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STATEMENT OF JAMES ROBERT GRAYSON

DATED 13 MAY 2011

1. My name is James (Jim) Robert Grayson. I have occupied the position of Chief Executive Officer of the Gladstone Area Water Board (GAWB) since January 2006.
2. GAWB is a Category 1 Water Authority pursuant to the *Water Act 2000* (Qld) and a registered service provider (reference number 200) under the provisions of the *Water Supply (Safety and Reliability) Act 2008* (Qld) (**the Act**). GAWB is a body corporate that operates as a commercialised statutory authority which is responsible to the Minister for Energy and Water Utilities.
3. I have received a notice to provide a statement and a notice to provide information both dated 5 May 2011. I will seek to respond to the questions raised by the notice to provide the statement in the order in which the questions are raised making reference to relevant documentation as follows.

General account of GAWB's role and responsibilities in respect of the operation of dams (topic number 1)

4. The *Boyne River Basin Resource Operations Plan (the ROP)* was published in accordance with the requirements of the *Water Resource (Boyne River Basin) Plan 2000*. The ROP (and associated Resource Operating License issued pursuant to the ROP) will be produced with the front page marked 'JRG1' in response to the notice to produce information referenced at paragraph 3.

SHEET 1

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James Robert Grayson


Witness

5. The ROP contains a general description of Awoonga Dam including its characteristics and capabilities (see especially Attachment 2 to the ROP).
6. GAWB is the owner of Awoonga Dam. GAWB is also the operator of Awoonga Dam pursuant to the ROP. Awoonga Dam is the only Dam that GAWB operates.
7. Awoonga Dam is a *referrable dam* within the meaning of those words as they are used at section 341 of the Act having a *category 2 failure impact rating* as that term is used at section 346 of the Act.
8. In accordance with section 353 of the Act certain safety conditions have been imposed on GAWB in relation to its operation of Awoonga Dam (**Dam Safety Conditions**). These conditions will be produced with the front page marked 'JRG2' in response to the notice to produce information referenced at paragraph 3.
9. As required by the Dam Safety Conditions GAWB maintains the Awoonga Dam FSL 40m Data Book. This document contains detailed information relating to the characteristics and capabilities of Awoonga Dam. This document will be produced with the front page marked 'JRG3' in response to the notice to produce information referenced at paragraph 3.

**A general description of Awoonga Dam, its characteristics and capabilities
(topic number 2)**

10. Reference is made to paragraphs 5 and 9 herein.

An account of GAWB's role in emergency management (topic number 3)


James Robert Grayson

SHEET 2



Witness

11. During times of upstream and downstream flooding, GAWB's role in emergency management is directed to:
- a. monitoring the performance of Dam infrastructure;
 - b. the provision of information to the Local Disaster Management Group (LDMG) for it to make assessments concerning the safety of populations at risk, both upstream and down stream; and
 - c. ensuring the safe operation of its infrastructure to facilitate the reliable provision of bulk water services to the Gladstone Region.
12. As required by the Dam Safety Conditions, GAWB maintains an Awoonga Dam Emergency Action Plan (EAP). The EAP details procedures for various emergencies including upstream and downstream flooding. Copies of the EAP are held by various external agencies listed in that document (at p iv) including the LDMG. This document will be produced with the front page marked 'JRG4' in response to the notice to produce information referenced at paragraph 3.

An account of GAWB's preparation for the 2010/2011 wet season for Awoonga Dam including meetings held, decisions made and actions taken (topic number 4)

13. GAWB receives medium term weather forecast from various sources including the Bureau of Meteorology (BOM) and the Queensland Climate Change Centre of Excellence in the operation of its business. These forecasts were to the effect that it was probable that the Boyne catchment would receive higher than average rains (and consequently higher than average inflows to Awoonga Dam).

SHEET 3


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James Robert Grayson


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Witness

14. A senior representative of GAWB (James Stewart) attended the Queensland Tropical Cyclone Consultative Committee – Cyclone, Storm & Flood Season Seminar on 13 October 2010. This seminar was convened by BOM and Emergency Services and emphasised the probability of higher than average rainfall and cyclone activity in the upcoming 2010/2011 wet season.
15. GAWB's preparation for the 2010/2011 wet season was undertaken with knowledge that the volume of water stored by Awoonga Dam was significantly greater than at any other time since the raising of the Dam was completed in 2002. In the months leading to the commencement of the 2010/2011 wet season, Awoonga Dam was close to 90% of its storage capacity (approximately 700,000 MI at about 38.8m AHD). This meant that the capacity for Awoonga Dam to absorb inflows associated with major rainfall events would be more constrained than that experienced in prior years.
16. For these reasons, leading to the 2010/2011 wet season, I believed that it was probable that rainfall would cause Awoonga Dam to exceed its storage capacity at some point during the wet season, such that water would flow over the spillway for the first time.
17. There are a number of actions that GAWB normally undertakes leading into the wet season, such as updating communication details for residents immediately downstream of Awoonga Dam. These actions are detailed in the EAP (referred to at paragraph 12, with the front page marked 'JRG4').
18. In addition to these actions, GAWB undertook the following actions having regard the probability that Awoonga Dam would spill during the 2010/2011 wet season:

- a. in consultation with the LDMG, delivered correspondence to each household immediately downstream of Awoonga Dam (as listed in the EAP) drawing their attention to the likelihood that Awoonga Dam will spill (or overtop) which would result in flooding in the Boyne River immediately downstream of the spillway including at Pikes Crossing, with the potential for more general localised flooding. This correspondence was delivered on or about 9 November 2010 to each residence by GAWB staff and for those residents not at home sent via mail. A copy of this letter and e-mails associated with its drafting to the LDMG will be produced in a bundle with the front page marked 'JRG5' in response to the notice to produce information referenced at paragraph 3.
- b. causing similar letter to be delivered by GAWB staff to residents upstream of Awoonga dam in early November 2010 and causing this advice to be included as an article into the October/November edition of the Boyne Valley District News for residents upstream of Awoonga Dam. A listing of the residents that were delivered this letter and copy of this article with the front page marked 'JRG6' will be produced in response to the notice to produce information referenced at paragraph 3.
- c. given the greater pressures upon the Awoonga Dam infrastructure anticipated with the storage of these inflows (more than at any prior time) an elevated inspection regime was employed, which included continual review of the piezometers levels, as the water levels in the

dam increased. GAWB connected the piezometers and v-notch weirs up to its telemetry system to enable real time monitoring of the results. A water level recorder was installed onto the crest of the dam to enable water levels to be recorded above the 1 in 100 year event.

- d. convening a simulation undertaken on 16 November 2010 of the activation of GAWB's EAP which was observed and reported upon by disaster response experts within Worley Parsons. A copy of a report upon this simulation from Worley parsons dated 25 November 2010 with the front page marked 'JRG7' will be produced in response to the notice to produce information referenced at paragraph 3.
- e. from July 2010 onwards meeting with representatives of BOM and the LDMG to facilitate improvement in the quality of the recording of rainfall data within the Boyne catchment to improve the accuracy of water level predictions. Copies of documentation relating to these communications will be produced in a bundle with the front page marked 'JRG8' in response to the notice to produce information referenced at paragraph 3.

An account of communications, including copies of all communications if possible, made by GAWB to local government authorities and residents in preparation for the 2010/2011 we season (topic number 5)

19. Reference is made to paragraphs 17 and 18 above.

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James Robert Grayson

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Witness

**An account, including copies of all communications if possible, of
GAWB's interactions with the LDMG, State Government Departments
and emergency services during the 2010/2011 wet season (topic number
6)**

20. On 12 December 2010 the water within Awoonga Dam exceeded its storage capacity, with water passing over the 40m AHD spillway for the first time. This event was historic for GAWB, but was not at this time associated with significant upstream or downstream flooding.
21. GAWB took the following actions on 12 December 2010 in response to the commencement of water crossing the spillway at Awoonga Dam:
- a. established a coordination centre at its head office (147 Goondoon Street Gladstone). The rooms in which the coordination centre is designated to operate have been modified to facilitate operation in an emergency (for example it has an independent power supply). From this centre, GAWB commenced close liaison with the Local Disaster Management Group (**LDMG**).
 - b. undertook daily inspections of dam infrastructure to confirm that it was operating within design parameters.
 - c. notified each resident in the Pikes Crossing region immediately downstream of Awoonga Dam of the increased water flow down the Boyne River. At 5.00pm Pikes Crossing became sufficiently inundated as to prevent access to the public.
 - d. issued a media release at about 2.30pm concerning the spilling which referenced the potential for localised flooding. A copy of a report upon

~~this simulation from Worley Parsons dated 25 November 2010~~ with the front page marked 'JRG9' will be produced in response to the notice to produce information referenced at paragraph 3.

- e. circulated this media release by e-mail to senior representatives of the Department for Environmental Resource Management (DERM) and GAWB's directors. A copy of a these e-mails with the front page marked 'JRG10' will be produced in response to the notice to produce information referenced at paragraph 3.

22. GAWB notified the Dam Safety Regulator of the first filling of Awoonga Dam on 13 December 2010. On 9 February 2011 a detailed report was provided to the Dam Safety Regulator which contains (at Appendix D) a record of all communications made by GAWB as a consequence of the creation of the coordination centre referred to at paragraph 21(a) above. A copy of a report to the Dam Safety Regulator dated 9 February 2011 with the front page marked 'JRG11' will be produced in response to the notice to produce information referenced at paragraph 3.

23. Between 14 December and 24 December 2010 the level of water in Awoonga Dam remained under 41m AHD (ie 1 metre over the spillway). During this period the following events occurred requiring interaction with local agencies:

- a. on 16 December 2010, a camper in the Boynedale Bush Camp recreation area was reported missing. GAWB notified Queensland Police Service who organised an air and water search. GAWB officers assisted with the water search by providing and skippering the search vessel. The camper was found safe and well on Lake Awoonga but

was requested to vacate the camp area. Copies of documentation recording communications concerning this incident with the front page marked 'JRG12' will be produced in response to the notice to produce information referenced at paragraph 3

- b. also on 16 December 2010 GAWB attended meetings with local residents in the vicinity of Pikes Crossing concerning the inundation of their public access road. GAWB provided for local residents temporary alternative access through the river discharge and pump station area on GAWB land and advised Emergency Services of these arrangements.

24. At 4.55pm on 25 December 2010 GAWB received advice by e-mail from BOM that "heavy rainfall and associated flooding will continue in coastal areas between Ingham and Gladstone tonight..." and "on Sunday this heavy rainfall is forecast to move south between Bowen and Fraser Island...". A copy of all e-mails advising of severe weather warnings that GAWB received from BOM from the period 3 December 2010 to 19 January 2011 will be produced in bundle with the front page marked 'JRG13' in response to the notice to produce information referenced at paragraph 3.
25. On 26 December 2010, as a result of this rainfall, the level of water in Awoonga Dam increased to over 41.5m AHD (ie 1.5 metres over the spillway) and rising. By reference to the capacity at full supply level, Awoonga Dam was at approximately 115% with approximately 100,000 ML of excess water.
26. The following events occurred on 26 December 2010:

- a. In the Riverston recreation area at Awoonga Dam, the sewage pump at the toilet block (contents having being emptied by GAWB staff the day before) and house boat building were inundated. The house boat was moved to higher ground and GAWB closed Riverston.
 - b. Access through the river discharge and pump station area became flooded meaning Pikes Crossing residents were isolated. Emergency Services were advised.
 - c. The Gladstone-Monto Road was inundated, cutting access to residents in the vicinity of Nellie Simpson Road, also preventing access to the Boynedale Bush Camp.
 - d. GAWB continued updating its Dam Level Prediction Model and commenced three-hourly text message updates of dam level monitoring and predictions to LDMG and to the GAWB Emergency Response Team.
27. On 27 December 2010 the level of water in Awoonga Dam increased to over 42.5m AHD (ie 2.5 metres over the spillway) and rising. By reference to the capacity at full supply level, Awoonga Dam was at approximately 125% with approximately 200,000 MI of excess water.
28. GAWB continued updating its Dam Level Prediction Model and commenced three-hourly text message updates of dam level monitoring and predictions to LDMG and to the GAWB Emergency Response Team.
29. At 7.00am on 28 December 2011 GAWB facilitated access by SES flood boat adjacent to GAWB's pump station and river discharge pit to allow the transfer of Pikes Crossing residents.

30. At 8.00am that day the level of water in Awoonga Dam increased to over 43.8m AHD (ie 3.8 metres over the spillway) and rising. By reference to the capacity of at full supply level Awoonga Dam was at approximately 137% with approximately 300,000 MI of excess water.
31. At 8.20am that day, having regard to continuing rainfall and prevailing unsettled weather conditions an assessment was made by GAWB staff that it was likely that the level of water in Awoonga Dam would rise to 45.26M AHD (approximately 150% of full supply level with approximately 400,000 MI of excess water). Accordingly, James Stewart recommended the activation of EAP Action Plan 1.2 (as detailed in GAWB's EAP described at paragraph 12 and marked 'JRG4'). As GAWB's CEO I endorsed this recommendation and Action Plan 1.2 was activated (for the first time).
32. The actions resulting from implementation of Action Plan 1.2 is detailed in GAWB's report to the Dam Safety Regulator dated 9 February 2011 (discussed at paragraph 22 and marked 'JRG11'): It included:
- a. the mobilisation of GAWB's Emergency Response Team with specific roles and responsibilities. The Emergency Response Team was supported by Rangers at the dam and by specialist technical and engineering personnel. The team was located at both GAWB's head office as well as at emergency facilities at Awoonga Dam. Both the rooms used at the head office and the facilities at Awoonga Dam been designed (or modified) to facilitate operation in an emergency situation (for example independent power supply).

- b. The commencement of 4 hourly (physical) inspections of critical Awoonga Dam infrastructure including piezometer and V-notch readings.
 - c. The closure of recreation areas adjacent to Awoonga Dam and the provision of advice to residents immediately down stream of Awoonga Dam and the operator of the Frost Quarry that abuts Awoonga Dam concerning predicted flows.
 - d. The regular provision of dam level predictions to the LDMG.
33. In relation to the provision of dam level predictions to the LDMG:
- a. GAWB maintains a water level prediction model. This model was developed by GHD, consulting engineers, for use by GAWB staff who received training in the use of the model prior to the commencement of the 2010/2011 wet season. The model was found by GAWB staff as difficult to use, particularly with respect to the uploading of forecast rainfall from BOM. As a consequence, GAWB made arrangements with GHD for a hydrologist to operate this model to provide predictions as to flows. This model is described in a report entitled *Report for Awoonga Dam Water Level Prediction User Manual dated December 2009*. A copy of this report with the front page marked 'JRG14' will be produced in response to the notice to produce information referenced at paragraph 3.
 - b. In addition to using the model, some GAWB staff possess skills and experience in the manual prediction of flows using the process detailed

at Appendix C of the EAP entitled *Lake Level Prediction Tool Kit* which is based upon expert analysis of the hydrology of Awoonga Dam.

- c. the predictions that GAWB provided the LDMG were generated at different times using either of the methods described above.
- d. the predictions of the level that water at Awoonga Dam would reach within stipulated times that GAWB provided the LDMG were mostly accurate. These predictions are detailed in the communications log which is Attachment D to GAWB's report to the Dam Safety Regulator dated 9 February 2011 (discussed at paragraph 22 and marked 'JRG11')
- e. a communication containing a prediction was made to the LDMG at 9.09 am on 28 December 2010 as follows: *Dam height at 0800 = 43.8 m. Predict 45 m in 8 hrs; 46+ m in 14 hrs from 0800.* This prediction was made on the basis that inflows would continue at the rate then being experienced, as opposed to forecast rainfall from BOM. I consider this approach to have been reasonable to identify credible developments in the immediate future so to inform preparations for actions, especially given the inherent uncertainty in predicting rainfall across the entirety of GAWB's then charged catchment. I note, however, that this distinction from prior and subsequent predictions was not expressed to the LDMG.
- f. in any event, the subsequent prediction GAWB conveyed to the LDMG at 12.02pm that day that the predicted peak was 44.15m proved to be within 5cm's of the actual peak of (just under) 44.10m which occurred

just after 4.00pm that day (approximately 140% of full supply level with approximately 350,000 MI of excess water).

- g. during the morning of 28 December 2010 the LDMG indicated to GAWB the possibility that some residents of Boyne Island may need to be evacuated due to risk of flooding with High Tide approaching at 2.30pm. It was understood by GAWB that its predictions as to flows over the spillway at Awoonga Dam would be considered by the LDMG in concert with estimated tide levels to assess the potential for flooding, especially in regions close to the coast, such as Boyne Island.
- h. at 2.45pm GAWB was advised by the LDMG that following inspection of the Boyne River at Boyne Island no flooding was likely and that as a consequence no evacuations would be required for low lying residences.

- 34. As GAWB's CEO I provided updates by way of e-mail to a senior representative of DERM concerning Awoonga Dam from 2.00pm on 28 December 2010 to 2 January 2011. A copy of all e-mails will be produced in bundle with the front page marked 'JRG15' in response to the notice to produce information referenced at paragraph 3.
- 35. At 8.00am on 30 December 2010 the level of water in Awoonga Dam fell to a height of 42.824m AHD, having decreased at an average rate of 35mm per hour over the previous 11 hours. At approximately 9.00am GAWB deactivated Action Plan 1.2 and the Dam Safety Regulator was so advised.
- 36. On 2 January 2011 the level of water in Awoonga Dam fell beneath a height of 41.5m AHD, resulting in:

- a. access resuming for Pikes Crossing residents through the river discharge and pump station.
 - b. access resuming through Gladstone Monto Road for residents in the vicinity of Nellie Simpson Road and also to the Boynedale Bush Camp.
37. During the week commencing 14 February 2011 water levels fell sufficiently for public access to resume for Pikes Crossing.
38. Water has continued to flow over the spillway at Awoonga Dam to the date of this statement. Subject to further rainfall, this is expected to cease later this month (ie May 2011).

An account of flood events affecting Awoonga Dam during the 2010/2011 wet season and GAWB's response to them, including decisions made, flows out of the dam, issues raised and response taken to those issues (item number 7)

39. Reference is made to paragraphs 20 to 38 in response to the account of flood events affecting Awoonga Dam in December 2010 and GAWB's response to those events.
40. In relation to decisions made to release water, GAWB as operator of Awoonga Dam has limited capacity to release water. The capacity that is afforded by its infrastructure is for the purpose of facilitating environmental flows as required by the Boyne River ROP (discussed at paragraph 3 and marked 'JRG1'). Specific reference is made to attachment 3 to the Boyne River ROP entitled *Operating Rules for Awoonga* and the description of base flow and trigger flow releases.

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James Robert Grayson

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Witness

41. Prior to 2010/2011 wet season GAWB obtained confirmation, of its interpretation of the provisions of the Boyne River ROP, from DERM that flows over the spillway would be included in calculations to determine base flow and trigger flow releases.
42. Accordingly, releases of water for environmental purposes by GAWB in compliance with the Boyne River ROP during the 2010/2011 wet season have been limited to 80MI which occurred over a 12 hour period on 7 to 8 December 2010. No other releases have been made by GAWB. For clarity, Awoonga Dam is an un-gated spillway with the infrastructure to facilitate water releases designed for purpose of facilitating environmental flows (maximum of 1,100MI per day) and as such has no real capacity to mitigate flooding.

A description of any flood models maintained by GAWB (item number 8)

43. Reference is made to paragraph 33 herein.

A description of GAWB's role in forecasting down stream flood levels (item number 9)

44. As noted at paragraphs 11, 32 and 33 herein, GAWB's role in forecasting downstream flood levels is limited to advising LDMG as to predicted water levels (and thus flows) across the spillway at Awoonga Dam into the Boyne River.
45. GAWB understands that the LDMG uses this information in conjunction with forecast tide levels and (where in existence) storm surge forecasts to make assessments concerning down stream flood levels.

A description of the data provided by GAWB to the local government authority or Local Disaster Management Group or any other party for use in a flood model for the areas downstream of Awoonga Dam (item number 10)

46. Reference is made to sub-paragraph 18(e) and to paragraphs 12, 32 to 34 herein. Specific reference within the EAP (marked 'JRG4') is made to *Appendix E : Inundation Flood Maps and Property Maps, Appendix H: Breach and Non-Breach (Saddle Dam No. 3 Failure) Flood Plans/For 1:2000 AEP Event and Appendix J: 1:100 Flood Levels Below Awoonga Dam*. Electronic versions of these maps were supplied to Gladstone Regional Council following production.

An account, including documentation where possible, of communications and warnings issued by Awoonga Dam about flows from the dam and their effect during the 2010/2011 wet season (including to and from BOM, local governments, emergency services and residents) (item number 11)

47. Reference is made to sub-paragraph 18(a) and paragraphs 20 to 38 herein.

A summary of the procedures, including documentation where possible, GAWB has for who is to be contacted about flows from Awoonga Dam and their effects and when, and the rationale for those procedures (item number 12)

48. GAWB's EAP (which is discussed at paragraph 12 and has its front page marked 'JRG4') outlines GAWB's procedures and supporting rationale concerning flows from Awoonga Dam (see specifically Flood Actions 1.1 to 1.5) in the EAP.

An account of any internal or external discussions, decisions or meeting regarding giving warnings to residents of Benaraby of flows from Awoonga Dam and their effects (item number 13)

49. In accordance with the EAP (described at paragraph 12 and marked 'JRG4') GAWB has responsibility for communicating with residents who live immediately downstream of Awoonga Dam, mostly in the Pikes Crossing precinct within Benaraby, of the potential for flooding as a result of water crossing over the spillway at Awoonga Dam.

50. Pursuant to the EAP, GAWB will communicate with these residents if it forms the view that:

- water is likely to cross over the spill way (action plan 1.1 – see paragraph 21 herein);
- water crossing the spill way is likely to reach 45.26 m (1 in 100 flood event) (action plan 1.2 – see paragraph 32); and
- water crossing the spill way is likely to reach 47.81 m (1 in 1000 flood event) (action plan 1.3 – had this been necessary etc).

51. In addition to the provisions of the EAP, GAWB delivered correspondence, signed by me as GAWB's CEO, on 9 November 2010 to each resident listed in the EAP to emphasise the likelihood of downstream flooding in the

2010/2011 wet season, in contrast to wet seasons in recent memory, having regard to both the high pre-existing storage in Awoonga Dam and rainfall forecasts.

52. With the exception of the above, GAWB recognises that the LDMG has the key responsibility for the provision of warnings to residents of Benaraby (and elsewhere in the Gladstone Region). GAWB is concerned not to undertake external communications that affects clarity as to the role of the LDMG.

An account of any internal debrief following the 2101/2011 wet season, any issues identified and any plan of action to address those issues (item number 12)

53. An internal debrief of the flood event that commenced in late December 2010 was undertaken in early January 2011 and a memorandum produced for consideration of management dated 20 January 2011. A copy of this memorandum with the front page marked '**JRG16**' will be produced in response to the notice to produce information referenced at paragraph 3.
54. Reference is also made to the discussion of the copy of the report to the Dam Safety Regulator dated 9 February 2011 at paragraph 22 herein (with the front page marked 'JRG11') which contains references to lessons learnt.
55. The debrief that was undertaken in January was the subject of a presentation to GAWB's Board on 27 January 2011. A copy of this presentation with the front page marked '**JRG17**' will be produced in response to the notice to produce information referenced at paragraph 3.

56. GAWB believes that the first activation of the EAP (that is discussed at paragraph 12 and has the front page marked 'JRG4') was undertaken appropriately.
57. In my assessment the key opportunities for improvement are focussed upon the following areas:
- a. The meaning of predicted levels of water stored by Awoonga Dam – the meaning of 'prediction' should be more precisely defined in the EAP and associated advice supplied to LDMG in an agreed format. As the LDMG uses this information to inform assessments concerning the potential for downstream flooding it would seem appropriate to incorporate a useful sensitivity around the impact of BOM forecast rainfall. Discussions have occurred with representatives of the LDMG concerning this opportunity for improvement and within GAWB around the content this year. These matters will be incorporated into the EAP before the commencement of the 2011/2012 wet season.
 - b. Improvements in data capture around water flow predictions – as detailed at paragraph 18(e) herein, since July 2010 GAWB has been arranging meetings with representatives of BOM and the LDMG to facilitate improvement in the quality of the recording of rainfall data within the Boyne catchment (which inturn improves the accuracy of water level predictions). Produced in the bundle of documents (marked 'JRG8') is an outline of the actions that are proposed by GAWB (*Boyne River Flood Monitoring – Strategy 2010* document dated October 2010). This strategy is being implemented by GAWB in 2 parts: firstly

a focus on what could be completed by December 2010 which included the immediate re-instatement/upgrade of two existing and one decommissioned River Gauging Stations; and secondly, the finalisation of all remaining actions during 2011. The implementation of the first part of this strategy was completed in accordance with program and the second is proceeding. Associated to this will be enhancements to the water level prediction model (discussed at paragraph 33 herein) to support its use by GAWB staff.

- c. Awoonga Dam level meter – Following Awoonga Dam spilling, GAWB determined that the devices that it used to record lake levels, were both incorrectly calibrated to give readings that were about 10-15cm lower than actual water levels. This has been rectified with the calibration of the meters now having been corrected. I am advised that definitive calibration was not able to be completed until after the water levels in the dam reached capacity.

58. From the perspective of the infrastructure, first filling of Awoonga Dam is a significant event especially given the magnitude (ie 140% full supply capacity). This event will have tested the infrastructure that was constructed with the raising of the Dam 2002 for the first time. Accordingly, GAWB has also planned further investigation activities concerning the dam and saddle dams to confirm their continued compliance with design parameters as part of its work program in 2011.

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James Robert Grayson

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Witness

SWORN in Brisbane



Before me:

Alexandra Marguerite Ford
13 May 2011



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~~Justice of the Peace~~/Solicitor

Exhibit 502
Annexures to Statement of James Grayson
dated 13 May 2011

Tendered by QFCI, 27 May 2011

The annexures to this exhibit are too large to upload to the website, but are available on request.