

17 January 2011

The Australian
GPO Box 4245
Sydney NSW 2001

Attention: The Editor

Dear Sir,

Re: 'Calamity "inevitable" after decision on low dam releases' (by Hedley Thomas, The Australian, 17 January 2011, p1)

As a practicing Water Resource Engineer with direct experience in the hydrology and operation of the Water Grid and the Somerset/Wivenhoe Dams, it is important to provide a measured response to the commentary that the devastating floods downstream of the Wivenhoe Dam were somehow exacerbated (or even caused) by the inappropriate operation of the flood management system.

Given the devastation and heartache being felt by so many, it is highly irresponsible to then imply, without any credible justification, that their suffering was either avoidable or due to the incompetence of others.

Since the flood peak, there has been neither the time nor the opportunity to properly review and validate the mountain of data recorded during what was, almost certainly, the most extreme rainfall and runoff event experienced in the past 100 years. At least some of the mechanical and electronic instruments have failed to keep pace or were damaged, thus yielding data unreliable and flawed. Any assessment using unvalidated data should not be given any credence and is, in itself, dangerous.

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Apart from any unprofessional use of unvalidated data to present outcomes for such important and life-impacting natural events, there is basic lack of understanding of the design and operation of Wivenhoe Dam.

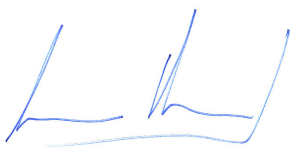
Along with countless other water resource engineers, I was repeatedly questioned and challenged during the drought as to why we (as a region) did not make use of the flood mitigation component of Wivenhoe for storing water for water supply purposes. Those asking often repeated the same simple reasoning – here is all this unused storage ‘going to waste’. What possible problem could there be of using some of that flood storage for water supply?

The nation has just witnessed the very reason why Wivenhoe was specifically designed and is very carefully operated as a flood mitigation storage, even when very recent experience in an extreme drought shows that any rainfall-dependent water supply is a vulnerable and valuable resource.

In drought and flood, we have to carefully balance water supply with flood mitigation. We cannot (and must never) erode the flood storage component of Wivenhoe for water supply and vice versa. These decisions must be based on careful analysis and well-founded science, not on fag-packet arithmetic.

The operational rules of all dams should be reviewed when extreme events occur. Anyone who is even remotely aware of the diligence and professionalism displayed by those in the Government Flood Room will want them heavily involved in the review – not the armchair critics who only appear when it suits them.

Yours sincerely,



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allocation, supply and management assessment as well as innovative application of modelling techniques to assess specific management options and impacts.

- Integration of project specific water supply and management simulation within regional water allocation and management models. IQQM modelling of regulated basins in both NSW and Queensland and linking of the model to specific purpose written models for simulation of project water supply and management - Tarong Power Station, Cadia Gold Mine.
- Water Supply modelling and Water and Salt Balance modelling for proposed mine sites: Formulation and development of water supply/management simulation models for the assessment of mine site water management structures and water supply – Stuart Oil Shale Project, Stratford Coal Mine, Cadia Gold Mine, Duralie Coal Mine, Moura Methane Project, Ridgeway Gold Mine.
- Irrigation system modelling associated with development site water management: Development of an irrigation simulation model for the assessment of varying irrigation regimes on the basis of soil types, water quality, climatic variability and irrigation operating schemes - Terranora Country Club EMP, Duralie Coal Mine.
- Flood modelling and Flood estimation: Modelling and estimation of flood levels and peak discharges for design of water management systems. Utilisation of backwater analysis modelling and runoff routing software packages for simulation of design floods and flows - Cadia Gold Mine, Stratford Coal Mine, Monto Ilmenite Project.
- Formulation of water management strategies for proposed and operating projects, including incorporation of surface and groundwater resources – Stuart Oil Shale Project, Stratford Coal Mine, Cosmo Howley Gold Mine, Cadia Gold Mine, Duralie Coal Mine, Moura Methane Project.
- Design of Watercourse Diversion and Stabilisation Works: Hydrologic and hydraulic design of diversions under peak flow conditions. Design of stabilisation works for peak flow conditions.
- Sediment Control design and assessment for site residential developments.
- Assessment of management planning strategies for waste disposal including waste stream surveys, conceptual design and assessment of options for future waste management, and detailed design of final waste disposal strategy.
- Water supply investigations: Conceptual development, field assessment and final design of water supply schemes (Groundwater and/or surface water based) for proposed and operating mines.
- Climatic, water quality and streamflow monitoring. Monitoring and sampling of surface and groundwaters. Establishment and maintenance of gauging stations and climate monitoring stations - Union Reefs Gold Mine, Ridgeway Gold Mine.
- Earthworks/engineering construction works: Design and construction supervision of earthworks and revegetation of mine waste dumps and tailings dam rehabilitation. Compilation of specifications and associated contractor construction works documents - Toms Gully Gold Mine, Greenvale Nickel Mine, Mt Rawdon Gold Mine.
- Supervision Geotechnical, Earthworks (Soft-fill, Hard-fill, Marine Reclamation, Leachate Drainage material) and construction works. Inspection of operations, Troxler testing and acceptance of earthworks. Pipeworks installation (Water Supply, Leachate Force Mains, Fire Services and Drainage Services). Inspection and acceptance of trenching, bedding and backfilling operations, Pipeline materials and fitting/joining methods, and Pre-concrete pour inspection for manholes and concrete haunch/surrounds - SENT Landfill (Hong Kong).