is no option to use anything other than W1. There is "no choice". No amount of heightened conscious awareness can alter the fact that the Manual requires the use of W1. Similarly, if it is not likely that the lake level will exceed 74 mAHD but the maximum flows are less than 4,000 cumecs at Moggill there is no option to use/choose strategy W3. One is required to use W2.

371 In paragraph 24 of Counsel Assisting's submissions, reference is made to the flow chart 'decision tree' that is included in the Manual as showing "how best to select the appropriate strategy to use at any point in time." This flow chart has clear and demonstrated error, which were raised in evidence in April 2011. In particular, it suggests that strategy W2 is used if the maximum flow at Lowood is likely to be less than 3500 m<sup>3</sup>/s AND the maximum flow at Moggill likely to be less than 4,000 m<sup>3</sup>/s. However, the flow chart does not include the important aspect that distinguishes W2 from W3, namely whether the releases from the dam exceed the downstream naturally occurring flows.

372 The quote in paragraph 26 of Mr Tibaldi's oral evidence highlights the fact that when he says " *select the appropriate strategy* " by reference to the flow chart on paragraph 26 of the Manual, he is in fact referring to a determination of the applicable strategy under the Manual by reference to the objective

physical/environmental data (i.e. lake level, release rates and flow rates). The flowchart does not provide for a choice – it only provides a determination of the strategy by reference to objective data. Accordingly, it is wrong to suggest that Mr Tibaldi's "selection" of a strategy is a selection based upon a choice of the strategy as Counsel Assisting would put it. Likewise, it is submitted that the words in section 8.4 of the Manual " *The strategy chosen at any point in time will depend on the actual levels in the dams and the following predictions ...*" must be read in the same way – that is, not a choice of strategy in the sense put by Counsel Assisting, but a determination of the strategy that is in place by reference to the objective data.

- 373 The example given by Counsel Assisting in paragraph 23 of their submissions correctly, in our submission, states the position - "*It requires the use of ...*". This is acceptance by Counsel Assisting that there is no choice between the strategies.
- 374 We refer to paragraph 27 of Counsel Assisting's submissions. The flow chart does not require any "switch" or contemporaneous thought and action. It is wrong in our submission to elevate the flow chart to a commandment and then to ignore it by reference to the last sentence at the bottom of page 26 of the Manual.
- 375 Counsel Assisting's submissions give no example of how any relevant strategy is the subject of any conscious choice between two or more options. If we were able to do so, the submissions might have some force.
- 376 The better view is that the flood engineers act in accordance with the Manual as described by Mr Ayre at T203-T206 which method was endorsed by Mr Babister at T-2210 L30-45.
- 377 Counsel Assisting's submissions refer to no evidence from any person, engineer or otherwise, to support the practical application of Counsel's construction of the Manual requiring conscious choices. Simple acquiescence from a witness to a proposition that the Manual requires a choice is not endorsement if in fact no choice is capable of being made.
- 378 Counsel Assisting did not give to any witness any example of which strategy could be the matter of a conscious choice. Even if it were assumed that the flow chart was a stand alone guide to strategy use (which it is not), there is no choice to be made. Rather, it requires use of strategies that are imposed on the engineer. For instance, when the flood event started and it was only likely the lake level would not exceed 68.5m, what choice between one or more strategy was open? None in our submissions. The Manual dictated the choice. When it was likely the lake would exceed 68.5m, but not 74m, where can Counsel assisting point to the capacity to

make a choice between one or more options. For example, if it was likely the maximum releases at Lowood and Moggill were less than 3,500 cumecs and 4,000 cumecs respectively, where is any choice available to be made as to which strategy to engage? According to the flow chart there is no option – W2 must be used. It is only when those flow rates are likely to exceed those numbers that strategy W3 is engaged, but there is no choice to stay in W2. Even if the flow chart were considered in isolation as a stand alone guide to the use of strategies, there is no facility or option to choose any strategy according to the Manual despite its language.

### **Express statements of strategy selection**

- 379 Paragraphs 39, 40(a-m), 41, 42, 43, and 44(a-j) of Counsel Assisting's submission provide a litany of examples of statements in the flood report that are said to support the theory that the engineers set about dishonestly creating the impression that strategies were consciously chosen during the event.
- 380 If that were the dishonest intention, it is curious to note that at no stage did the engineers' just simply state "*strategy W3 was chosen.*"
- 381 That would have been the simplest method of conveying the impression that a conscious choice of strategy label W3 was made at 8am Saturday. However, no such clear phrase was used.
- 382 Instead, to establish his theory, Counsel Assisting relies upon an overly detailed analysis involving a minute and hair-splitting critique of expression, and a parsing of words or phrases.
- 383 It is submitted that the use of phrases such as "the strategy transitioned from", or "W2 was by-passed", or "was adopted for use" or "the strategy transitioned from" or "strategies used during this period" or "the strategy used/adopted", simply indicate that a change in strategy occurred. Nothing more.
- 384 These changes in strategy have all occurred as a matter of objective fact as the lake level has risen, and down stream flows have altered.
- 385 Once there is a change in strategy, the engineers were then required to use that strategy once it was imposed upon them. The tables in part 2 and 10 of the Flood Report do nothing more than attempt to give an explanation of why there was a change of strategy, and how the engineers decisions on releases were appropriate for the strategy applicable.

386 It is submitted that the phrases complained of by Counsel Assisting as conveying an 'unambiguous impression of a conscious choice' should be contrasted with the wording used where a conscious choice to change strategy was actually required. These aspects of the flood report are extracted in paragraph 44(i) and 44(j) of the submissions of Counsel Assisting.

(a) In paragraph 44(i) it is stated that *"a decision was made to transition to Strategy W4 and the Dam Safety Regulator, Seqwater CEO and the Councils were advised of this decision. The Wivenhoe lake level was 73.70m"*

(b) In paragraph 44(j) it is stated that *"On the basis of the information from the previous period, at the start of this period it was decided to transition to Strategy W4"*

387 On a proper reading of the aspects in the Flood Report complained of by Counsel Assisting, where the engineers made a conscious decision (such as to invoke strategy W 4 before the lake level had actually reached 74.0m) clear terms were used indicating that such a decision was made. Where there was no such choice, the engineers' role was simply to use or adopt the strategy imposed upon them by the manual, and that is exactly what is portrayed by the Flood Report.

#### **Section 4 - Evidence of Strategy Choice : The Objective Facts**

*The 5:53 Situation Report : Paragraphs 113, 114, 115 and 116 of Counsel Assisting's submissions*

388 On 12 April 2011 Mr Ayre agreed at **T173** that the entry "W 2" in the Forecast Scenario indicated that he then (ie. on Saturday 8 January) thought he was in W2.

389 That answer is an error which he corrected in February 2012. On no-one's account could Mr Ayre have then been in W2.

390 Mr Ayre explained in 2012 that the W2 reference can only be a reference to a stage which might occur "in a few days" - ie. a future state. Its context makes this logical in our submission and with respect the language makes this clear.

391 Mr Ayre's correction is not therefore a recent invention. He simply reads properly the statement in context as we all can, and its meaning is clear.

392 Any witness is entitled to correct an error without being accused of recent invention. Exhibit 524 Attachment 34 demonstrates that Mr Ayre's evidence that the lake level



would fall below 68.5 was true, as it is shown by the modelling. This weights against the accusation of recent invention.

393 This section of the submissions, and in particular paragraph 114, is a mis-statement of Mr Ayre's evidence. Mr Ayre did not say that he had never operated under W3 in the past. His evidence was that he had not been operating the dam at a time when the move was made to W3. Annexed hereto and marked "A" are spreadsheets of dam operations and log times showing when Mr Ayre was on duty during the October and December flood events. They reveal that Mr Ayre was on duty after the lake level had gone beyond 68.5 but not at any time during the transition. Of course the evidence falls short of whether at those times the operators were then in either W2 or W3. What was obviously intended to be conveyed by the questions was that movement above 68.5 was the equivalent to W3.

394 In our submission the submissions at paragraph 115 shows a disregard for the evidence. Mr Ayre does not claim "a clear foresight". Mr Ayre is merely properly considering possible scenarios as the Senior Flood Engineer ought when considering the over all strategy. Further strategy W 3 may not be any more significant than W 2 in real terms. It is the impact of urban inundation that is the issue.

395 The submissions at paragraph 116(b) evidence Counsel Assisting's misconstruction that such a meaning may be gleaned from the paragraph headed "Forecast Scenario". Mr Ayre's evidence was that the whole of the Situation Report assisted him in this regard.

396 The paragraph under the heading "Wivenhoe Full Supply Level" provided evidence that the lake level might drop. The discussion under the Forecast Scenarios was an appreciation that at some time in the future it might then rise. Again at this point we invite reference to T206 L10-48. It is disappointing that the submissions by Counsel Assisting at paragraphs 103 to 121 do not refer to Mr Ayre's evidence of 13 February 2011 where he discusses the optimum way to execute the strategy of a movement between strategies. See also T2210 L40. This is further evidence there has been no recent invention.

*Log entry at 3:30*

Paragraphs 138 and 139

- 397 In relation to paragraph 138 of Counsel Assisting's submissions, the other simple explanation is that it was simply a loose use of language, and does not mean that they had until that point in time been in strategy W 1. It is not possible to be in 2 strategies simultaneously. That the engineers were contemplating a lake level of 72.5 and combined flows of 3,000 cumecs in the lower Brisbane River (as both recorded in the event log entry), tends to suggest that the explanation advanced by Counsel Assisting is not the plausible one. At the very least, the evidence is not strong enough to make the finding sought. It is submitted that the 3.30pm conference is a recognition by the engineers that event was moving towards the top end of the range of permissible flows and lake level applicable in W 3. That does not mean that they had until that time been, or believed that they had been in strategy W1.
- 398 Counsel Assisting's submissions assert that the entry means "they were at a point of change from W 1 to W 2". This is a construction never put to any of the flood engineers. The overwhelming and clear evidence of the flood engineers is -
- a) not that they thought there must be a linear transition between W1, 2 & 3
  - b) rather that W2 may be bypassed if appropriate.

The submissions by Counsel Assisting seek to elevate theories to evidence.

Paragraphs 158 and 162 of Counsel Assisting's submissions

- 399 The submissions dismiss as "difficult to accept" that Mr Drury would be reckless based on ambiguous statements in Situation Reports. Far from suggesting a profound failure on Seqwater's part, it suggests, in our submission, that Counsel Assisting's view of the importance of putting a label on a strategy is not shared by those working with the dam managers. It also ignores Mr Drury's own evidence that "W2" was what was "in his head" at the time and he doesn't recall checking it with anyone.
- 400 Re paragraph 165: There is no evidence and none is cited by Counsel Assisting from which an inference is open that someone from the Flood Operation Centre told Mr Drury the strategy was W2. It is unhelpful to claim as fact that which one merely would hope to be so.

401 Re paragraph 160: This submission by Counsel Assisting mis-states the evidence. Mr Drury's attention was drawn to Directive 9 showing releases less than 4,000 cumecs and greater than 1,900 cumecs. Hence, W 2 was open within his stated knowledge base. Coupled with Mr Drury's knowledge that the bridges were already out (so W1 was not available) it could have reliably informed him that W 2 was then engaged given his imperfect knowledge of the Manual. See T5578 L50 -60 and T5579 L1-8.

402 The "inference" referred to at paragraph 165 is said to be supported by a similar view expressed by Mr Allen to Mr Brian Cooper. But no such "view" was expressed by Mr Drury. The "similar view" is that of Counsel Assisting.

### **Other contemporaneous records from 8 and 9 January 2011**

#### Mr Allen's email to Mr Cooper at 10:57 am on 12 January 2011

#### 194-195 of Counsel Assisting's submissions

403 Mr Allen has experience in the operation of dams and it is not fanciful to suggest he made his own mistake. Indeed, that was his evidence. There is no evidence to support the finding sought that the better inference is that it could only have been one of the flood engineers who communicated that information.

404 The simple fact is that there is no evidence referred to from which the inference that Mr Allen was informed from someone at the FOC. Absent any evidence it is quite wrong to say an inference is better or worse.

#### 196 ff of Counsel Assisting's submissions

405 It is difficult to pretend that these submissions do not reveal anything but a misunderstanding of the evidence. The submissions ignore the overwhelming evidence that experts and the engineers place less reliance upon W labels, whereas Counsel Assisting elevate labels beyond their worth.

### **5. First attempts to record strategy choice**

#### Mr Malone's Summary of Manual

406 It is submitted by Counsel Assisting that the absence of feedback to Mr Malone's Summary implied acceptance of it or at the least that they simply did not know whether they were in W2 or W3. See paragraphs 223 and 226.

407 However, this assumes that as at 15 January 2011 a flood engineer was as excited by the thought of preparing a summary document as Counsel Assisting seems to think he ought to have been and that other flood engineers rejoiced in the prospect of its review. The evidence is that they had more important operational decisions to make managing the actual flood event. Silence does not imply consent. The submission ignores the evidence that the W labels do not enjoy any real importance to flood engineers. Paragraph 227 of Counsel Assisting's submissions seems to elevate receipt of an email as a conscious appreciation of all the contents of every attachment. With respect, this is simply naive.

#### Paragraph 228

408 "*The most likely explanation may be ....*". The submission is unhelpful and overreaches.

#### The Strategy Summary Log

409 Re paragraph 246. This submission ignores Mr Ayre's evidence that his assumption he had sent the email was challenged when he realised he was not the only "Rob" at that time in the Flood Operations Centre.

410 Paragraph 248. Mr Ayre's ability to give an account of how the Strategy Summary Log might have been prepared is as consistent as is his ability to recall other details of his activities during this time. For example:

- that on 15 January he was working on the gate operating spreadsheets;
- that he was focussed on those entries for Tuesday 11 January which was the time greatest emphasis was to be given;
- that, for example, having a discussion with John Tibaldi during the preparation of the Flood Event Report on the use or non-use of the word "extremely" when describing a large flood event, see Exhibit 1048 para 38.
- that there was a conversation with Mr Tibaldi about the bypassing of W2;
- of which parts and appendices each flood engineer contributed to; the parts either that a technical writer had drafted - see para. 44, Exhibit 1048;
- how feedback was provided, see Exhibit 1048 para. 75.

- 411 It would be found on the evidence is that Mr Ayre has a true recollection of many matters - it may be clearer than others.
- 412 Re paragraph 260. It is asserted Mr Ayre gave instructions for the preparation of the Strategy Summary Log. This is not clear on the evidence. See T5293 L20 ff and especially at LL 48-50 where he said “ .... *It could have been - again it could have been John Tibaldi, Rob Drury or myself. I don't know.*”.
- 413 The most that could be said is that Mr Ayre was aware a high level time step of the strategies was being undertaken. This is no more than anyone else in the Flood Operation Room at about 5:00 that Saturday and who accessed Exhibit 1602 and/or who heard that this was the first task to be done by way of a chronology for the Ministerial Brief.
- 414 In paragraph 263 of Counsel Assisting's submissions, it stated that it is strange that Mr Ayre apparently sent, or allowed to be sent, the strategy summary log spreadsheet to Mr Tibaldi. First, it is submitted that the evidence does not allow a finding to be made that Mr Ayre sent this document. The likely person who prepared the spreadsheet was Mr Drury, or at least, as conceded by Counsel Assisting in paragraph 261 of the submissions, a finding that it was authored by Mr Ayre or Mr Malone should not be made. Secondly, it overlooks the fact that the document was being sent to a flood engineer, and for that reason, there is no reason for Mr Ayre not to have allowed it to have been sent to the engineer who was responsible for preparing the ministers briefing.
- 415 Paragraph 264 of Counsel Assisting's submissions asserts that the creation of the strategy summary log evidenced the importance of presenting a record of when the strategies were used. With respect, this is not so. All it evidences, is that Mr Drury and those above him wanted it. It does not reflect at all its relative importance in the minds of the flood engineers then or now.
- 416 Paragraph 267. This submission is that there was no contemporaneous rejection of the Strategy Summary Log but the submission goes no further to say what from that may be gleaned. In our submission it is likely that it assumed little importance given the flood engineers were to prepare a definitive report of more weight were the views of the peer reviewers in this context.
- 417 Further, that not all the strategy summary log mistakes found their way into the Minister's briefing demonstrates that it was rejected by Mr Tibaldi to the extent that his fatigue permitted review.

- 418 Paragraph 268. In our submission this is wrong. It simply evidences the flood engineers paid little or no attention to a document probably created by Mr Drury for purposes outside the roles of the flood engineers for likely unproductive meetings. It also is consistent with the flood engineers' evidence that in fact and at all times the adoption of W labels is not a matter of importance.
- 419 Paragraph 269. This elevates Mr Ayre's speculation as to who might have sought the record to a fact that it was him. This is simply wrong in our submission.
- 420 Further re paragraph 269, Mr Ayre explained that the evidence that he had given on how that document might have been prepared was a reconstruction. T5294 Line 9. Mr Ayre was simply trying to assist by explaining how that document might have come into existence.

#### The Briefing Note to the Minister

- 421 Paragraph 279. This paragraph is an error. Mr Ayre was not sent the draft at 9:10 pm on 15 January. This error is repeated in the first sentence at paragraph 280. See the transcript references at 5203 L10-23.
- 422 Paragraph 281. There is, in our submission, no such inference open. If anything to make it ignores Mr Ayre's evidence that he did not get the email at 9:10 pm on 15th nor did he pay it any or much attention on 16th when he was on duty managing the flood event.

#### Awareness of the Briefing Note - others

- 423 Paragraphs 291 to 292. So far as Mr Ayre is concerned, his review, if at all was with his contribution to the events on the Tuesday. He reasonably would not pay attention to identify mistakes not his. The fact that errors were not corrected merely demonstrates how slightly it featured on a scale of importance to the flood engineers given their state of fatigue, the time and the lack of consequence.

#### Conclusions from Summary of Manual; Strategy Summary Log and Brief to Minister

- 424 Paragraph 293 a). Mr Ayre only knew a high level time-step was required; and a 2 page summary which had been sought from Mr Malone was sent to him for review and that he made a minor contribution to the Ministerial Brief. In our submission there is no evidence Mr Ayre dedicated anything but little of his valuable times to these documents.
- 425 Paragraph 293 b). To the flood engineers it was of no importance, given their other responsibilities, to attribute labels to times and this has never changed.

426 Paragraph 293 c). It is submitted in Counsel Assisting's submission here that the language of their drafts is a record of what actually occurred. This cannot be correct in respect of Mr Ayre as there is no evidence whatsoever that could allow a finding to be made that he created any of these 3 documents. Further, there was no evidence to support the contention that the drafting of the documents was done to give the impression that clear conscious choices had been made about strategies. That suggestion flies in the face of the engineers' evidence that the strategies used are determined by the objective data - lake level, flow rates and release rates.

## **6. Concern about transition to strategy W2**

427 Paragraph 317. In our submission this is unfair. The evidence referred to at transcript reference at paragraph 316 is the same as Mr Ayre's evidence in his Supplementary Statement Exhibit 18 at paragraph 34. Mr Ayre is now being criticised for having a memory and trying to assist this Inquiry.

428 Paragraph 325. See our submissions at page 35 and following.

429 Re paragraph 432. Counsel Assisting acknowledges that each of the peer review experts have maintained their view that releases from the dam were appropriate, but submits that even if appropriate, they do not of themselves determine the strategy under which the dam was being operated. What is clear though, is that the decisions on releases were in accordance with the Manual and appropriate. Such a finding should be made. It would seem a strange conclusion to an Inquiry that a finding be made that the flood engineers made all the right operational decisions for releases, in fact protected and then appropriately minimized inundation in urban areas, and yet be criticized for writing a report that conveyed the same.

## **7. Peer reviews of the March Report**

### Mr Cooper's Report

430 In regards to paragraph 442(f), it was not put to Mr Ayre or the other engineers that Mr Cooper's report was discussed at the meeting at 2pm on Saturday 15 January 2011.

431 Re 442 (k) Counsel Assisting asserts that the failure to object to Mr Cooper's account of events at that time adds further weight to the evidence outlined in part 5 that, as at 15 to 17 January, all four flood engineers thought they had used strategy W2. Mr Ayre gave a perfectly rational explanation for not doing so. Mr Ayre stated

in his evidence that he did not do so because he considered that the response should be through the formal report that was being prepared for the dam safety regulator. T6113 L 15. This explanation does not lend itself to the conclusion that Mr Ayre thought that they had used strategy W2.

#### **10 Significant of Failure to comply with this aspect of the manual**

- 432 In regards to paragraph 453, the limitations of hydrologic modelling take nothing away from the force of the argument (and Mr Babister's view) that the modelled strategies "G1" and "G2" are not practical and are highly risky.
- 433 In regards to paragraphs 454 to 457, it is wrong to suggest that awareness of the strategy label may, of itself, lead to the possibility of the flood engineer exercising his discretion with respect to releases differently and adopting higher release rates. The evidence is clear that the flood engineers would only seek to adopt higher release rates where there is a need to do so, not because of the strategy label. Examples of that is the recognition, which led to the 3.30pm meeting on Sunday 9 January, that there was likely to be greater inflows to Wivenhoe Dam which would require higher release rates or a forecast of a higher rainfall which may lead the flood engineer to conclude that he should adopt a release rate that would provide a 3 day drain-down, rather than a 7 day drain-down (see Mr Ruffini's evidence referred to at paragraph 89 of these submissions).
- 434 In regards to paragraph 458, it is circular and illogical to consider that some lack of awareness of the strategy label means that the flood engineer might be under a "false constraint" about the maximum level of flows that could be achieved. First, there is a natural constraint in place, regardless of the strategy label that applies, namely that the flood engineer is at all times required to consider the lower level objectives which have the effect that, if releases can be kept to a minimum then they should be. Secondly, the flood engineer might only feel a constraint about the level of releases if he wished to be able to increase release rates but considered that the strategy that applied did not allow him to do so. In that circumstance, the Senior Flood Operations Engineer always has the ability to apply his discretion under clause 2.8 (following the required consultation) and depart from the Manual requirements.
- 435 In regards to paragraph 459, public confidence is not maintained by knowledge that the flood engineers are able to put a label on the strategy that is in place at any point in time. Rather, public confidence is maintained by knowing that experienced



engineers, who are acutely aware of the environmental and physical conditions at any point in time, are operating the dams in a manner that achieves the objectives in order of priority and, when operating in “strategies W1, W 2 and W 3, are achieving close to the best possible mitigation result with the information available during their operations (as was found by Mr Babister in his 28 July 2011 report) in respect of the January 2011 flood event.

- 436 In regards to paragraph 462, the term “*consciously engage with the requirements of the manual insofar as they related to adoption of strategies*” is meaningless and highlights that the submissions of Counsel Assisting fail to identify what the Manual in fact “requires” in respect to the adoption of strategies. No examples are given as to how a flood engineer is supposed to “consciously engage” with the manual requirements.

4:25 PM 16/02/2012

Start Of Event	From	To	0.00	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00	11.00	12.00	13.00	14.00	15.00	16.00	17.00	18.00	19.00	20.00	21.00	22.00	23.00	24.00	0.00	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00	11.00	12.00	13.00	14.00	15.00	16.00	17.00	18.00	19.00	20.00	21.00	22.00	23.00	24.00
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<b>Shift Length</b> <b>12 hours</b>	<b>Total</b> <b>Hours</b>		<b>Saturday, 9 October 2010</b>																								<b>Sunday, 10 October 2010</b>																									
<b><u>Duty Engineers</u></b>																																																				
Rob Ayre	60																																																			
Terry Malone	70																																																			
John Ruffini	52																																																			
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Lisa Cecchi	12																																																			
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John West	24																																																			

Start Of Event	From	To																																															
9 October 2010			<div><div>0.001.002.003.004.005.006.007.008.009.0010.0011.0012.0013.0014.0015.0016.0017.0018.0019.0020.0021.0022.0023.0024.00</div><div>0.001.002.003.004.005.006.007.008.009.0010.0011.0012.0013.0014.0015.0016.0017.0018.0019.0020.0021.0022.0023.0024.00</div></div>																																														
Shift Change 7.00	Total Hours	Monday, 11 October 2010												Tuesday, 12 October 2010																																			
Shift Length 12 hours																																																	
Duty Engineers																																																	
Rob Ayre	60																																																
Terry Malone	70																																																
John Ruffini	52																																																
John Tibaldi	60																																																
	242																																																
Data Collectors																																																	
Lisa Cecchi	12																																																
Sean Fleming	24																																																
Kim Hang	23																																																
Peter MacTaggart	24																																																
Albert Navruk	24																																																
Ken Price	24																																																
David Pokarier	24																																																
Bill Stephens	24																																																
Trainees																																																	
Nev Ablitt	12																																																
Mark Tan	12																																																
Lou Van Blerk	12																																																
John West	24																																																





Start Of Event 9 October 2010	From To	0.00 1.00 2.00 3.00 4.00 5.00 6.00 7.00 8.00 9.00 10.00 11.00 12.00 13.00 14.00 15.00 16.00 17.00 18.00 19.00 20.00 21.00 22.00 23.00 24.00	0.00 1.00 2.00 3.00 4.00 5.00 6.00 7.00 8.00 9.00 10.00 11.00 12.00 13.00 14.00 15.00 16.00 17.00 18.00 19.00 20.00 21.00 22.00 23.00 24.00																																		
Shift Change 7.00	Total Hours	Friday, 15 October 2010												Saturday, 16 October 2010																							
Shift Length 12 hours																																					
Duty Engineers																																					
Rob Ayre	60																																				
Terry Malone	70																																				
John Ruffini	52																																				
John Tibaldi	60																																				
	242	1 1																																			
Data Collectors																																					
Lisa Cecchi	12																																				
Sean Fleming	24																																				
Kim Hang	23																																				
Peter MacTaggart	24																																				
Albert Navruk	24																																				
Ken Price	24																																				
David Pokarier	24																																				
Bill Stephens	24																																				
Trainees		1 1																																			
Nev Ablitt	12																																				
Mark Tan	12																																				
Lou Van Blerk	12																																				
John West	24																																				
		1 1																																			



Start Of Event		From	To	0.00	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00	11.00	12.00	13.00	14.00	15.00	16.00	17.00	18.00	19.00	20.00	21.00	22.00	23.00	24.00	0.00	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00	11.00	12.00	13.00	14.00	15.00	16.00	17.00	18.00	19.00	20.00	21.00	22.00	23.00	24.00
9 October 2010																																																					
Shift Change 7.00	Total Hours	Sunday, 17 October 2010																								Monday, 18 October 2010																											
Shift Length 12 hours																																																					
<b>Duty Engineers</b>																																																					
Rob Ayre	60																																																				
Terry Malone	70																																																				
John Ruffini	52																																																				
John Tibaldi	60																																																				
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<b>Data Collectors</b>																																																					
Lisa Cecchi	12																																																				
Sean Fleming	24																																																				
Kim Hang	23																																																				
Peter MacTaggart	24																																																				
Albert Navruk	24																																																				
Ken Price	24																																																				
David Pokarier	24																																																				
Bill Stephens	24																																																				
<b>Trainees</b>																																																					
Nev Ablitt	12																																																				
Mark Tan	12																																																				
Lou Van Blerk	12																																																				
John West	24																																																				





Start Of Event 9 October 2010	From To	0.00	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00	11.00	12.00	13.00	14.00	15.00	16.00	17.00	18.00	19.00	20.00	21.00	22.00	23.00	24.00
Shift Change 7.00	Total Hours	Thursday, 21 October 2010												Friday, 22 October 2010												
Shift Length 12 hours																										
Duty Engineers																										
Rob Ayre																										
Terry Malone	82																									
John Ruffini	59																									
John Tibaldi	60																									
	261																									
Data Collectors																										
Lisa Cecchi	12																									
Sean Fleming	24																									
Kim Hang	23																									
Peter MacTaggart	24																									
Albert Navruk	24																									
Ken Price	31																									
David Pokarier	24																									
Bill Stephens	24																									
	7																									
Trainees																										
Nev Ablitt	12																									
Mark Tan	24																									
Lou Van Blerk	12																									
John West	24																									





Start Of Event 9 October 2010	From To	0.00 1.00 2.00 3.00 4.00 5.00 6.00 7.00 8.00 9.00 10.00 11.00 12.00 13.00 14.00 15.00 16.00 17.00 18.00 19.00 20.00 21.00 22.00 23.00 24.00	0.00 1.00 2.00 3.00 4.00 5.00 6.00 7.00 8.00 9.00 10.00 11.00 12.00 13.00 14.00 15.00 16.00 17.00 18.00 19.00 20.00 21.00 22.00 23.00 24.00																						
Shift Change 7.00	Total Hours	Monday, 25 October 2010												Tuesday, 26 October 2010											
Shift Length 12 hours																									
Duty Engineers																									
Rob Ayre																									
Terry Malone	82																								
John Ruffini	59																								
John Tibaldi	60																								
	261																								
Data Collectors																									
Lisa Cecchi	12																								
Sean Fleming	24																								
Kim Hang	23																								
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Albert Navruk	24																								
Ken Price	31																								
David Pokarier	24																								
Bill Stephens	24																								
	7																								
Trainees																									
Nev Ablitt	12																								
Mark Tan	24																								
Lou Van Blerk	12																								
John West	24																								



Start Of Event 9 October 2010	From To	0.00 1.00 2.00 3.00 4.00 5.00 6.00 7.00 8.00 9.00 10.00 11.00 12.00 13.00 14.00 15.00 16.00 17.00 18.00 19.00 20.00 21.00 22.00 23.00 24.00	0.00 1.00 2.00 3.00 4.00 5.00 6.00 7.00 8.00 9.00 10.00 11.00 12.00 13.00 14.00 15.00 16.00 17.00 18.00 19.00 20.00 21.00 22.00 23.00 24.00																							
Shift Change 7.00	Total Hours	Wednesday, 27 October 2010	Thursday, 28 October 2010																							
Shift Length 12 hours																										
Duty Engineers																										
Rob Ayre																										
Terry Malone		82																								
John Ruffini		59																								
John Tibaldi		60																								
		261																								
Data Collectors																										
Lisa Cecchi		12																								
Sean Fleming		24																								
Kim Hang		23																								
Peter MacTaggart		24																								
Albert Navruk		24																								
Ken Price		31																								
David Pokarier		24																								
Bill Stephens		24																								
		7																								
Trainees																										
Nev Ablitt		12																								
Mark Tan		24																								
Lou Van Blerk		12																								
John West	24																									

Date/Time	Lake Level	Storage	Incremental Inflow		Outflow															Inflow
					Regulators			Gates Settings					Gate Discharges					Total		
					1	Hydro	Total	1	2	3	4	5	1	2	3	4	5	m³/s		
	m AHD	ML	ML	m³/s				m	m	m	m	m	m³/s	m³/s	m³/s	m³/s	m³/s	m³/s	m³/s	
06/10/2010 09:00:00	67.06	1171738			0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	
06/10/2010 10:00:00	67.06	1171738		0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	
06/10/2010 11:00:00	67.06	1171738	0	0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	
06/10/2010 12:00:00	67.06	1171738	0	0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	
06/10/2010 13:00:00	67.06	1171738	0	0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	
06/10/2010 14:00:00	67.06	1171738	0	0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	
06/10/2010 15:00:00	67.06	1171738	0	0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	
06/10/2010 16:00:00	67.06	1171738	0	0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	
06/10/2010 17:00:00	67.06	1171738	0	0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	
06/10/2010 18:00:00	67.06	1171738	0	0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	
06/10/2010 19:00:00	67.06	1171738	0	0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	
06/10/2010 20:00:00	67.06	1171738	0	0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	
06/10/2010 21:00:00	67.06	1171738	0	0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	
06/10/2010 22:00:00	67.06	1171738	0	0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	
06/10/2010 23:00:00	67.06	1171738	0	0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	
07/10/2010 00:00:00	67.06	1171738	0	0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	
07/10/2010 01:00:00	67.06	1171738	0	0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	
07/10/2010 02:00:00	67.06	1171738	0	0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	
07/10/2010 03:00:00	67.06	1171738	0	0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	
07/10/2010 04:00:00	67.06	1171738	0	0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	
07/10/2010 05:00:00	67.06	1171738	0	0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	
07/10/2010 06:00:00	67.06	1171738	0	0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	
07/10/2010 07:00:00	67.06	1171738	0	0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	
07/10/2010 08:00:00	67.06	1171738	0	0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	
07/10/2010 09:00:00	67.06	1171738	0	0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	
07/10/2010 10:00:00	67.06	1171738	0	0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	
07/10/2010 11:00:00	67.06	1171738	0	0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	
07/10/2010 12:00:00	67.06	1171738	0	0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	
07/10/2010 13:00:00	67.06	1171738	0	0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	
07/10/2010 14:00:00	67.06	1171738	0	0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	
07/10/2010 15:00:00	67.06	1171738	0	0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	
07/10/2010 16:00:00	67.06	1171738	0	0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	
07/10/2010 17:00:00	67.06	1171738	0	0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	
07/10/2010 18:00:00	67.06	1171738	0	0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	
07/10/2010 19:00:00	67.06	1171738	0	0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	
07/10/2010 20:00:00	67.06	1171738	0	0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	
07/10/2010 21:00:00	67.06	1171738	0	0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	
07/10/2010 22:00:00	67.06	1171738	0	0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	
07/10/2010 23:00:00	67.06	1171738	0	0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	
08/10/2010 00:00:00	67.06	1171738	0	0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	
08/10/2010 01:00:00	67.06	1171738	0	0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	
08/10/2010 02:00:00	67.06	1171738	0	0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	
08/10/2010 03:00:00	67.06	1171738	0	0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	
08/10/2010 04:00:00	67.06	1171738	0	0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	
08/10/2010 05:00:00	67.06	1171738	0	0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	
08/10/2010 06:00:00	67.06	1171738	0	0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	
08/10/2010 07:00:00	67.06	1171738	0	0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	
08/10/2010 08:00:00	67.06	1171738	-90	-25	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	176	
08/10/2010 09:00:00	67.06	1171738	632	176	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	176	
08/10/2010 10:00:00	67.07	1172821	632	176	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	
08/10/2010 11:00:00	67.07	1172821	-181	-50	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	176	
08/10/2010 12:00:00	67.07	1172821	632	176	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	176	
08/10/2010 13:00:00	67.08	1173905	632	176	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	
08/10/2010 14:00:00	67.08	1173905	-181	-50	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	176	
08/10/2010 15:00:00	67.08	1173905	632	176	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	176	

## Volume Check

Volume of Inflow 627,840 ML

Volume of Outflow 622,615 ML

Storage Difference 3,250 ML

625,865 ML

99.7%

## Peaks

Inflow 2,975 m³/s

Outflow 1,494 m³/s

Elevation 69.61



## WIVENHOE/SOMERSET OPERATIONS

data

08/10/2010 16:00:00	67.09	1174988	632	176	0.0	0.0	0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0
08/10/2010 17:00:00	67.09	1174988	-181	-50	0.0	0.0	0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	176
08/10/2010 18:00:00	67.09	1174988	632	176	0.0	0.0	0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	176
08/10/2010 19:00:00	67.10	1176071	632	176	0.0	0.0	0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0
08/10/2010 20:00:00	67.10	1176071	-181	-50	0.0	0.0	0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	176
08/10/2010 21:00:00	67.10	1176071	632	176	0.0	0.0	0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	150
08/10/2010 22:00:00	67.11	1177155	542	150	0.0	0.0	0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	150
08/10/2010 23:00:00	67.11	1177155	542	150	0.0	0.0	0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	176
09/10/2010 00:00:00	67.12	1178238	632	176	0.0	0.0	0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0
09/10/2010 01:00:00	67.12	1178238	-181	-50	0.0	0.0	0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	176
09/10/2010 02:00:00	67.12	1178238	632	176	0.0	0.0	0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	176
09/10/2010 03:00:00	67.13	1179321	632	176	0.0	0.0	0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0
09/10/2010 04:00:00	67.13	1179321	-181	-50	0.0	0.0	0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	176
09/10/2010 05:00:00	67.13	1179321	632	176	0.0	0.0	0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	150
09/10/2010 06:00:00	67.14	1180404	542	150	0.0	0.0	0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	125
09/10/2010 07:00:00	67.14	1180404	451	125	0.0	0.0	0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	351
09/10/2010 08:00:00	67.15	1181488	1264	351	0.0	0.0	0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	125
09/10/2010 09:00:00	67.16	1182571	451	125	0.0	0.0	0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	125
09/10/2010 10:00:00	67.16	1182571	451	125	0.0	0.0	0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	326
09/10/2010 11:00:00	67.17	1183654	1174	326	0.0	0.0	0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	326
09/10/2010 12:00:00	67.18	1184738	1174	326	0.0	0.0	0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	125
09/10/2010 13:00:00	67.19	1185821	451	125	0.0	0.0	0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	125
09/10/2010 14:00:00	67.19	1185821	451	125	0.0	0.0	0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	301
09/10/2010 15:00:00	67.20	1186904	1083	301	0.0	0.0	0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	502
09/10/2010 16:00:00	67.21	1187988	1806	502	0.0	0.0	0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	301



## WIVENHOE/SOMERSET OPERATIONS

data

11/10/2010 05:00:00	67.46	1215416	458	127	0.0	0.0	0	0.0	0.0	1.5	0.0	0.0	0	0	150	0	0	150	303
11/10/2010 06:00:00	67.46	1215416	550	153	0.0	0.0	0	0.0	0.0	1.5	0.0	0.0	0	0	150	0	0	150	303
11/10/2010 07:00:00	67.47	1216516	550	153	0.0	0.0	0	0.0	0.0	1.5	0.0	0.0	0	0	150	0	0	150	252
11/10/2010 08:00:00	67.47	1216516	367	102	0.0	0.0	0	0.0	0.0	1.5	0.0	0.0	0	0	150	0	0	150	607
11/10/2010 09:00:00	67.48	1217615	1646	457	0.0	0.0	0	0.0	0.0	2.0	0.0	0.0	0	0	199	0	0	199	969
11/10/2010 10:00:00	67.50	1219815	2772	770	0.0	0.0	0	0.0	0.0	2.5	0.0	0.0	0	0	246	0	0	246	1332
11/10/2010 11:00:00	67.53	1223163	3909	1086	0.0	0.0	0	0.0	0.0	2.5	0.0	0.0	0	0	247	0	0	247	1668
11/10/2010 12:00:00	67.57	1227627	5115	1421	0.0	0.0	0	0.0	0.0	2.5	0.0	0.0	0	0	247	0	0	247	1849
11/10/2010 13:00:00	67.62	1233207	5766	1602	0.0	0.0	0	0.0	0.0	2.5	0.0	0.0	0	0	248	0	0	248	1564
11/10/2010 14:00:00	67.67	1238786	4739	1316	0.0	0.0	0	0.0	0.0	2.5	0.0	0.0	0	0	249	0	0	249	1880
11/10/2010 15:00:00	67.71	1243250	5875	1632	0.0	0.0	0	0.0	0.0	2.5	0.0	0.0	0	0	249	0	0	249	2860
11/10/2010 16:00:00	67.78	1251110	9401	2611	0.0	0.0	0	0.0	0.0	2.5	0.0	0.0	0	0	250	0	0	250	2975
11/10/2010 17:00:00	67.87	1261298	9812	2725	0.0	0.0	0	0.0	0.0	2.5	0.0	0.0	0	0	251	0	0	251	2851
11/10/2010 18:00:00	67.95	1270353	9361	2600	0.0	0.0	0	0.0	0.0	2.5	0.0	0.0	0	0	252	0	0	252	2102
11/10/2010 19:00:00	68.03	1279457	6661	1850	0.0	0.0	0	0.0	0.0	2.5	0.0	0.0	0	0	253	0	0	253	1770
11/10/2010 20:00:00	68.07	1284049	5460	1517	0.0	0.0	0	0.0	0.0	2.5	0.0	0.0	0	0	253	0	0	253	2007
11/10/2010 21:00:00	68.13	1290938	6314	1754	0.0	0.0	0	0.0	0.0	2.5	0.0	0.0	0	0	254	0	0	254	2138
11/10/2010 22:00:00	68.18	1296678	6783	1884	0.0	0.0	0	0.0	0.0	2.5	0.0	0.0	0	0	255	0	0	255	2610
11/10/2010 23:00:00	68.25	1304714	8478	2355	0.0	0.0	0	0.0	0.0	2.5	0.0	0.0	0	0	256	0	0	256	2171
12/10/2010 00:00:00	68.32	1312862	6897	1916	0.0	0.0	0	0.0	0.0	2.5	0.0	0.0	0	0	256	0	0	256	1981
12/10/2010 01:00:00	68.37	1318682	6208	1725	0.0	0.0	0	0.0	0.0	2.5	0.0	0.0	0	0	257	0	0	257	2222
12/10/2010 02:00:00	68.43	1325667	7074	1965	0.0	0.0	0	0.0	0.0	2.5	0.0	0.0	0	0	258	0	0	258	2209
12/10/2010 03:00:00	68.49	1332651	7024	1951	0.0	0.0	0	0.0	0.0	2.5	0.0	0.0	0	0	258	0	0	258	2



## WIVENHOE/SOMERSET OPERATIONS

data

13/10/2010 18:00:00	69.57	1462978	-1348	-374	0.0	0.0	0	1.5	2.5	4.0	2.5	1.5	164	271	422	271	164	1292	1148
13/10/2010 19:00:00	69.56	1461734	-519	-144	0.0	0.0	0	1.5	2.5	4.5	2.5	1.5	164	271	470	271	164	1340	1225
13/10/2010 20:00:00	69.56	1461734	-415	-115	0.0	0.0	0	1.5	2.5	4.5	2.5	1.5	164	271	470	271	164	1340	735
13/10/2010 21:00:00	69.55	1460489	-2178	-605	0.0	0.0	0	2.0	2.5	4.5	2.5	1.5	218	271	470	271	164	1393	1048
13/10/2010 22:00:00	69.53	1458000	-1244	-346	0.0	0.0	0	2.0	2.5	4.5	2.5	1.5	218	270	470	270	164	1392	1306
13/10/2010 23:00:00	69.53	1458000	-311	-86	0.0	0.0	0	2.0	2.5	4.5	2.5	1.5	218	270	470	270	164	1392	844
14/10/2010 00:00:00	69.52	1456756	-1973	-548	0.0	0.0	0	2.0	2.5	4.5	2.5	1.5	218	270	469	270	164	1391	676
14/10/2010 01:00:00	69.50	1454267	-2577	-716	0.0	0.0	0	2.0	2.5	4.5	2.5	2.0	217	270	469	270	217	1444	762
14/10/2010 02:00:00	69.48	1451810	-2454	-682	0.0	0.0	0	2.0	2.5	4.5	2.5	2.0	217	270	469	270	217	1443	789
14/10/2010 03:00:00	69.46	1449353	-2354	-654	0.0	0.0	0	2.0	2.5	4.5	2.5	2.0	217	270	468	270	217	1441	560
14/10/2010 04:00:00	69.44	1446897	-3173	-881	0.0	0.0	0	2.5	2.5	4.5	2.5	2.0	269	269	468	269	217	1493	668
14/10/2010 05:00:00	69.41	1443211	-2969	-825	0.0	0.0	0	2.5	2.5	4.5	2.5	2.0	269	269	467	269	217	1491	410
14/10/2010 06:00:00	69.39	1440755	-3890	-1081	0.0	0.0	0	2.5	2.5	4.5	2.5	2.0	269	269	467	269	216	1489	636
14/10/2010 07:00:00	69.35	1435841	-3071	-853	0.0	0.0	0	2.5	2.5	4.5	2.5	2.0	268	268	466	268	216	1487	861
14/10/2010 08:00:00	69.34	1434613	-2252	-626	0.0	0.0	0	2.5	2.5	4.5	2.5	2.0	268	268	466	268	216	1486	576
14/10/2010 09:00:00	69.31	1430927	-3276	-910	0.0	0.0	0	2.5	2.5	4.5	2.5	2.0	268	268	465	268	216	1484	858
14/10/2010 10:00:00	69.29	1428471	-2253	-626	0.0	0.0	0	2.5	2.5	4.5	2.5	2.0	268	268	465	268	216	1483	603
14/10/2010 11:00:00	69.27	1426014	-3167	-880	0.0	0.0	0	2.5	2.5	4.5	2.5	2.0	267	267	464	267	215	1482	635
14/10/2010 12:00:00	69.24	1422345	-3047	-846	0.0	0.0	0	2.5	2.5	4.5	2.5	2.0	267	267	464	267	215	1480	667
14/10/2010 13:00:00	69.22	1419920	-2927	-813	0.0	0.0	0	2.5	2.5	4.5	2.5	2.0	267	267	463	267	215	1479	440
14/10/2010 14:00:00	69.19	1416282	-3738	-1038	0.0	0.0	0	2.5	2.5	4.5	2.5	2.0	267	267	462	267	215	1477	466
14/10/2010 15:00:00	69.16	1412645	-3637	-1010	0.0	0.0	0	2.5	2.5	4.5	2.5	2.0	266	266	462	266	214	1475	436



## WIVENHOE/SOMERSET OPERATIONS

data

16/10/2010 07:00:00	67.90	1264693	-4151	-1153	0.0	0.0	0	1.5	2.5	4.5	2.5	1.5	153	251	434	251	153	1242	482																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
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## WIVENHOE/SOMERSET OPERATIONS

data

[illegible]

[illegible]



**Flood Event 25 Dec 2010**  
**Duty Roster**

Start	Finish		Duty Engineer		Data Collector	
Sat 25/12/2010 07:00	Sat 25/12/2010 10:00		Terry Malone	Confirmed	Al Navruk	Confirmed
Sat 25/12/2010 19:00	Sun 26/12/2010 07:00	Night	John Tibaldi	Confirmed	xxxxx	
Sun 26/12/2010 07:00	Sun 26/12/2010 19:00		Rob Ayre	Confirmed	Al Navruk	Confirmed
Sun 26/12/2010 19:00	Mon 27/12/2010 07:00	Night	John Tibaldi	Confirmed	Kim Hang	Confirmed
Mon 27/12/2010 07:00	Mon 27/12/2010 19:00		Terry Malone	Confirmed	David Pokarier	Confirmed
Mon 27/12/2010 19:00	Tue 28/12/2010 07:00	Night	John Tibaldi	Confirmed	Neville Ablitt	Confirmed
Tue 28/12/2010 07:00	Tue 28/12/2010 19:00		Terry Malone	Confirmed	Lou van Blerk	Confirmed
Tue 28/12/2010 19:00	Wed 29/12/2010 07:00	Night	John Ruffini	Confirmed	John West	Confirmed
Wed 29/12/2010 07:00	Wed 29/12/2010 19:00		Terry Malone	Confirmed	Mark Tan	Confirmed
Wed 29/12/2010 19:00	Thu 30/12/2010 07:00	Night	Rob Ayre	Confirmed	Al Navruk	Confirmed
Thu 30/12/2010 07:00	Thu 30/12/2010 19:00		Terry Malone	Confirmed	Kim Hang	Confirmed
Thu 30/12/2010 19:00	Fri 31/12/2010 07:00	Night	John Ruffini	Confirmed	David Pokarier	Confirmed
Fri 31/12/2010 07:00	Fri 31/12/2010 19:00		Terry Malone	Confirmed	Neville Ablitt	Confirmed
Fri 31/12/2010 19:00	Sat 01/01/2011 07:00	Night	John Ruffini	Confirmed	Lou van Blerk	Confirmed
Sat 01/01/2011 07:00	Sat 01/01/2011 19:00		Terry Malone	Confirmed	John West	Confirmed
Sat 01/01/2011 19:00	Sun 02/01/2011 07:00	Night	Rob Ayre	Confirmed	Mark Tan	Confirmed
Sun 02/01/2011 07:00	Sun 02/01/2011 09:45		Terry Malone	Confirmed	Al Navruk	Confirmed



Date/Time	Lake Level	Storage	remental Inf		Outflow													Inflow	
					Regulators			Gates Settings					Gate Discharges						Total
					1	Hyd ro	Total	1	2	3	4	5	1	2	3	4	5		
	m AHD	ML	ML	m³/s				m	m	m	m	m	m³/s	m³/s	m³/s	m³/s	m³/s	m³/s	m³/s
23/12/2010 09:00:00	67.27	1194521			0.0	13.0	13	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	13	0
23/12/2010 10:00:00	67.20	1186904		0	0.0	13.0	13	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	13	26
23/12/2010 11:00:00	67.25	1192321	2530	703	0.0	13.0	13	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	13	729
23/12/2010 12:00:00	67.23	1190154	-1715	-476	0.0	13.0	13	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	13	0
23/12/2010 13:00:00	67.23	1190154	181	50	0.0	13.0	13	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	13	76
23/12/2010 14:00:00	67.23	1190154	0	0	0.0	13.0	13	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	13	26
23/12/2010 15:00:00	67.23	1190154	0	0	0.0	13.0	13	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	13	26
23/12/2010 16:00:00	67.23	1190154	0	0	0.0	13.0	13	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	13	26
23/12/2010 17:00:00	67.23	1190154	90	25	0.0	13.0	13	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	13	51
23/12/2010 18:00:00	67.23	1190154	-542	-150	0.0	13.0	13	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	13	0
23/12/2010 19:00:00	67.22	1189071	-1264	-351	0.0	13.0	13	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	13	0
23/12/2010 20:00:00	67.21	1187988	-361	-100	0.0	13.0	13	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	13	0
23/12/2010 21:00:00	67.21	1187988	-1083	-301	0.0	13.0	13	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	13	0
23/12/2010 22:00:00	67.19	1185821	-1806	-502	0.0	13.0	13	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	13	0
23/12/2010 23:00:00	67.18	1184738	-993	-276	0.0	13.0	13	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	13	0
24/12/2010 00:00:00	67.17	1183654	-1083	-301	0.0	13.0	13	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	13	0
24/12/2010 01:00:00	67.16	1182571	-1174	-326	0.0	13.0	13	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	13	0
24/12/2010 02:00:00	67.15	1181488	-542	-150	0.0	13.0	13	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	13	0
24/12/2010 03:00:00	67.15	1181488	181	50	0.0	13.0	13	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	13	76
24/12/2010 04:00:00	67.15	1181488	-542	-150	0.0	13.0	13	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	13	0
24/12/2010 05:00:00	67.14	1180404	-1264	-351	0.0	13.0	13	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	13	0
24/12/2010 06:00:00	67.13	1179321	-451	-125	0.0	13.0	13	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	13	0
24/12/2010 07:00:00	67.13	1179321	-542	-150	0.0	13.0	13	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	13	0
24/12/2010 08:00:00	67.12	1178238	-451	-125	0.0	13.0	13	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	13	0
24/12/2010 09:00:00	67.12	1178238	-1174	-326	0.0	13.0	13	0.0	0.0	2.5	0.0	0.0	0	0	242	0	0	255	0
24/12/2010 10:00:00	67.10	1176071	-1354	-376	0.0	13.0	13	0.0	0.0	2.0	0.0	0.0	0	0	195	0	0	208	0
24/12/2010 11:00:00	67.10	1176071	812	226	0.0	13.0	13	0.0	0.0	1.5	0.0	0.0	0	0	147	0	0	160	399
24/12/2010 12:00:00	67.11	1177155	542	150	0.0	13.0	13	0.0	0.0	1.0	0.0	0.0	0	0	99	0	0	112	275
24/12/2010 13:00:00	67.11	1177155	451	125	0.0	13.0	13	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	13	151
24/12/2010 14:00:00	67.12	1178238	1174	326	0.0	13.0	13	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	13	352
24/12/2010 15:00:00	67.13	1179321	1083	301	0.0	13.0	13	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	13	327
24/12/2010 16:00:00	67.14	1180404	1083	301	0.0	13.0	13	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	13	327
24/12/2010 17:00:00	67.15	1181488	1083	301	0.0	13.0	13	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	13	327
24/12/2010 18:00:00	67.16	1182571	1083	301	0.0	13.0	13	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	13	327
24/12/2010 19:00:00	67.17	1183654	1083	301	0.0	13.0	13	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	13	327
24/12/2010 20:00:00	67.18	1184738	1083	301	0.0	13.0	13	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	13	327
24/12/2010 21:00:00	67.19	1185821	1083	301	0.0	13.0	13	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	13	327
24/12/2010 22:00:00	67.20	1186904	1083	301	0.0	13.0	13	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	13	327
24/12/2010 23:00:00	67.21	1187988	1083	301	0.0	13.0	13	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	13	327
25/12/2010 00:00:00	67.22	1189071	1083	301	0.0	13.0	13	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	13	327
25/12/2010 01:00:00	67.23	1190154	1083	301	0.0	13.0	13	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	13	327
25/12/2010 02:00:00	67.24	1191238	1082	301	0.0	13.0	13	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	13	327
25/12/2010 03:00:00	67.25	1192321	1092	303	0.0	13.0	13	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	13	329
25/12/2010 04:00:00	67.26	1193421	1101	306	0.0	13.0	13	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	13	332
25/12/2010 05:00:00	67.27	1194521	1191	331	0.0	13.0	13	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	13	357
25/12/2010 06:00:00	67.28	1195620	550	153	0.0	13.0	13	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	13	179
25/12/2010 07:00:00	67.28	1195620	-183	-51	0.0	13.0	13	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	13	0
25/12/2010 08:00:00	67.28	1195620	642	178	0.0	13.0	13	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	13	204
25/12/2010 09:00:00	67.29	1196720	642	178	0.0	13.0	13	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	13	204
25/12/2010 10:00:00	67.29	1196720	-183	-51	0.0	13.0	13	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	13	0


## Volume Check

Volume of Inflow 512,535 ML

Volume of Outflow 481,021 ML

Storage Difference - 8,699 ML

472,321 ML

92.2%

Peak Inflow 2,200 m³/s

Peak Outflow 1,593 m³/s

Peak Elevation 69.33 m AHD



## WIVENHOE/SOMERSET OPERATIONS

data

25/12/2010 11:00:00	67.29	1196720	642	178	0.0	13.0	13	0.0	0.0	0.0	0.0	0	0	0	0	0	13	204
25/12/2010 12:00:00	67.30	1197820	642	178	0.0	13.0	13	0.0	0.0	0.0	0.0	0	0	0	0	0	13	204
25/12/2010 13:00:00	67.30	1197820	-92	-25	0.0	13.0	13	0.0	0.0	0.0	0.0	0	0	0	0	0	13	0
25/12/2010 14:00:00	67.30	1197820	-92	-25	0.0	13.0	13	0.0	0.0	0.0	0.0	0	0	0	0	0	13	0
25/12/2010 15:00:00	67.30	1197820	642	178	0.0	13.0	13	0.0	0.0	0.0	0.0	0	0	0	0	0	13	204
25/12/2010 16:00:00	67.31	1198920	642	178	0.0	13.0	13	0.0	0.0	0.0	0.0	0	0	0	0	0	13	204
25/12/2010 17:00:00	67.31	1198920	-183	-51	0.0	13.0	13	0.0	0.0	0.0	0.0	0	0	0	0	0	13	0
25/12/2010 18:00:00	67.31	1198920	642	178	0.0	13.0	13	0.0	0.0	0.0	0.0	0	0	0	0	0	13	204
25/12/2010 19:00:00	67.32	1200019	642	178	0.0	13.0	13	0.0	0.0	0.0	0.0	0	0	0	0	0	13	204
25/12/2010 20:00:00	67.32	1200019	-183	-51	0.0	13.0	13	0.0	0.0	0.0	0.0	0	0	0	0	0	13	0
25/12/2010 21:00:00	67.32	1200019	642	178	0.0	13.0	13	0.0	0.0	0.0	0.0	0	0	0	0	0	13	204
25/12/2010 22:00:00	67.33	1201119	642	178	0.0	13.0	13	0.0	0.0	0.0	0.0	0	0	0	0	0	13	204
25/12/2010 23:00:00	67.33	1201119	-92	-25	0.0	13.0	13	0.0	0.0	0.0	0.0	0	0	0	0	0	13	0
26/12/2010 00:00:00	67.33	1201119	-92	-25	0.0	13.0	13	0.0	0.0	0.0	0.0	0	0	0	0	0	13	0
26/12/2010 01:00:00	67.33	1201119	642	178	0.0	13.0	13	0.0	0.0	0.0	0.0	0	0	0	0	0	13	204
26/12/2010 02:00:00	67.34	1202219	642	178	0.0	13.0	13	0.0	0.0	0.0	0.0	0	0	0	0	0	13	204
26/12/2010 03:00:00	67.34	1202219	-183	-51	0.0	13.0	13	0.0	0.0	0.0	0.0	0	0	0	0	0	13	0
26/12/2010 04:00:00	67.34	1202219	642	178	0.0	13.0	13	0.0	0.0	0.0	0.0	0	0	0	0	0	13	204
26/12/2010 05:00:00	67.35	1203319	642	178	0.0	13.0	13	0.0	0.0	0.0	0.0	0	0	0	0	0	13	204
26/12/2010 06:00:00	67.35	1203319	-92	-25	0.0	13.0	13	0.0	0.0	0.0	0.0	0	0	0	0	0	13	0
26/12/2010 07:00:00	67.35	1203319	0	0	0.0	13.0	13	0.0	0.0	0.0	0.0	0	0	0	0	0	13	26
26/12/2010 08:00:00	67.35	1203319	-92	-25	0.0	13.0	13	0.0	0.0	0.0	0.0	0	0	0	0	0	13	0
26/12/2010 09:00:00	67.35	1203319	642	178	0.0	13.0	13	0.0	0.0	0.5	0.0	0	0	50	0	0	63	254
26/12/2010 10:00:00	67.36	1204418	642	178	0.0	13.0	13	0.0	0.0	2.5	0.0	0	0	245	0	0	258	449
26/12/2010 11:00:00	67.36	1204418	-183	-51	0.0	13.0	13	0.0	0.0	3.5	0.0	0	0	336	0	0	349	311
26/12/2010 12:00:00	67.36	1204418	642	178	0.0	13.0	13	0.0	0.0	3.5	0.0	0	0	336	0	0	349	540
26/12/2010 13:00:00	67.37	1205518	642	178	0.0	13.0	13	0.0	0.0	3.5	0.0	0	0	336	0	0	349	540
26/12/2010 14:00:00	67.37	1205518	-92	-25	0.0	13.0	13	0.0	0.0	3.5	0.0	0	0	336	0	0	349	336
26/12/2010 15:00:00	67.37	1205518	-92	-25	0.0	13.0	13	0.0	0.0	3.5	0.0	0	0	336	0	0	349	336
26/12/2010 16:00:00	67.37	1205518	642	178	0.0	13.0	13	0.0	0.0	3.5	0.0	0	0	336	0	0	349	540
26/12/2010 17:00:00	67.38	1206618	458	127	0.0	13.0	13	0.0	0.0	3.5	0.0	0	0	336	0	0	349	489
26/12/2010 18:00:00	67.38	1206618	1008	280	0.0	13.0	13	0.0	0.0	3.5	0.0	0	0	336	0	0	349	642
26/12/2010 19:00:00	67.40	1208817	2291	636	0.0	13.0	13	0.0	0.0	3.5	0.0	0	0	336	0	0	349	999
26/12/2010 20:00:00	67.42	1211017	2841	789	0.0	13.0	13	0.0	0.0	3.0	0.0	0	0	292	0	0	305	1107
26/12/2010 21:00:00	67.45	1214316	3024	840	0.0	13.0	13	0.0	0.0	3.0	0.0	0	0	292	0	0	305	1158
26/12/2010 22:00:00	67.47	1216516	825	229	0.0	13.0	13	0.0	0.0	2.5	0.0	0	0	246	0	0	259	501
26/12/2010 23:00:00	67.47	1216516	915	254	0.0	13.0	13	0.0	0.0	2.5	0.0	0	0	246	0	0	259	526
27/12/2010 00:00:00	67.49	1218715	2576	715	0.0	13.0	13	0.0	0.0	2.0	0.0	0	0	199	0	0	212	940
27/12/2010 01:00:00	67.51	1220931	737	205	0.0	13.0	13	0.0	0.0	2.0	0.0	0	0	199	0	0	212	430
27/12/2010 02:00:00	67.51	1220931	2326	646	0.0	13.0	13	0.0	0.0	2.0	0.0	0	0	199	0	0	212	871
27/12/2010 03:00:00	67.55	1225395	3162	878	0.0	13.0	13	0.0	0.0	1.5	0.0	0	0	150	0	0	163	1055
27/12/2010 04:00:00	67.56	1226511	744	207	0.0	13.0	13	0.0	0.0	1.5	0.0	0	0	150	0	0	163	383
27/12/2010 05:00:00	67.57	1227627	1674	465	0.0	13.0	13	0.0	0.0	1.0	0.0	0	0	101	0	0	114	592
27/12/2010 06:00:00	67.59	1229859	2325	646	0.0	13.0	13	0.0	0.0	1.0	0.0	0	0	101	0	0	114	773
27/12/2010 07:00:00	67.61	1232091	2139	594	0.0	13.0	13	0.0	0.0	0.5	0.0	0	0	50	0	0	63	671
27/12/2010 08:00:00	67.63	1234322	2790	775	0.0	13.0	13	0.0	0.0	0.5	0.0	0	0	50	0	0	63	851
27/12/2010 09:00:00	67.66	1237670	3441	956	0.0	13.0	13	0.0	0.0	0.5	0.0	0	0	51	0	0	64	1032
27/12/2010 10:00:00	67.69	1241018	3441	956	0.0	13.0	13	0.0	0.0	0.5	0.0	0	0	51	0	0	64	1032
27/12/2010 11:00:00	67.72	1244366	2600	722	0.0	13.0	13	0.0	0.0	0.5	0.0	0	0	51	0	0	64	799
27/12/2010 12:00:00	67.74	1246598	3089	858	0.0	13.0	13	0.0	0.0	0.5	0.0	0	0	51	0	0	64	935
27/12/2010 13:00:00	67.78	1251110	6408	1780	0.0	13.0	13	0.0	0.0	0.5	0.0	0	0	51	0	0	64	1857
27/12/2010 14:00:00	67.84	1257902	3020	839	0.0	13.0	13	0.0	0.0	0.5	0.0	0	0	51	0	0	64	916
27/12/2010 15:00:00	67.84	1257902	2830	786	0.0	13.0	13	0.0	0.0	0.5	0.0	0	0	51	0	0	64	863
27/12/2010 16:00:00	67.90	1264693	7641	2122	0.0	13.0	13	0.0	0.0	0.5	0.0	0	0	51	0	0	64	2200
27/12/2010 17:00:00	67.96	1271485	4900	1361	0.0	13.0	13	0.0	0.0	0.5	0.0	0	0	51	0	0	64	1438
27/12/2010 18:00:00	67.99	1274881	4276	1188	0.0	13.0	13	0.0	0.0	0.5	0.0	0	0	51	0	0	64	1265



## WIVENHOE/SOMERSET OPERATIONS

data

27/12/2010 19:00:00	68.04	1280605	5926	1646	0.0	13.0	13	0.0	0.0	0.5	0.0	0.0	0	0	51	0	0	64	1724																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										</
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## WIVENHOE/SOMERSET OPERATIONS

data

03/01/2011 18:00:00	67.17	1183654	-90	-25	27.0	13.0	40	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	40	55								
03/01/2011 19:00:00	67.17	1183654	0	0	27.0	13.0	40	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	40	80								
03/01/2011 20:00:00	67.17	1183654	0	0	27.0	13.0	40	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	40	80								
03/01/2011 21:00:00	67.17	1183654	-90	-25	27.0	13.0	40	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	40	55								
03/01/2011 22:00:00	67.17	1183654	632	176	27.0	13.0	40	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	40	256								
03/01/2011 23:00:00	67.18	1184738	632	176	27.0	13.0	40	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	40	256								
04/01/2011 00:00:00	67.18	1184738	-90	-25	27.0	13.0	40	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	40	55								
04/01/2011 01:00:00	67.18	1184738	0	0	27.0	13.0	40	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	40	80								
04/01/2011 02:00:00	67.18	1184738	0	0	27.0	13.0	40	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	40	80								
04/01/2011 03:00:00	67.18	1184738	-90	-25	27.0	13.0	40	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	40	55								
04/01/2011 04:00:00	67.18	1184738	632	176	27.0	13.0	40	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	40	256								
04/01/2011 05:00:00	67.19	1185821	632	176	27.0	13.0	40	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	40	256								
04/01/2011 06:00:00	67.19	1185821	-90	-25	27.0	13.0	40	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	40	55								
04/01/2011 07:00:00	67.19	1185821	0	0	27.0	13.0	40	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	40	80								
04/01/2011 08:00:00	67.19	1185821		0	27.0	13.0	40	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	40	80								
04/01/2011 09:00:00	67.19	1185821		0	27.0	13.0	40	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	40	80								

BRISBANE • MELBOURNE • SYDNEY



1 March 2012

Queensland Floods Commission of Enquiry  
PO Box 1738  
**BRISBANE QLD 4001**

Attention: Ms Kyla Hayden and Ms Lyn Moon

Dear Ms Hayden and Ms Moon

**Queensland Floods Commission of Inquiry**

We refer to your letter of 28 February 2012 regarding the spreadsheet exhibited to Mr Ayre's Sixth Statement dated 30 January 2012 (exhibit 1048).

We enclose our clients' response.

Yours sincerely

A handwritten signature in blue ink that reads "Holding Redlich".

**HOLDING REDLICH**

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## QUEENSLAND FLOODS COMMISSION OF INQUIRY

### RESPONSE OF MR AYRE AND SUNWATER LIMITED

#### Request for a response

1. On 28 February 2012 the Commission sent a letter to Holding Redlich Lawyers seeking Mr Ayre's response and any submissions in relation to the spreadsheet titled 'SDWD-201101190700-RAComments' ("the spreadsheet").
2. The spreadsheet was included on the CD-Rom which is Exhibit 2 to Mr Ayre's Sixth Statement (which became Exhibit 1048 in the Commission). That statement (and the documents attached to it) was provided in response to the requirement issued by the Commission on 25 January 2012.
3. Mr Ayre does not recall naming the spreadsheet, but he believes that the name "SDWD-201101190700-RAComments" derives from the following:
  - a. The document is an excel spreadsheet, that appears to have been started as one of the gate operations spreadsheets.
  - b. The term "RA-comments" was probably added to the existing name of the document by Mr Ayre so as to identify it for himself as a copy which includes his own comments.
  - c. "SDWD" followed by a number by reference to a date indicates that the document was originally a gate operations spreadsheet for Somerset Dam and Wivenhoe Dam;
  - d. The numbers found in the name of the gate operations spreadsheet by convention refer to the last date of rainfall data recorded. For example, a spreadsheet which is saved with the number "20110119" usually means that the recorded rainfall

information is up to and including 19 January 2011. Mr Ayre has no reason to believe that that was not the reason for the number in the name of this spreadsheet;

- e. The date and time referred to in the file name is not necessarily the date and time that the document was created. The annotations to the spreadsheet were unlikely to have been made on 19 January 2011 as Mr Ayre was not rostered on duty that day, however, the document is still given that name because it follows the naming convention;
  - f. The number "0700" in the name of a gate operations spreadsheet follows the same naming convention, and represents the time that the relevant rainfall model was made.
4. Mr Ayre has no independent recollection of when he annotated this spreadsheet. He believes that it was likely to be after 19 January 2011, and notes, but cannot confirm the information contained in the letter from the Commission that the document was created and last modified on 19 February 2011 at 11.57.22am.
5. The only evidence about the spreadsheet is that Mr Ayre created the spreadsheet as his own 'aide'.<sup>1</sup> It was not a formal document or record, and was not relied upon or put forward by Mr Ayre as being an accurate account of the flood event.
6. We are instructed that:
- a. Mr Ayre created the spreadsheet as a working document. He annotated the spreadsheet with comments as his own working notes about the flood event well after the event. Mr Ayre instructs that those comments were not finalized, and remained in draft form, as he did not complete his review of the event in this particular document. Mr Ayre instructs that he completed his review of the event in the document titled "Schedule 1" to his

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<sup>1</sup> See paragraph 16 of Sixth Statement of Robert Ayre, 30 January 2012, (Exhibit 1048)



Supplementary Statement dated 23 March 2011. That document was finalized after a complete review of the flood event and all of the necessary data.

- b. Mr Ayre did not annotate the spreadsheet during the flood event.
  - c. The comments annotated in the spreadsheet are Mr Ayre's preliminary shorthand notes.
  - d. In annotating the spreadsheet, Mr Ayre has engaged in a post event analysis. Mr Ayre believes that in working on the spreadsheet, he reviewed some of the data (but not all of the data), and then inserted comments at various points to enable him to see, in a preliminary way, the progression of the event in timeline form.
  - e. Mr Ayre did not prepare that document with the intention that it be relied upon by others as being an official final account. He did not provide the document to any of the other flood engineers.
  - f. Mr Ayre did not annotate the document in consultation with any of the other flood engineers.
7. In respect to the comments contained in the spreadsheet, we are instructed that Mr Ayre cannot now recall why he included individual comments in the places that he did or why he included the words that he did in those comments. In particular, he cannot recall precisely what data or other information he had regard to in drafting those comments.
8. His recollection, however, is that the process he adopted was not (and was not intended to be) a detailed, complete review of all of the data that was necessary to be able to create a definitive analysis of the event.
9. Mr Ayre acknowledges that the spreadsheet wrongly attributes strategy labels for the event in places. However, as said above, it was not intended to be (and it is not) a definitive and detailed analysis of the

flood event. It was a starting point in his personal review of the event, not the final conclusion.

### **Submissions**

10. We submit that the annotations to the spreadsheet should not be used to determine what Mr Ayre's state of mind was during the flood event because.
  - a. They are not a contemporaneous record, but were created post event.
  - b. The spreadsheet was not annotated following a complete review of all the data, and was not intended to be anything other than Mr Ayre's own initial working notes as an aide on reviewing that data.
  - c. The annotations were not prepared for others or provided to any of the other flood engineers for comment or review.
  - d. The annotations were not presented to management as a record of the event.
  - e. The annotations were not prepared for the purposes of providing the complete account of the event, nor, given the magnitude of such a task, could this single sample be expected to be complete and final.
  - f. The method used in annotating the spreadsheet, by inserting comments, is consistent with this being a preliminary analysis of the event, rather than a final or settled account of the event, which might find its place in a dedicated column.
  - g. The annotations had not undergone the careful reviewing process, editing and cross checking that would be expected in a final version.

### **What use can be made of the spreadsheet?**

11. We submit that the annotations to the spreadsheet can be used to make the following findings:
  - a. That Mr Ayre undertook a post event analysis;
  - b. That the analysis was for his own edification, and was preliminary in nature;
  - c. That the analysis as exemplified in the annotations contained in the spreadsheet was not a detailed review of all of the data;
  - d. That that analysis contained in the spreadsheet is an initial draft with working notes.
  - e. That analysis was not completed in the spreadsheet, but rather, was finalized in the spreadsheets contained in Schedule 1 of Mr Ayre's supplementary statement sworn 23 March 2011.
  - f. When, after an event, one makes a record of preliminary observations, it is common for there to be omissions and that corrections will need to be made at a later time when all data is available. There is nothing sinister in this.
12. We submit that the annotations to the spreadsheet should not be used to make any findings that:
  - a. Those annotations are evidence of Mr Ayre's state of mind as to strategies actually used during the flood event; or
  - b. The spreadsheet is evidence of Mr Ayre's having reached a final conclusion, post event, as to what strategies were being applied at particular times.