

Statement of Kenneth John Morris

I, **Kenneth John Morris**, Civil Engineer, of [REDACTED] Brisbane, in the State of Queensland, state on oath as follows:

Introduction

1. Attachment "**KJM-1**" is a copy of a notice from the Commissioner of the Queensland Floods Commission of Inquiry (**Commission**) requiring me to provide a statement to the Commission by 12 noon 1 April 2001 (**Notice**).
2. I am informed that the Commission has advised that the Notice will be taken to have been complied with if by 4 April 2011, I provide:
 - (a) a summary of my communications with the Flood Operations Centre (**FOC**) between 1 October 2010 and 6 January 2011; and
 - (b) an account of my communications with FOC, verbatim where possible, and annexing copies of relevant documents, between 6 January 2011 and 19 January 2011.
3. The Commission has identified certain individuals (and their respective email addresses and a generic email address) as comprising FOC between 1 October 2010 and 19 January 2011. Those names and the generic email address are - Rob Ayre, John Ruffini, John Tibaldi, Terry Malone, Mark Tan, Neville Ablitt, Lou van Blerk, Albert Navruk, Kim Hang, Bill Stephens John West, David Pokarier, Ken Price and [REDACTED]
4. In the time provided to respond to the Notice I have, relevantly:
 - (a) extracted and reviewed the emails from my Brisbane City Council (**Council**) email account to and from FOC during the relevant period;
 - (b) reviewed the Council Flood Information Centre (**FIC**) Log; and
 - (c) reviewed the FOC "Event Log", a redacted version of which appears as Appendix M to the report dated 2 March 2011, prepared by the Queensland Bulk Water Supply Authority trading as Seqwater (**Seqwater**) and titled "*January 2011 Flood Event - Report on the operation of Somerset Dam and Wivenhoe Dam*". An un-redacted version was provided by the Commission today. This statement refers to that un-redacted version (**Seqwater Log**).

[REDACTED]
Kenneth John Morris

[REDACTED]
Witness

5. In preparing this statement I have not had access to any other statements prepared by parties with leave to appear before the Commission. In particular, I have not read any statements of the FOC engineers.
6. The information set out below represents my best present recollection of events, given the time available to me and with the benefit of having reviewed the documents mentioned above.

Roles within Council

7. My qualifications include the following:
- (a) Bachelor of Engineer (Hons), University of New South Wales;
 - (b) Master of Engineering Science, University of Queensland; and
 - (c) Graduate Diploma of Business Administration, Queensland Institute of Technology.
8. I am a qualified civil engineer specialising in hydrology and hydraulics and have been employed by Council since 1977. During my employment with the Council, I received the Lord Mayor's Award for Excellence for the development of FloodWise.
9. During the period from October 2010 to January 2011, my role was Principal Engineer, Water & Environment, City Design at Council. I have held this position for approximately two years.
10. Prior to this role I was the Product Principal for the Flood Management Section of Water & Environment, City Design. This is effectively the senior management position in that Section. I was in that role since commencing employment with Council in 1977, though my title changed from time to time.
11. Prior to my employment with the Council, I held the following positions:
- (a) Engineer Class 2, Hydrometeorology, Bureau of Meteorology in Brisbane from 1975 to 1977;
 - (b) Senior Engineer, Cameron McNamara and Partners in Brisbane from 1969 to 1975; and
 - (c) Engineer, Contracts, Thiess Bros Pty Ltd in Brisbane in 1969.


Kenneth John Morris


Witness

The Council

12. Relevant to the matters the subject of this statement, the structure of Council is as follows. The responsibility for preparation for management of flood and potential flood events is with the Local Disaster Coordination Centre (LDCC) and the Flood Information Centre (FIC). The organisation and operation of the LDCC, its interaction with the Local Disaster Management Group and with other internal and external agencies involved in flood and disaster management is dealt with in detail, on my understanding, in the Council's 11 March 2011 Submission to the Commission. I will not deal with that further in this statement.
13. For the purposes of this statement, it is also desirable to have an understanding of the Section of Council to which I belong. Until recently (see above), I was the Principal Engineer responsible for the Flood Management Section of City Design. City Design provides advice and consulting services to other sections of Council. My part of City Design (and its predecessor divisions of Council) is responsible for advice and consulting services in respect of flood management.

Flood Information Centre

14. I am the Director of Council's FIC. Responsibility for this role has been with me ever since I joined the Council in 1977.
15. The FIC becomes operative when a Brisbane River flood is threatened. The role of the FIC is to interpret the Bureau of Meteorology (BoM) forecasts into detailed effects on Brisbane City and to provide information about those matters to the LDCC (which uses the information for public announcements), and directly to the public of Brisbane through the Council's Call Centre which allows residents to find out what the likely impact of a flood event is on their property.
16. During a flood event the FIC is managed by an engineer known as the controller who is responsible for the FIC's operations during that person's shift. The controllers of FIC are drawn from senior engineers of the Flood Management Section. They are assisted in the conduct the FIC's operations by a team of engineers, technicians and administrative staff.
17. In December 2010, the Flood Management Section was directed, through the Lord Mayor and the Chief Executive Officer of Council, to initiate an intermediate level of flood preparedness by the rostering of an On-call Duty Engineer to be available 24 hours a day, 7 days a week to respond as required to any impending flood-related threat. It was my understanding that this related to concerns held by the Lord Mayor and Council about flooding. The On-call Duty


Kenneth John Morris


Witness

Engineers were members of the Flood Management Section, including myself from time to time.

18. The On-call Duty Engineer was involved in discussions with FOC regarding dam releases during the period from 1 October 2010 to 9 January 2011 (including as part of the LDCC on 9 January 2011). FIC was formally activated when it stood up on the morning of 10 January 2011.

Relevant agencies to Flood Management

19. There are a number of agencies involved in the management of flood events for the Brisbane River including Seqwater, the BoM, Council, Ipswich City Council, Somerset Regional Council, and relevant State Government agencies.
20. I am aware that a Protocol for communications between the above agencies was developed in late 2010. I deal with that further below. While, to my knowledge, a formal document has not yet been adopted, I understood that agreement had been reached in substance as to this Protocol. The flood intervened before it was formally adopted, although so far as I could see, the management of the flood occurred on the basis of it, and as if it had been formally adopted. Attachment "**KJM-2**" is a copy of the "Protocol for the Communication of Flooding information for the Brisbane River Catchment- including floodwater releases from Wivenhoe and Somerset dams" (**Protocol**).
21. The genesis of the Protocol and the circumstances surrounding its development are set out starting at paragraph 26 below.
22. The Protocol accurately describes my understanding of the roles and responsibilities of various agencies. I summarise below descriptions of those roles and responsibilities for the relevant agencies as appear in the Protocol.
23. BoM is the agency responsible for, amongst other things, the provision of weather forecasts and warnings for Brisbane River and its major tributaries. These warnings include rainfall forecast for the Brisbane catchment and predicted River heights (e.g. Tropical Cyclone, Severe Weather, Severe Thunderstorm, Flood). River height predictions are agreed by BoM in consultation with Seqwater and Council, as required. In the event of heavy rain and run-off in the Wivenhoe and/or Somerset Dam catchments, BoM and Seqwater discuss modelled inflows to Wivenhoe and/or Somerset Dam, and downstream flood levels.


Kenneth John Morris

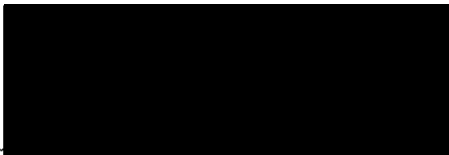

Witness

24. Seqwater:

- (a) is responsible for operating and maintaining the Wivenhoe and Somerset Dams in accordance with the Manual of Operational Procedures for Flood Mitigation at Wivenhoe Dam and Somerset Dam (**Manual**);
- (b) provides dam outflow information to BoM to allow the development of flood warnings and to Council, to assist Council to quantify likely impacts within its local government area;
- (c) informs BoM and Council on the status of the dams, and actual and projected releases from Wivenhoe and Somerset Dams;
- (d) consults BoM regarding inflow to the Dams and expected flood heights along the Brisbane river downstream of Wivenhoe Dam;
- (e) coordinates the production of Technical Situation Reports relating to floodwater releases from the Wivenhoe and Somerset Dams;
- (f) discusses and models implications of the inflows on the necessary floodwater release from the Dams. The floodwater release strategy is a balance between releasing the water quickly enough so the flood storage capacity is available if another major rain event occurs versus minimising downstream flooding impacts (human safety and property damage) from the releases;
- (g) shares predicted floodwater releases with BoM and Council.

25. Council:

- (a) monitors creek levels, local run-off and flash flooding, and consults with BoM and Seqwater on other potential events upstream;
- (b) shares information on the status of the Brisbane River catchment and its systems with BoM and Seqwater;
- (c) undertakes modelling, forms predictions, identifies flood inundation areas and assesses impacts for its communities, and regularly shares this information with all relevant parties;


Kenneth John Morris


Witness

- (d) distributes consistent, detailed local flood level information to its respective operational units, its senior management and its broader community. This includes the interpretation of BoM flood warnings and River height forecasts into expected areas and depths of inundations;
- (e) activates its Local Disaster Management Group, which then undertakes the disaster management responsibility for response in the community.

Outcomes from October 2010 Minor Flood Event and Development of the Protocol

- 26. In October 2010, there was a minor flooding event in Brisbane and Seqwater and Council had reported on the event (and its potential impact) in different ways.
- 27. It was my understanding at the time that there was a concern in all agencies to ensure that they consulted with each other as to public announcements to avoid the confusion for the public which could flow from conflicting reports about flood events. To avoid that confusion occurring again, it was decided that the three key agencies (Seqwater, BoM and Council) should meet to discuss operating procedures and how information was being distributed to the public.
- 28. The October 2010 event led to a series of discussions and technical meetings in October and November attended by members of BoM, Seqwater and Council (including me) (**Technical Meetings**). The purposes of the Technical Meetings were to allow the agencies to:
 - (a) properly understand how each other operated and to communicate to each other the kind of information they required; and
 - (b) determine how to operate so as to communicate a consistent message to the public.
- 29. The topics the subject of the Technical Meetings broadly consisted of:
 - (a) technical capability presentations by each agency;
 - (b) open discussions on the communication between agencies and processing of information and data;
 - (c) suggested improvements to current systems and processes;
 - (d) contact lists and triggers for provision of information between agencies and the public.


Kenneth John Morris


Witness

30. The documents from the 2010 Bundle (defined in paragraph 41) which best summarise the Technical Meetings are as follows:
- (a) the Agenda for the 22 October 2010 meeting appears at **BCC.024.0024**;
 - (b) the Agenda for the 29 October 2010 meeting (which also attached the typed notes from the 22 October meeting) appears at **BCC.002.0055**;
 - (c) Seqwater's proposal for discussion at the 29 October 2010 meeting (which I did not attend as I was on leave) appears in an email from Terry Malone dated 25 October 2010 at **BCC.020.0071**;
 - (d) Handwritten notes of myself and Evan Caswell dated 22 October 2010 (**BCC.029.0006** and **BCC.029.0002** respectively), although I did not see Evan's notes at the time.
31. The ultimate consequence of the Technical Meetings and related discussions was the Protocol.

My personal involvement in the Technical Meetings and Protocol Development

32. I was not personally responsible for the process of Technical Meetings and Protocol development. At this stage (as noted in paragraph 13 above), I was no longer the Principal of the Flood Management Section in City Design. However, I did attend the first Technical Meeting on 22 October 2010 and have a recollection of some discussion which occurred. I also took an interest in the development of the Protocol and, whether by discussions with colleagues and or by reading email communications, I became familiar with the important aspects of that Protocol for Council's flood operations.

22 October 2010 Meeting

33. I attended the first Technical Meeting on 22 October 2010. So far as I recall, Evan Caswell, Don Carroll, Chris Lavin and possibly James Charalambous were at the meeting representing Council. Others attending included:
- (a) Peter Baddiley representing BoM; and
 - (b) Terry Malone, John Tibaldi and possibly Rob Drury representing Seqwater.
34. I specifically recall at the meeting on 22 October 2010, raising the point that the Council required information about flows in the river much less than 4,000 cumecs. I remember commenting that as far as Council was concerned any flow above 1,000 cumecs caused debris


Kenneth John Morris


Witness

to flow through the River which may require Council to take action (for example, in respect of ferry operations).

35. It is also possible at that meeting that I or one of my colleagues commented that the level of urban damage for Brisbane was below the 4,000 cumecs level, and that it was likely to commence at around 3,500 cumecs.
36. I believe it is likely I, or one of my colleagues, mentioned this level because:
- (a) the Brisbane Valley Flood Damage Minimisation Study prepared by City Design in August 2007 (**2007 Report**) included a "damage versus flow" curve which, relevantly, shows some property damage occurring in Brisbane at a flood discharge at around 3,500 cumecs. The 2007 Report was previously distributed to a number of stakeholders including the Department of Environment and Resource Management (formerly the Department of Natural Resources and Water) (**DERM**), BoM, Seqwater and Council, as shown by the distribution list at page 1. Attachment "**KJM-3**" is a copy of the 2007 Report; and
 - (b) an email from Terry Malone dated 29 October 2010, referred to in paragraph 30(c) at page 2, specifically identifies flows greater than 3,500 cumecs as the threshold of urban damage.
37. By the time of the flood event which occurred in January 2011, it was my understanding based on the various meetings and Protocol that the three agencies would take responsibility to ensure there was no conflict of information being distributed to the public.
38. In addition, it was my understanding that as a consequence of the Technical Meetings and Protocol, Seqwater had undertaken to provide figures on actual and proposed releases to Council and to keep Council informed as to release strategy. This was important to ensure consistency in situation reports from Council and Seqwater.

Flood Operations Centre (FOC)

39. The FOC comprises approved Flood Operations Engineers currently drawn from Seqwater, Sunwater and DERM. The FOC is activated to manage flood events relating to the dams and contributes to (and, where relevant, carries out) the responsibilities listed above for Seqwater.
40. I understand FOC is activated when it is proposed to release water from either of Wivenhoe or Somerset Dams and, in particular, where the Duty Flood Operations Engineer expects the


Kenneth John Morris


Witness

water level in either the Wivenhoe Dam or Somerset Dam to exceed the Full Supply Level (FSL).

Communications with FOC between 1 October 2010 and 31 December 2010

41. Attachment "KJM-4" is a copy of a chronological bundle of documents (separated by dated tabs) comprising records of my communications with members of FOC during the period 1 October 2010 and 31 December 2010 (**2010 Bundle**).
42. The 2010 Bundle contains a number of emails. I received many emails daily in the course of my employment. A considerable proportion of such emails will be addressed to a number of persons within Council, including myself. Consequently, I have a practice of identifying whether an email requires my specific consideration and response and, if so, responding accordingly. If it does not require my specific consideration and response, my practice is to scan the email only for anomalies or matters of concern, and only to respond to it if that is the case. Further, if it is apparent that I have been sent an email in relation to a matter that another recipient of the email is handling, I would leave it for that person to deal with and not consider the email further.
43. The documents comprising the 2010 Bundle broadly relate to:
- (a) communications with the FOC (that I was involved in) relating to dam releases;
 - (b) the development of the Protocol; and
 - (c) technical discussions and meetings between BoM, Seqwater and Council.

The operation of the FIC and my role from 6 January 2011 to 19 January 2011

44. I refer in paragraphs 14 to 18 in relation to the FIC. As explained there, various of the engineers in the Flood Management Section of City Design took the role of duty engineer under the intermediate preparedness arrangement. However, I always took the view that as the most experienced engineer I would be available as back-up for my colleagues. Accordingly, I became involved in dealings with the FOC on the evening of Sunday 9 January 2011 at the request of Mr McGlinn, who was the duty engineer at that time. As a result of those dealings (and some other events I mention below), I attended at the LDCC on Sunday evening. I also decided to stand-up the FIC formally on Monday morning.
45. It seemed to me that the most appropriate manner in which to deploy my time and expertise was for my engineers to be rostered on as Controllers and for me to be available to provide


Kenneth John Morris


Witness

guidance and assistance as they required and to allow me to carry out specific modelling and other tasks. In effect, I operated as a Director of the FIC supervising and assisting the Controllers.

46. One consequence of this is that after about lunchtime on Monday 10 January 2011 (when I handed over to Santina Pennisi as Controller of that shift), while I consulted constantly with the Controller about issues including dealings with the FOC, it was often the case that I was not personally involved in communications with the FOC. They were frequently with the Controller and I was often not part of those conversations.

Communications with FOC from 6 January 2011 to 19 January 2011

47. I do not recall having relevant communications with FOC in the period from 1 January 2011 to 6 January 2011.
48. Turning now to the period after 6 January 2011, I note that there are a large number of documents that I received from the FOC in the form of emails relating to Actual or Projected Releases from Wivenhoe Dam and Situation Reports. As can be seen, these emails were sent to numerous people in addition to myself.
49. Attachment "KJM-5" is a copy of a chronological bundle of documents (separated by dated tabs) comprising:
- (a) records of my communications with members of FOC;
 - (b) some LDCC situation reports (which include input from the FIC); and
 - (c) other documents relevant to my communications with the FOC,
- during the period 6 January 2011 and 19 January 2011 (**2011 Bundle**).
50. As can be seen, the vast majority of the documents comprise emailed Situation Reports and reports on Actual and Projected Dam Releases provided by FOC. This material was provided consistently with the discussions at the Technical Meeting and the Protocol, where Seqwater undertook to provide relevant information to Council.
51. Unless specified below, I do not comment any further on (or repeat the content of) those email communications or the other documents set out in the 2011 Bundle. The documents speak for themselves. Further, the majority of the email communications were sent to me and a large number of other people for information purposes only and did not call for a response.


Kenneth John Morris


Witness

Discussion of specific events involving my communications with FOC

52. I have been shown a copy of the Seqwater Log in its un-redacted form. Attachment "KJM-6" is a copy of the Seqwater Log in its un-redacted form.
53. Based on my review of the Seqwater Log, there are certain aspects of that Log that do not correspond with my recollection of the relevant communication in terms of both content and timing. I set out my recollection of my discussions with the FOC during the period 6 January 2011 to 19 January 2011 in the following paragraphs, including where my recollection departs from the relevant entries in the Seqwater Log. To the extent it is possible, I have set out the substance of those discussions and the material words spoken.
54. I have also been shown a copy of a document titled "Brisbane Infrastructure Integrated Management System - Flood Information Centre - FIC Operations Log Sheet" (FIC Log). Attachment "KJM-7" is a copy of the FIC Log.
55. I did not personally make any entries in the FIC Log. The Log sheets are divided into shifts and maintained and updated by administrative staff rostered on in each of the FIC shifts. Although the staff who maintained the FIC Log did their best to accurately enter information, the relevant period was one of extreme pressure and intense activity over long hours. In those circumstances, it may be that there are a number of entries in the FIC Log which are incomplete or in error.
56. Before addressing specific instances of communications with FOC, I make the following comments. Although from 1 December 2010 there were On-call Duty Engineers, as discussed in paragraph 17 above, I as the senior engineer had overall responsibility for the FIC flood response. Further, following the standing-up of the FOC, the various FOC Duty Engineers were all aware that I was the senior engineer with Council in flood response. I know that the FOC Duty Engineers had my mobile number and I expected (as in fact occurred), that from time to time the FOC Duty Engineer might choose to call me directly to inform Council about flood operations at Wivenhoe Dam.
57. I did not keep notes of such calls. I note there are a number of references to calls to me prior to 9 January 2011 in the un-redacted Log. I can say in general terms that I have no reason to doubt that the calls set out in the Log during this period occurred and I am not surprised I would have been the first port of call for the FOC engineers.


Kenneth John Morris


Witness

Thursday 6 January 2011

58. The Seqwater Log entries recorded on 6 January 2011 at 1.47pm and 2.45pm state as follows:

"1:47PM TM left message for Ken Morris (BCC) to return his call.

...

2:45PM Ken Morris (BCC) called for situation update. TM provided an update."

59. In respect of this conversation, I refer to paragraphs 56 above. Consistent with that evidence, I can say that while I recall talking to Terry Malone from time to time in the period leading up to and during the flood event, I do not specifically recall the conversation referred to above. It seems to me however that Mr Malone had first tried Mr Lavin and when he was unable to reach Mr Lavin, tried my number as the senior flood engineer. There is nothing remarkable about Mr Malone providing me an update and this was consistent with my understanding of the importance of communication between Seqwater and Council.

Saturday 8 January 2011

60. The Seqwater Log entry recorded on 8 January 2011 at 11.30am states as follows:

"Ken Morris (BCC) rang asking about combined flows down the Brisbane River (Wivenhoe, Warrill Creek and Bremer River). AN advised that at this stage flows would not exceed 1500m³/sec."

61. Again, I do not specifically recall this conversation, but have no reason to doubt that I telephoned the FOC as recorded. I believe I made this call on the prompting of someone from Council seeking information about flows, probably because of concerns for ferry operations. If I am correct that that was the motivation for my call, the impetus for it came from the ferry operations officers in Council.

Sunday 9 January 2011

62. The Seqwater Log entries recorded on 9 January 2011 between 4.25pm and 4.27pm state as follows:

"4:25PM TM called Chris Lavin (BCC). A message was left to phone FOC.

4:26PM TM called Ken Morris (BCC). A message was left to phone FOC.


Kenneth John Morris


Witness

4:27PM Ken Morris returned phone call. Ken was advised by TM that the current strategy was to maintain a flow in the Brisbane River such that the Fernvale Bridge and the Mount Crosby Bridge could be kept open. However, future rainfall could well impact on those roads remaining open. Closure next Tuesday is a real possibility at this stage. Flow in the Lower Brisbane potentially might reach 3,000 cumecs by next Wednesday or Thursday."

63. Once again I do not specifically recall this conversation in detail, but have no reason to doubt its accuracy.

Background to communications on the evening of 9 January 2011

64. On Sunday evening, I had a telephone call with a representative from BoM who informed me that heavy rainfall was forecast but they were not sure it was going to cause a flood. It is usual practice when a flood is predicted that the BoM begins modelling how rainfall will increase water levels. At this stage BoM had not started their modelling process. As such, on the evening of 9 January 2011 I did not expect that a flood was going to occur.

65. On Sunday 9 January 2011, the On-call Duty Engineer for FIC was Robert McGlinn. Although I had been monitoring the worsening weather forecasts from the BoM, Robert was formally the first point of contact for the LDCC should they require assistance.

66. During the evening of 9 January 2011, I received a call from Robert during which we had a conversation, to the effect that:

- (a) the LDCC was about to stand up and the forecast from the BoM was for heavier rain to come;
- (b) he asked whether, given my experience, I would take over for him and go into the LDCC;
- (c) I responded that I would take over for him.

67. At the time that Mr McGlinn asked me to takeover as the On-call Duty Engineer. I was also contacted by Chris Lavin from the LDCC to come into their office at Brisbane Square on George Street. The LDCC normally have a FIC Liaison Officer as part of their team and I took on that role for the evening.

68. Following the call from Chris Lavin, I arrived at the LDCC to assist the LDCC with its operations. I remained there throughout the night. In the morning, as discussed in paragraph

18 above, I decided that the FIC should be stood-up and I attended to the administrative and other arrangements necessary to bring that about. I did that at the FIC office at Green Square in Fortitude Valley. I went there from the LDCC offices at Brisbane Square at about 8 to 9am. I remained there until after midday, after which I went home to get some sleep.

69. I note the Seqwater Log entries recorded at 8.50pm and 8.55pm on 9 January 2011 which state as follows:

"8:50 PM RA called Ken Morris (BCC) to request copy of flood damages curve from 2007 study. Ken will send a copy tomorrow.

8:55 PM Ken Morris called back and spoke with JR. Confirmed BCC mobilisation triggers need to be in place. Status report is in preparation and will be emailed out shortly."

70. I do not recall having a telephone conversation with a FOC Engineer at or about 8.50pm or 8.55pm on 9 January 2011. Further, I do not understand the meaning of the reference in the Log to "mobilisation triggers". This is not a term used by Council. Further, I do not understand whether the reference to "status report" is to an LDCC report or to a FOC report.

71. To the best of my recollection:

- (a) I did not receive a request from the FOC for a copy of the "flood damages curve" until early in the morning of 10 January 2011;
- (b) the request was not made until the telephone conversation referred to in paragraph 86 below.

72. At some time after 9:03pm on 9 January 2011, I read an email (appearing in the 2011 Bundle at BCC.021.0119) from FOC which contained a Situation Report at 2100 (**2100 Situation Report**). I noted that the Situation Report recorded under the heading "Wivenhoe Dam (Full Supply Level 67.00 m AHD)", as follows:

...

"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 m³/s and the combined flows in the lower Brisbane will be limited to 4,000m³/s. This is below the limit of urban damages in the City reaches." (emphasis added)


Kenneth John Morris


Witness

- ...
73. I recall receiving the 2100 Situation Report because it caused me to start making enquiries with BoM so that I could begin the process of determining the direct consequences for Brisbane in relation to the information contained the 2100 Situation Report. I was at the LDCC office at Brisbane Square at this time.
74. The BoM have a model that uses current and forecast rainfall as well as dam outflows provided by FOC to calculate water levels in the River below Wivenhoe at particular gauges. The gauges are located at Savages Crossing, Mt Crosby, Moggill, Jindalee, Brisbane City and the mouth of the river.
75. One of my jobs as part of the Flood Management Section and FIC is to interpret the BoM forecast and work out the consequences for Brisbane. I do this by using the levels forecast at the particular gauges and interpreting what the levels would be in different areas of Brisbane based on the way the water flows through the River. The model we use to do this has been developed by me and has become known by my colleagues as the "Bender" (**Bender**). The Bender is a computer model which provides a way of interpolating the levels supplied by BoM between the 6 gauges.
76. Some time after receiving the 2100 Situation Report I telephoned BoM to seek forecast information to input into the Bender. During that call I discussed with the BoM meteorologists the expected rainfall.
77. In the absence of forecast river levels from BoM, I started with the assumption that the combined flow in Brisbane would be 4,000 cumecs, as identified in the 2100 Situation Report. As BoM had not been conducting these calculations at this stage, I then made an estimate of the levels at the 6 gauges by using a "pre-cooked" profile (i.e. one which had been developed already) for 4,000 cumecs. I inputted the levels at the 6 gauges from that profile into the Bender to determine the effect of that flow. This produced an indication of the number of houses affected. The results of this analysis were subsequently used in the powerpoint presentation referred to at paragraph 91 below.
78. Even before running the Bender, I was aware that a flow of 4,000 cumecs was likely to cause damage in Brisbane (see my discussion in paragraph 36 above) and, therefore, doubted that the statement in the 2100 Situation Report was correct.


Kenneth John Morris


Witness

79. After conducting my calculations, I then discussed the results with Chris Lavin. I was reluctant at that point to nominate how many houses would be affected because I was basing my calculations on an estimate of the levels at each gauge.
80. At the request of Mr Lavin, I started preparing a situation report for the LDCC which reflected the results of Bender analysis as a "first guess" pending BoM providing current forecast levels.

Monday 10 January 2011

81. Attachment "KJM-8" is a copy of an email at 12:21am on 10 January from Klynt Oberto of the LDCC containing a Situation Report (SITREP 0006) issued by the LDCC (LDCC Sitrep 6). LDCC Sitrep 6 included a section under the heading "Flood Information Centre Update" which was prepared by me. This email was not copied to me but I assisted in its preparation. Relevantly, that section included under the sub-heading "Dam Release" the following paragraphs:

"The dam will increase its releases starting Monday morning with the objective of keeping the combined flows in the lower Brisbane River at 4,000 m³/s which will cause a predicted level of 2.5m AHD (3.74m tide level) at the Brisbane City gauge approximately Wednesday.

Based on the expected schedule of releases the effects will result in inundation of low lying areas including habitable areas"

82. After the discussion with Chris Lavin, I decided to contact the FOC because I had formed the view that the statement in the 2100 Situation Report, that

"... at this stage, releases will be kept below 3,500 m³/s and the combined flows in the lower Brisbane will be limited to 4,000m³/s. This is below the limit of urban damages in the City reaches."

was incorrect and inconsistent with the LDCC situation report.

83. In the context of the discussions regarding the development of the Protocol and Technical Meetings from October 2010, I called the FOC to discuss the matter and LDCC Sitrep 6.

84. I note the Seqwater Log Entry recorded at 12.45am on 10 January 2011 which states as follows:

"Ken Morris (BCC) called and spoke with JR. Ken indicated that 3,500 cumecs is the damaging flow level for Brisbane urban areas. The manual documents 4,000 cumecs as the


Kenneth John Morris


Witness

damaging level. JR undertook to take this into consideration when preparing the current situation report, and would not refer to damage levels."

85. I recall making the telephone call to the FOC at some time early in the morning on 10 January 2011 from the LDCC offices at Brisbane Square, but I do not recall the precise time of the call and in particular whether it was at 12:45am. Further, it was either before or after the LDCC Sitrep 6 (which I note from subsequently reviewing this document appears to have been sent from the LDCC at 12:21am on 10 January 2011, although at the time I was not aware it had been sent).

86. To the best of my recollection, I had this conversation with Terry Malone of the FOC. I see that the un-redacted Log says that John Ruffini was the FOC engineer involved. It is possible this is correct, though it is not my recollection. Although I do not recall the specific words spoken, the substance of the conversation was to the following effect:

Morris: *I'm ringing about your situation report. We are preparing a situation report that specifies there will be damage and your situation report says that 4,000 cumecs is below urban damage. There is going to be a conflict that you need to fix up. We will put commentary about the level of damage in our situation report because we have better information about damage.*

Malone: *Ok we won't refer to damage levels in our situation report.*

Morris: *I've got some residents at Boobook Street, Rocklea who are going to be affected. If your operating procedures are telling you that you need to release as much water as possible without causing damage, then a better number for combined flow would be 3,500 cumecs. If it does not matter whether the combined flow is 3,000 or 4,000, then we would prefer that it be no more than 3,500.*

Malone: *I'll look into it. It would be nice if we had some information about when damage starts.*

Morris: *There's the damage curve in the 2007 report which I believe you have a copy of.*

Malone: *I don't know where my copy is. Can you please send me a copy of it?*

Morris: *I'm not in my office at the moment and I won't be back there till tomorrow but I will arrange someone to send through a copy tomorrow.*


Kenneth John Morris


Witness

87. In addition, while it might not have occurred in this conversation, I recall a conversation at around this time with one of the FOC engineers, in which there was a discussion in relation to the Manual documenting 4,000 cumecs as the damaging level. The substance and effect of that discussion was that it would be necessary to revise the Manual in that regard to insert 3,500 cumecs rather than 4,000 cumecs as the level of urban damage.
88. I refer to the comment above that Mr Malone (or Mr Ruffini) would "look into it". My assumption, based on that comment, was that the FOC would re-model the scenario of combined flow of 3,500 cumecs to determine if it was possible to set releases at a level consistent with that combined flow, in accordance with the Manual.
89. At or about 1.13am on 10 January 2011, I received a FOC Situation Report at 0100 by email from the Seqwater Duty Engineer (which appears at **BCC.021.0092** of the 2011 Bundle) (**0100 Situation Report**). At that time, I noted that the Situation Report relevantly recorded under the heading "Wivenhoe Dam (Full Supply Level 67.00 m AHD)", as follows:
- "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 3,500m³/s and the combined flows in the lower Brisbane will be limited to 4,000m³/s if possible."*
90. I specifically recall receiving the 0100 Situation Report because I noted that the final sentence recorded in the 2100 Situation Report had been removed.
91. At or about 3.00am on 10 January 2011, I prepared a situation report powerpoint presentation which was attached to an email to Chris Lavin from me sent at 3:29am on 10 January 2011 (which appears as **BCC.021.0001** in the 2011 Bundle). This presentation included my "first guess" of the damage that would occur based on 4,000 cumecs and records that 283 properties would be completely flooded and 6890 properties would be partially flooded.
92. Attachment "**KJM-9**" is a copy of an email at 6.15am on 10 January from Klynt Oberto of the LDCC containing a Situation Report (SITREP 0007) issued by the LDCC (**LDCC Sitrep 7**). LDCC Sitrep 7 included a section under the heading "Flood Information Centre Update" which was prepared by me. This email was not copied to me but I assisted with its preparation. Relevantly, that section included under the sub-heading "Dam Release" the following paragraphs:
- "The dam will increase its releases starting this morning with the objective of keeping the combined flows in the lower Brisbane River at 4,000m³/s which will cause a predicted level of 2.5m AHD (3.74m tide level) at the Brisbane City gauge by approximately Wednesday."*

Based on the expected schedule of releases the effects will result in inundation of low lying areas including habitable areas.

We have contacted SEQWater and have expressed concern about the proposal and consequences of a 4000m³/s flood through Brisbane. As a result SEQWater are reviewing their release strategy with their modelling expected to be completed by 0700HRS and will then be passed onto the BoM who will model the expected levels through the lower Brisbane reach."

93. I refer to that part of the above quote "we have... expressed concern about the proposal and consequences of a 4000m³/s flood through Brisbane". The expression of concern referred to there is that set out in the conversation referred to in paragraph 86 above. Further, the balance of the Sitrep reflects my assumption set out in paragraph 88 above that FOC would revise its modelling.

94. At or about 6.30am on 10 January 2011, I received an FOC Situation Report at 0600 by email from FOC (which appears as **BCC.021.0070** in the 2011 Bundle). At that time, I noted that the Situation Report relevantly recorded under the heading "Wivenhoe Dam (Full Supply Level 67.00m AHD)", as follows:

"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 3,500m³/s and the combined flows in the lower Brisbane will be limited to 4,000m³/s if possible. This is significantly less than the current estimated combined pre-dam peak inflow of 12,000 m³/s."

95. Having received several situation reports from FOC confirming that 4,000 cumecs may be the combined flow, I formed the view that the FIC should be stood up, and I refer to paragraph 68 above where I discuss that occurrence.

96. I note the log entries in the Seqwater Log at 8.30am and 9.38am record as follows:

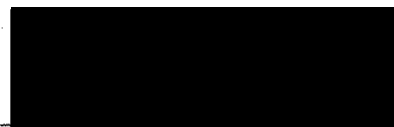
"8:30AM FOC left a message for Ken Morris (BCC) to call back.

...

9:38AM Conference call with Ken Morris (BCC) - informed them that release from Wivenhoe will be maintained at 2000m³/s for the next 24 hrs. This will be revised in 24 hrs. The strategy is to limit the flows to 3000 - 3500m³/s. At 3500m³/s about 322 (the whole property) will be submerged and about 7000 properties will be



Kenneth John Morris



Witness

affected somehow damage bill \$7mil). If the rainfall in the Bremmer and Lockyer increases substantially - it is likely the flows from these catchments can peak at 1000m3/s (on top of Wivenhoe release)."

97. At about 8.30am, I was in the process of moving from the LDCC at Brisbane Square to FIC at Green Square to set up the FIC. It is therefore likely that the call at 9.38am was a returned call from FIC to FOC. So far as I recall, there were a number of conference calls involving FIC and FOC over the flood event. For the reasons given in paragraphs 45 and 46 above, I was not necessarily present for all or even most of them. I also note that, so far as I observed, it was common when calls were made by FOC for the FIC officers to listen in on speaker phone.
98. I cannot recall the exact time that this call occurred but I know it was on the morning of Monday 10 January 2011. By the time of this call I had been awake for about 30 hours and, as a result, my recollection is hazy. By this stage, I had let my staff take over the active running of the FIC and I took on more of a mentoring role.
99. I cannot recall which FIC members were rostered on that morning but at least James Charalambous and Robert McGlinn were there. I cannot specifically recall if Don Carroll or Santina Pennisi also attended this teleconference, but they may have. I recall that Ms Pennisi was required at a meeting with the Local Disaster Management Group at Ann Street at 10am and the telephone conference occurred at around 9.40am.
100. I cannot recall which members of the FOC were on the conference call.
101. To the best of my recollection:
- (a) FIC returned FOC's call from earlier in the morning. The purpose of the call was to provide the FIC with details of the latest strategy in relation to the operation of the Dam. There was nothing unusual about this. It was consistent with the discussions at the Technical Meetings and the Protocol. In particular, during the flood event, it was common for FIC to communicate with FOC as to FOC's dam release strategy prior to the issue of an LDCC situation report to ensure any comments in communications about dam operations were accurate;
 - (b) During this teleconference, we were informed by the FOC that the change in strategy was to reduce the combined flow to 3,500 cumecs;

- (c) In response, I said words to the effect that *"On behalf of the people that were going to be flooded, they thank you."*
102. In relation to that telephone conversation, I do not specifically recall:
- (a) being informed that the releases from Wivenhoe were to be maintained at 2,000 cumecs for the next 24hrs. However, the FOC engineers may have said this as it is consistent with their strategy;
 - (b) a discussion about *"At 3,500 cumecs 322 (the whole property) will be submerged and about 7,000 properties will be affected somehow damage bill \$7 mil"*. Further, I do not accept that information as being correct;
 - (c) being advised that *"if the rainfall in the Bremer and Lockyer increases substantially - it is likely the flows from these catchments can peak at 1000m3/s (on top of Wivenhoe release)"*, however it is possible this was raised as it was consistent with the BoM predictions and was likely to have been provided to the FOC by the BoM.
103. I left the FIC office at Green Square to return home after 12.00pm on 10 January 2011. I turned my phone off when I arrived home in order to get some sleep. At this stage, I had largely handed over the running of the FIC to the rest of my team and all phone calls were being handled by my staff.

Tuesday 11 January 2011

104. I note the Seqwater Log entry recorded on 11 January 2011 at 12.15am which states as follows:

"Spoke to Ken Morris (BCC) to update on current release strategy."

105. I do not have any recollection of this call. For the reasons I have given in paragraph 56, FOC duty engineers did call me directly on occasions and amongst other things would inform me about current release strategy. However, by this stage, the FIC was operational and, given that I was not the Controller that night, I consider it unlikely that I would have received such a call in those circumstances.

106. I refer to the FIC Log entry recorded on 10 January 2011, Shift 2, Item 19 at 3.18am which records an email sent from "FIC" to "SEQ" regarding the Flood Damages Spreadsheet. This entry is repeated on 11 January 2011, Shift 3, Item 30 at 3.18am. I am aware that the email was actually sent on 11 January 2011 (as recorded in the FIC Log for 11 January 2011). I did


Kenneth John Morris


Witness

not send the email as listed in that log entry, but the email was sent on my direction by a member of my team, James Charalambous.

107. At or about 5.59pm on 11 January 2011 an email was circulated from Terry Malone, Seqwater Duty Engineer (which appears at **BCC.002.9585** of the 2011 Bundle) which relevantly stated, inter alia, as follows:

"The dam is expected to peak below 75.5m AHD which is 100mmm below the first fuse plug initiation level."

108. Although I do not specifically recall reading the email, I recall at one of the telephone conferences around this time that John Ruffini of FOC informed FIC that the water level was getting close to the fuse plug. I remember commenting at that time in words to the following effect:

"For heaven's sake, whatever you do, don't let that go."

109. I am not sure exactly when that particular conversation occurred, and the Seqwater Log does not assist me in recalling.

Wednesday 12 January 2011

110. I note the Seqwater Log entry recorded on 12 January 2011 at 6.15am which states as follows:

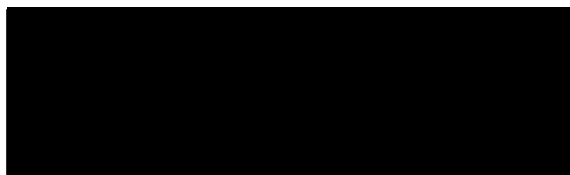
"Brendan Bradley (BCC) rang enquiring the level of the pump station at Mt Crosby. JT said we can't help, but that he should contact the treatment plant, Brett Myatt."

111. In relation to that Log entry, I recall telling somebody at the LDCC that in 1974 the flood water nearly got into the water supply pumps at Mt Crosby and thought that this issue should be raised as it had been indicated that the flood levels would be similar to those reached in 1974. If that occurred, then Brisbane would have gone without water.

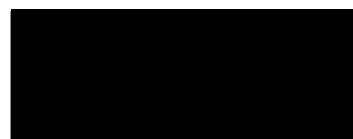
112. I note the Seqwater Log entry recorded on 12 January 2011 at 4.20pm which states as follows:

"Ken Morris (BCC) called FOC and had phone conference with Duty Engs. He was seeking update for briefing with Lord Mayor."

113. Whilst I have no recollection of the call, I do not doubt such call may have been made.



Kenneth John Morris



Witness

Friday 14 January 2011

114. I note the Seqwater Log entry recorded on 14 January 2011 at 10.25am which states as follows:

"Ken Morris from BCC rang TM. Enquiring if any chance of cutting back Wivenhoe releases to lower flows than the current figure of 3,500 cumecs. TM's response was NO!"

115. To the best of my recollection I was involved in the conversation referred to in the Seqwater Log on the date and at the time referred to in the log. The conversation was with Terry Malone. We had a conversation to the following substance and effect:

Morris: *What has the Bureau told you about forecasts of rainfall? If there isn't any major increase in rainfall and if it doesn't make any difference to you, can you extend the outflow of the dam for a longer period but at a lower flow? It would help us out with the recovery if you could cut that back so we can expose more houses and get quicker recovery.*

Malone: *No, I have to follow the protocols.*

116. To the best of my recollection, I made this call of my own initiative as there was a problem with the flow from the dam releases culminating with high tides. The LDCC had informed me earlier that day that the "mud army" (the volunteers) had been mobilised. They had started cleaning houses up at low tides only to have those houses re-flooded at high tide.

117. I note the Seqwater Log entry recorded on 14 January 2011 at 1.45pm which states as follows:

"TM rang Ken Morris at BCC seeking clarification on BCC's flood mapping. Ken Morris advised that at 3,500 cumecs, BCC records indicate that 220 properties will have water on the property. TM confirmed that 'water on the property' did not mean water above floor level. i.e. Likely to be land inundation only."

118. Whilst I have no recollection of the call, I do not doubt such call may have been made. I recall that following the conversation at 10.25am referred to above, Terry Malone did ring me back and apologise for being curt in the course of that earlier call and I responded that he ought not worry about it. I think that conversation probably occurred during the call referred to in the previous paragraph.


Kenneth John Morris


Witness

Monday 17 January 2011

119. I note the Seqwater Log entry recorded on 17 January 2011 at 11.15pm which states as follows:

"Talked to Ken Morris BCC. Advised him about gate closure. He mentioned that BCC will not provide any info on flood recurrence until they discussed with FoC."

120. I recall this call occurring and the entry in the Log is an accurate record of the discussion.

121. I note the Seqwater Log entry recorded on 17 January 2011 at 12.20pm which states as follows:

"JR contacted BCC to get an update on Coro Dr situation. JR spoke to Ken Morris. Ken advised he had spoken to BCC Geotec Officers and they had advised that @ this stage as Coro Dr was back within the banks that they could not see an immediate problem. Some bank slumping have been identified further up the river. Council would like the recession of flow to be as flat as practicable but also that releases be as small as possible @ the Port Office gauge by the time of the high tide on Friday. This is consistent with our current strategy of closing releases by Wednesday 20 Jan 2010."

122. To the best of my recollection, the Log entry is an accurate record of that communication.

Tuesday 18 January 2011

123. I note the Seqwater Log entry recorded on 18 January 2011 at 7.35am which states as follows:

"Ken Morris (BCC) enquired about preliminary assessment of magnitude of flood. Ken suggested that SEQWater, BOM and BCC should arrive at a consensus regarding any assessment on the magnitude of the event. Rob Ayre agreed. Ken also enquired if we had done an assessment of the effects of the dam on peak flow. Rob indicated that our preliminary figure was a 13,000 cumec peak at City Gauge without the Dams."

124. I recall a conversation such as the one recorded, however my recollection is that the call occurred a little later in the day.

125. I was trying to obtain information from Mr Ayre about the flow rate that would have occurred if Wivenhoe Dam was not there because I wanted to start working on the Average Recurrence Interval (ARI), which was part of my role as a member of the Flood Management team.


Kenneth John Morris


Witness

I make this statement conscientiously believing the same to be true, and by virtue of the provisions of the Oaths Act 1867 (Qld).

Dated 4 April 2011

Signed and declared by Kenneth John Morris at
in the State of Queensland
this FOURTH day of APRIL 20

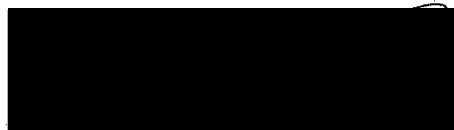
Before me:



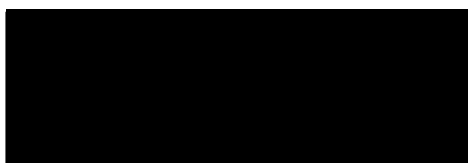
Signature of person before whom the declaration is made

MARK STEPHEN SAMMUT
SOLICITOR

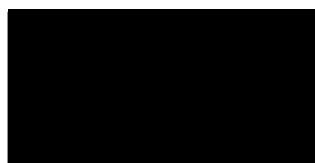
Full name and qualification of person before whom the declaration is made



Signature of declarant



Kenneth John Morris



Witness