

OTWAY WATER BOOK 10

Waves of Obfuscation!

Malcolm Gardiner (November 2009)

Loves Creek – During the worst drought on record – continuing to flow.

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November 2009

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Email: otwaywater@yahoo.com.au

ACKNOWLEDGEMENT and DEDICATIONS

This book is dedicated to and in acknowledgement of the inspiration gained from *“...many concerned, dedicated and thoughtful committed citizens who are prepared to exercise their democratic rights ...”*

Adapted from Derrick Jensen’s “Endgame Volume ii, resistance”

“Civilisation is based on a clearly defined and widely accepted yet often unarticulated hierarchy. The doings of those higher on the hierarchy often go unchallenged and or unnoticed. However when it is noticed and challenged by those lower in the hierarchy it is fully rationalised as justifiable. Action taken by those lower on the hierarchy to those higher, is regarded with shock horror.

Those high in the hierarchy regard their actions as acceptable meeting their needs even when destroying the well being of those below and especially those without a voice.”

Audre Lorde has this to say...*“I realise that if I wait until I am no longer afraid to act, write, speak, be, I’ll be sending messages on a ouija board, cryptic complaints from the other side.”*

Yvon Chouinard – Patagonia Clothing. *“If you have the ability, the resources and the opportunity to do good and you do nothing, that can be evil.”*

INTRODUCTION

The Barwon Regional Water Authority has been extracting large volumes of groundwater from the Gerangamete Groundwater Management Area on a regular basis since the drought of 1982–83. The water is extracted between 500 to 600 metres below ground level, at the Barwon Downs borefield. It is treated and then conveyed and used in the Greater Region of Geelong. The environmental and social impacts of this pumping regime have been profound. When Barwon Water indicated that it was going to begin test pumping from a borefield at Kawarren with the aim of extracting 16 000 ML/year, Barwon Water’s Sustainable Management Practices came under scrutiny from the Loves Creek (Kawarren) and Gellibrand River Catchment community residents and landholders.

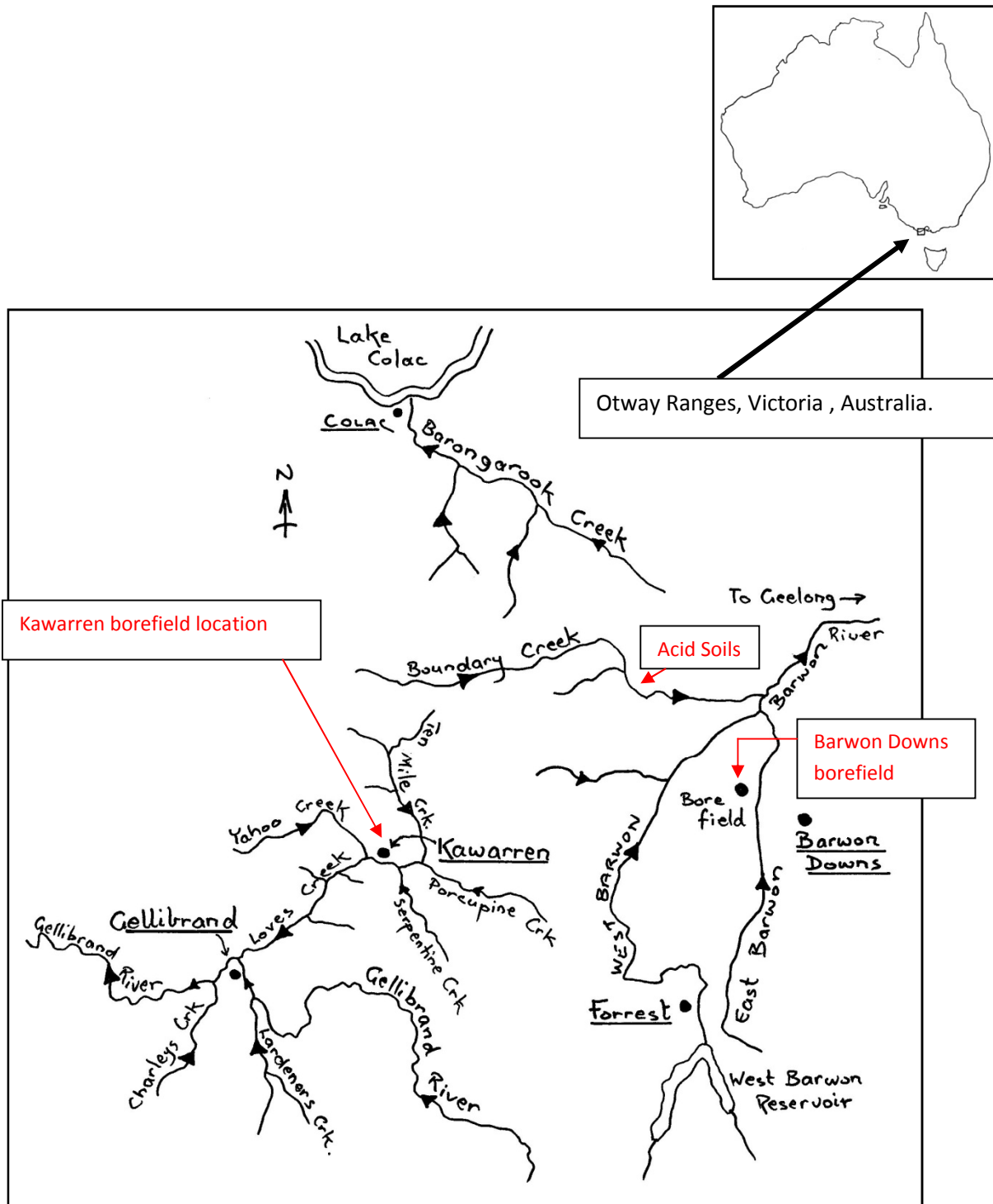
This scrutiny indicated that there had to be a monumental shift in sustainable management practice before any groundwater extraction of any kind could be allowed to proceed at the Kawarren or any other new borefield.

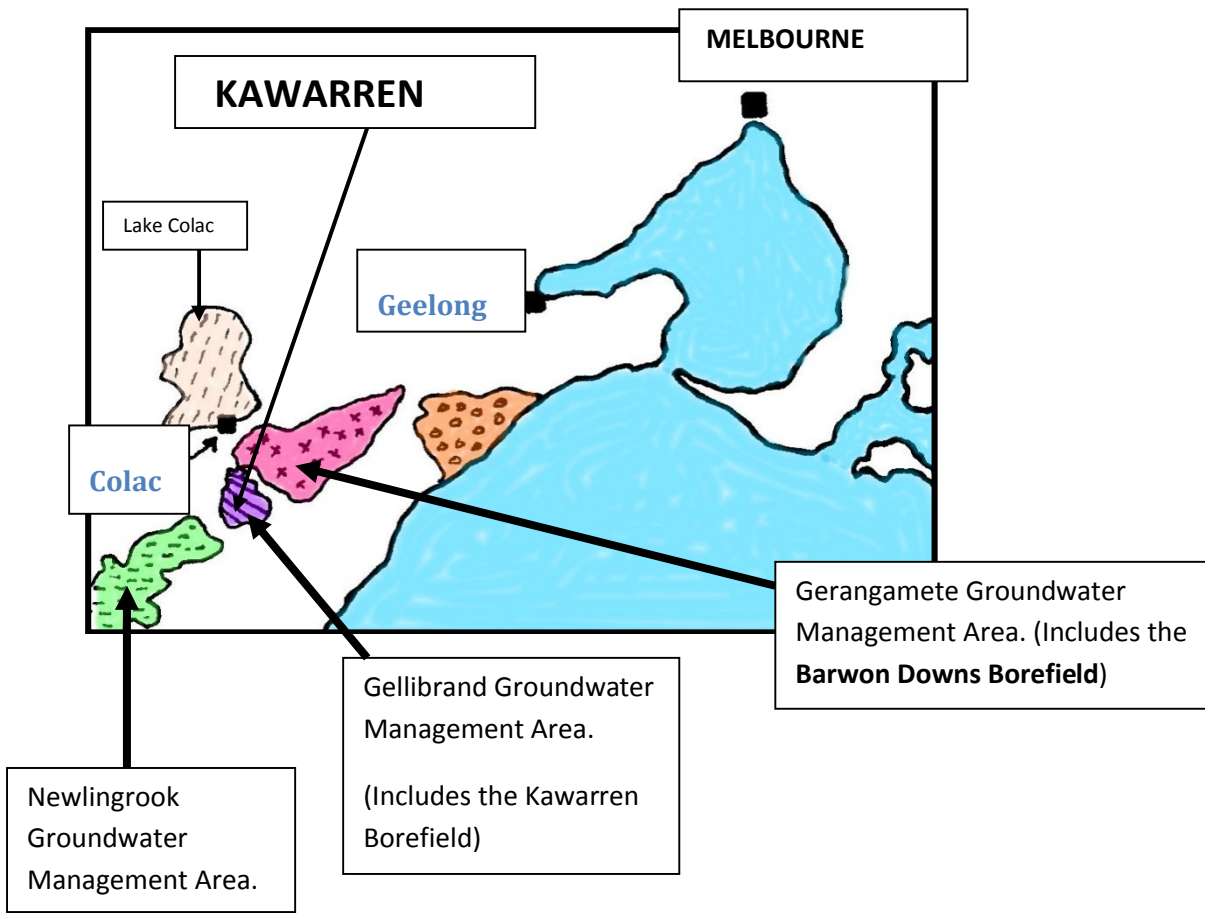
This book is the tenth of a series on Otway Water. Earlier books have provided documented and referenced material that clearly shows groundwater extraction from the borefield at Barwon Downs has had a profound detrimental affect on the area surrounding this borefield. It is blatantly obvious that a full and comprehensive review of groundwater extraction in the Barwon Downs area is long overdue. Considering that the planned borefield investigations at Kawarren were to be conducted in a similar fashion to the 1987 Barwon Downs borefield investigations, eight groups of local residents appealed against Southern Rural Water’s October 2008 issuing of a licence to Barwon Water to conduct a test pump of groundwater at Kawarren.

Otway Water Book 10 is a continuation of this story, and this story must be told. Poorly conducted studies, irresponsible action and failure to act must be noted, recorded and disputed. To allow these things to go unchallenged sets precedents for continuing degradation of the environment and the erosion of country communities’ rights.

It is most important for those who take up the continuing “battle” of preserving the environment and country people’s rights that they have a solid and reliable source of background data and knowledge from which to draw upon. Hopefully this tenth book on Otway Water will at least partly achieve this purpose.

LOCATION MAP





Source: The Our Water Our Future Victorian State Government publications.



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PART ONE

Barwon Downs Borefield



CHAPTER 1

Barwon Water's Sinclair Knight Merz Report⁽⁴⁰⁾ "Barwon Downs Flora Study 2008."

Otway Water Book 9⁽²⁶⁾ documents a detailed account of decades of poor management, inadequate studies, failure to follow up critical recommendations, ineptitude and is summarised in the following Introduction taken from Book 9.

"INTRODUCTION (Otway Water Book 9)

Since the drought of 1982-83 the Barwon Downs borefield at Gerangamete in the Otway Ranges, has supplied a significant amount of groundwater for urban consumption. Without this supply of water the City of Greater Geelong would have come extremely close to running out of water on numerous occasions.

In the late 1980s the Government of the day repeatedly stated that the extraction of groundwater, unlike surface water impoundments (dams), did not create environmental problems. Consequently the Geelong and District Water Board (now Barwon Water) was encouraged to develop the Barwon Downs borefield.

"Because the use of groundwater usually has few adverse environmental effects, it is often favoured over surface sources which can have marked effects." (Report No 18 Department of Water Resources, June 1988.)

Unfortunately it has been found that there can be serious impacts when groundwater is extracted faster than it can be replenished. Streams, springs and wetlands begin to dry up; acid sulfate soils can become a major concern and there is substantial argument to support the notion that salinity problems can result. These problems impact on both the well being of humans and the environment.

This book highlights detrimental impacts that have resulted from groundwater extraction along Boundary Creek at Yeodene and presents an entirely different result to the published results of a study conducted by Sinclair Knight Merz on behalf of Barwon Water.

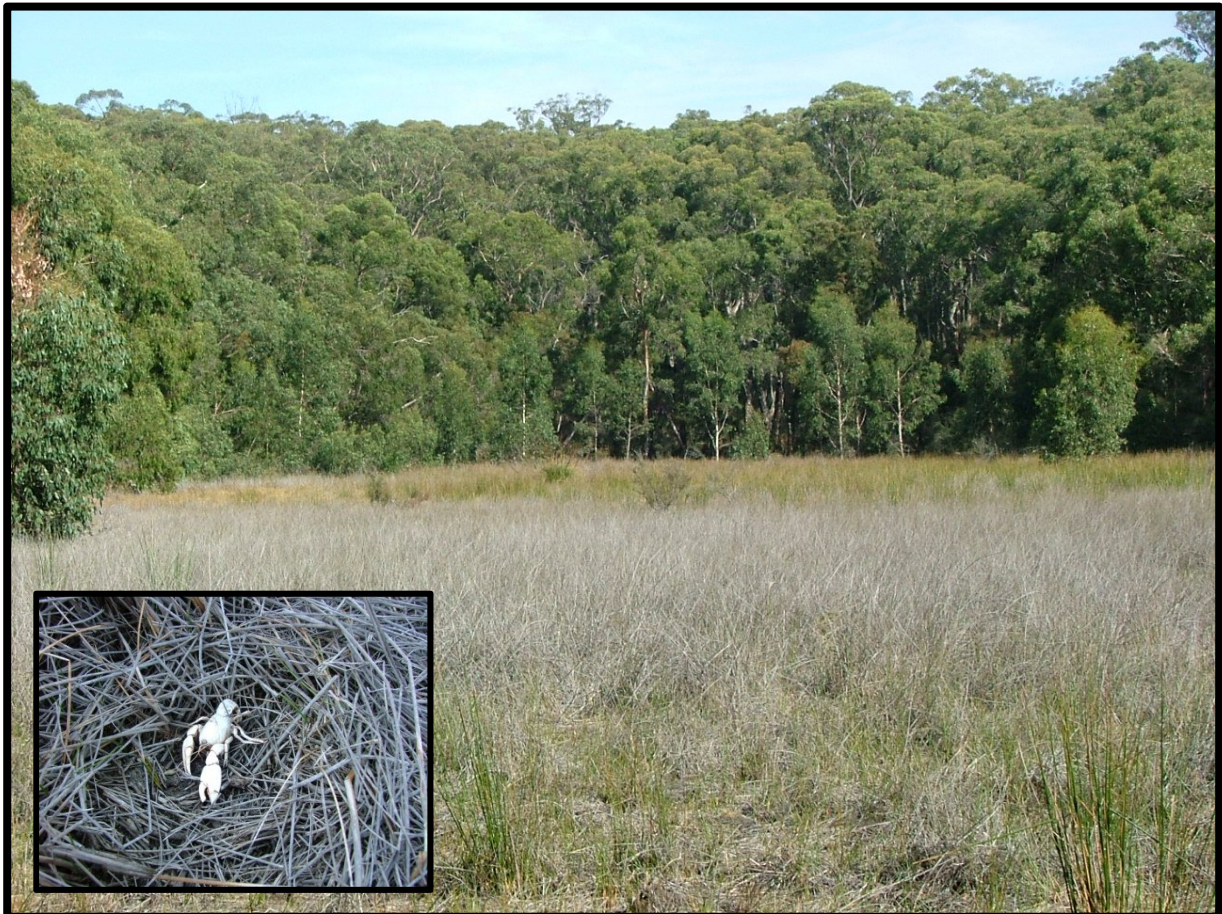
*Barwon Water released a media statement regarding the Sinclair Knight Merz report (April 23, 2009. REF: 063/09) that was headed "**Flora study inconclusive.**" It will be demonstrated that conducted differently, this flora study would have had another and more plausible result. If the "*conducted field surveys, reviewed groundwater levels and assessed new and previous data,*" had been completed as suggested in this flora study, the results would have been totally different.*

This Barwon Water Media release contains half truths, misleading information and incorrect statements that masks some incredibly poor research.

However, the most damning indictment being that the flora study recommendations made in 1986, 1993 and 2002 were never implemented. As a consequence decades of crucial, comparative baseline data has been lost.”

The unfortunate aspect of this particular issue of the flora studies, and the reason for revisiting it again, is that nothing has been resolved even though a compelling case is presented in Book 9 that the groundwater extraction licence at the Barwon Downs borefield should be reviewed immediately. This book, Otway Water Book 10, confirms this belief and present a multitude of similar issues indicating that groundwater extraction from the Otway Ranges is in desperate need of review. With continued endeavour it is hopeful that these issues are kept alive.

The poor decision making by the State Government authorities responsible for the adequate management of our water resources in the Otways is all too apparent and must be regularly brought to the Government’s attention. The regulatory authorities are not adequately performing their tasks.



Photograph taken 2009. This site surveyed in 1993 was a thriving swamp. All that can be found now are bleached yabby shells.

CHAPTER 2

Acid Sulfate Soil – the continuing story

State Government statutory authorities have been neither willing nor capable of dealing with the suspected Actual Acid Sulfate Soil problems along Boundary Creek in the Otway Ranges Victoria.

Background.

In the book “Otway Water – One Giant Environmental Footprint”⁽²⁵⁾ Book 8, it is clearly evident that groundwater water extraction has been the major reason for drying out of previously saturated peaty wetland swamps. As the peat dries it subsides and becomes carbon negative releasing carbon to the atmosphere. But by far the biggest concern is the production of Actual Acid Sulfate Soils. High concentrations of acid and heavy metals become lethal to both the surface water and groundwater ecologies, not to mention the health hazard to humans.

The unconfined aquifer along Boundary Creek is displaying symptoms of an ever increasing area of influence from Actual Acid Sulfate Soil (AASS).



Water sampling levels...

- pH as low as 2.6.
- aluminium to 29 mg/l
- lead 0.022 mg/l
- nickel 0.182 mg/l
- zinc 1.08 mg/l

- iron 372 mg/l
- cadmium 0.0026z mg/l
- arsenic 0.222 mg/l
- copper 0.463 mg/l



In the Corangamite Catchment Management Authority’s 2007-08 Annual Report, it states...

“Soils are the building blocks of the region. They are the medium for plants to grow, the path for water to flow or lie and the foundation for natural assets and infrastructure. Soils are critical to farming and economic production – in essence, soil health is crucial to survival.”

Tardy response

Considering the documented amount of detail pointing to a serious Actual Acid Sulfate Soil problem along Boundary Creek, it could be assumed that any formal complaint over this issue would be immediately investigated. Even after graphic footage on the ABC Victorian Stateline television program, 10 October 2008, the Environment Protection Authority (EPA), the Corangamite Catchment Management Authority, Southern Rural Water, the Department of Sustainability and Environment, the Colac Otway Shire and Barwon Water have been tardy to show anything but a mild concern. It is now November 2009 and the site still has not been visited by the EPA.

Time Line of Events up to the end of November 2009

- Early 1990s acid levels in Boundary Creek dropped below 4 pH as recorded at the stream flow gauging station on the Colac to Forrest Road Bridge - Station Number 233228. This should have triggered an immediate investigation.
- 4 December 2007 Colac Otway Shire first approached regarding water issues in the Shire.
- By 22 April 2008 at an Ordinary meeting the Council unanimously adopted the following resolution, *“That Council, although it is outside our area of responsibility, recognises the community’s concern regarding the potential impacts of groundwater extraction from the Gellibrand Aquifer.”*
- The best that the Mayor of the Shire could recommend in April 2008 was that community concerns be raised directly with the relevant agencies and that questions asked of the Shire will be taken to the next Newlingbrook Reference Group meeting. This group comprised the major stakeholders in the groundwater extraction investigations to be conducted at the Kawarren borefield. This group last met in August 2007 and has not met since. None of the questions asked of the Shire have been answered. The August 2007 meeting was the one and only meeting of the Reference Group. Local residents with the most to lose were excluded and denied access to this group’s proceedings.
- Although the issue of Acid Sulfate Soils still hadn’t become apparent the letter on page 13 is indicative of the degree of support the Shire was to provide when the issue did arise later in the year.
- Much correspondence and contact was made with the Shire Councillors and officers over the coming months in regard to water issues in the region but unfortunately with little influence. Convincing the Shire that the water issues were within the Shire’s responsibility was mostly ignored.
- June 2008 Malcolm Gardiner became sick (diarrhoea) and had his hand affected sipping the first flush of winter rains down Boundary Creek.⁽²⁶⁾
- An attempted to find the cause of this phenomenon was put in motion.
- July 2008 observations in Boundary Creek jogged a memory from readings of similar appearances in water affected by Acid Sulfate Soil problems.
- August 2008 water samples taken from Boundary Creek were sent off for analysis.
- 2 September 2008 these water results indicated a serious problem.
- Middle September 2008 an “expedition” was mounted in an attempt to discover the source of the unacceptable levels in the water samples.
- The Big Swamp area adjoining Boundary Creek was found to be under extreme stress with signs of an increasing area of dying wetland dependent ecosystems.
- Water samples were taken from the moist peat some distance below the dry surface.
- By 1 October NATA accredited water sample test results indicated that the Big Swamp was most likely the source of the toxic water.

Our Ref: Water Management GEN00435 Barwon Region Water Authority
Your Ref: Letter to Cr. Smith
Contact: Stewart Anderson



7 July 2008

Malcolm Gardiner
1805 Colac Beech Forest Road
KAWARREN VIC 3249

Dear Malcolm

Kawarren/Gellibrand Groundwater Extraction from the Kawarren Borefield

I refer to your letter received on 27 June 2008 and as stated in my previous letter sent to you on 28 April 2008, Council is very supportive of the community's efforts to seek clarification with regard to this matter.

There are a wide range of questions and issues you have raised in your most recent letter which range from comments and opinions to technical/statutory responsibility questions. As you have previously been advised, Colac Otway Shire is not in a position to answer the technical and statutory responsibility questions you raise about the test pump. These questions should be directed to Barwon Region Water Authority which is the organisation with the responsibility and expertise with regard to this matter.

In relation to your questions about the Reference Group, Council has asked Barwon Water on a number of occasions when the next meeting would occur. This meeting has now been arranged for 14 July 2008.

Council officers will raise a number of the matters you have identified in your correspondence over the past six months. As you are aware the minutes from the Reference Group meetings are not being made available to the public. However, I am happy to write to you after the meeting to provide a summary of the responses to questions asked by the Council representative.

If you have any enquiries concerning this matter, please contact Council's Manager for Environment and Community Safety, Stewart Anderson on 5232 9400.

Yours sincerely

Cr Chris Smith
Mayor

Cc: All Councillors
Tracey Slatter, Chief Executive Officer
Doug McNeill, Acting General Manager Sustainable Planning and Development
Stewart Anderson, Manager Environment and Community Safety

Colac Otway Shire
PO Box 283
Colac Victoria 3250
www.colacotway.vic.gov.au
inq@colacotway.vic.gov.au

Colac Service Centre
2-6 Rae Street
Colac Victoria 3250
Ph: (03) 5232 9400
Fax: (03) 5232 1046

Apollo Bay Service Centre
69-71 Nelson Street
Apollo Bay Victoria 3233
Ph: (03) 5237 6504
Fax: (03) 5237 6734

Up to this point many of these events are documented in "Otway Water – the Summaries"⁽¹⁹⁾ Books 3-7.

- Statutory authorities showed but a cursory interest in the Acid Sulfate Soils concerns.
- September 2008, the Colac Otway Shire was reminded of some of its responsibilities under its Planning Scheme Overlays...
 - to protect areas of significant vegetation,
 - to maintain and enhance habitat including wetlands and streams (with Boundary Creek being specifically named),
 - to protect areas prone to land degradation processes,

- to protect water quality in accordance with the provisions of relevant State Environmental Protection Policies,
 - the protection and enhancement of the biodiversity of the area,
 - to protect and maintain the quality and quantity of groundwater recharge in the Barwon Downs Wellfield Intake Area and to the geological aquifer intake beds within the municipality.
- After months of trying to work co-operatively with the Colac Otway Shire over water issues the best the Council could do was to move and pass *“That the Council advocates strongly to ensure farmers, residents, businesses and environmental flows are not put at risk by water harvesting schemes, particularly the Kawarren/Gellibrand area. That the Chief Executive Officer seek to arrange for Councillors to meet with Barwon Water board members to discuss areas of mutual concern such as , but not limited to: Kawarren Underground Water, Apollo Bay Water, Water for Intensive Agriculture, Colac Water, recycled Water.”* Kawarren/Gellibrand community residents voicing concerns were not included in, or advised of any discussion or outcomes reached.
 - The Australian Broadcasting Company ran with the Acid Sulfate Soils story on Victorian Stateline 10 October 2008. The decision to involve the ABC was a direct result of inaction from authorities with the statutory responsibilities to act on such an issue.
 - Barwon Water claimed no knowledge of any problems of Acid Sulfate Soils along Boundary Creek (Mr. Michael Malouf, Managing Director - Barwon Water, ABC Stateline program).
 - Because discussion about the ASS concern seemed to be falling on ‘deaf ears,” a **formal complaint** was lodged with the Environment Protection Authority (EPA) ⁽²⁶⁾ on the 15 October 2008. This letter provided substantial indications of a serious problem along Boundary Creek.
 - 24 November 2008. Colac Otway Shire replies to an ASS enquiry (Ref. 262580-Gen00127), noting concerns and stated a reply would be forthcoming.
 - 26 November 2008. Southern Rural Water was asked by email to investigate a possible ASS problem along Boundary Creek.
 - 26 November. EPA replied to the formal complaint stating it will take no action. ⁽²⁶⁾
 - 29 November 2008. Another **formal complaint** was lodged with the EPA. ⁽²⁶⁾ As of November 2009 no reply – 12 months after the first formal complaint.
 - 30 November 2008 the Victorian Farmers Federation wrote to Tim Holding the Water Minister regarding its concerns that Barwon Water was over extracting groundwater. Minister Holding replied 24 July 2009⁽²⁶⁾ stating that Southern Rural Water, the licensing authority responsible for administering Barwon Water’s licence, is satisfied that Barwon Water is adhering to its licence conditions.
 - 4 December . Geelong Advertiser ran with the story of “Acid wiping out Otways swamp.” This article was a direct criticism of the EPA’s inaction to investigate the ASS.
 - 5 December 2008. Barwon Water issues the following media release (Barwon Water Ref: 226/08).

Media release

December 05, 2008
REF: 226/08



1908 - 2008

Soil claims 'premature'

Barwon Water today described as "premature and speculative" claims that groundwater pumping at Barwon Downs is responsible for acid sulphate soil in the area.

Acting Managing Director Joe Adamski said a flora investigation currently underway would determine if there was any relationship between the two.

"The study is being undertaken as part of ongoing environmental modelling and a sustainable management program. It will look at the impact or otherwise of groundwater operations on the local flora.

"It would be injudicious to comment until that information is available," Mr Adamski said.

Mr Adamski was referring to a newspaper report in which Barwon Water was accused of creating conditions for the formation of acid sulphate near a local waterway, Boundary Creek.

He said a robust monitoring program had been in place since the borefield began operating in the 1980s. "We currently have more than 60 observation bores monitoring water levels and salinity and there have been a number of significant related investigations. The flora study is another element on that continuous process," Mr Adamski said.

The Barwon Downs borefield is a crucial supply source for Geelong during dry conditions.

Located south of Colac, it has met up to 70 per cent of the region's needs since being brought on line in 2006 when the full impact of the drought hit regional reservoirs.

It is currently meeting around 30 per cent of demand.

The groundwater reserve holds more than more than 500,000 megalitres (million litres). By comparison, Geelong's largest storage at Wurdee Boluc has a capacity of 40,000 megalitres while West Barwon Reservoir can hold 20,000 megalitres.

Mr Adamski said Geelong was in the enviable position of having a major groundwater resource at Barwon Downs. "Indeed, we are one of the few urban areas in Victoria with significant groundwater supplies.

"Barwon Downs has thrown Geelong a lifeline several times over the past 30 years; without it, we would have been in dire straits.

"Because of its importance to our diversified supply network, we are ensuring the resource is respected, protected and sustainable. To do otherwise would be irresponsible."

Mr Adamski said data gathered over three decades dictated the parameters for operating the borefield. These parameters were included in strict licensing conditions set down by Southern Rural Water.

He said Barwon Water had readily acknowledged Boundary Creek was affected by operations at Barwon Downs. But monitoring also indicated Boundary Creek had run dry when the borefield had not been operating.

"We should be mindful of the fact the region is still gripped by drought - and, based on Bureau of Meteorology forecasts, there appears little likelihood of any relief over summer," he said.

Further information: Cassie Milner, Media Liaison Officer,
Telephone: Work (03) 5226 2352 Mobile 0401 857 580

- 5 December an email is sent to Southern Rural Water (SRW) asking for a response to a possible Acid Sulfate Soil problem along Boundary Creek. The same day a letter is sent from SRW. The problem will be looked into. As there had been no response from Southern Rural

Water by 4 March 2009 a **formal complaint** is sent regarding the Acid Sulfate Soils concern.
⁽²⁶⁾ As at November 2009 there has been no reply.

- 11 December 2008. A Geelong Advertiser article by Tony Prytz, states Barwon Water will be looking at vegetation at a number of sites.
"If soil health is found to be an issue, we will investigate further."

TONY PRYTZ

BARWON Water was monitoring the potential impact of its Barwon Downs groundwater operation on local vegetation, a senior manager said yesterday.

General manager of strategy and technology Joe Adamski said flora specialists were looking at the condition of native vegetation at a number of sites in the aquifer recharge area.

Mr Adamski was responding to claims made last week by activist Malcolm Gardiner that groundwater pumping was creating acid sulphate soils in the Otways.

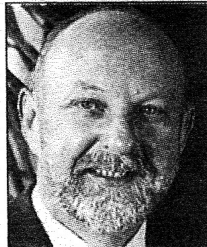
Mr Gardiner released pictures showing degraded soil and dead trees and plants in Big Swamp, at Yeodene, and claimed the devastation was due to Barwon Water's pumping at Barwon Downs.

Mr Gardiner yesterday was critical of the authority's response.

"Acid levels in Boundary Creek have been increasing progressively and have been at toxic levels since the early 1990s," he said.

The Big Swamp area, along Boundary Creek at Yeodene, was dying and the influence of the acid and heavy metals had been spreading for more than a decade.

"I am astounded that Barwon Water is not concerned about this toxic mix leaching into



Joe Adamski

their groundwater reserves," Mr Gardiner said.

"Barwon Water's flora and fauna investigations in the early 2000s were a farce and there is no confidence that the proposed 2009 flora ones will be any better."

Mr Adamski said the study would also examine a range of other impact factors, such as drought, weed infestation, fire and other causes of disturbance.

"If soil health is found to be an issue, we will investigate further," he said.

The borefield had "thrown Geelong a life-line several times".

"Without it we would have been in dire straits."

On some occasions the bore met as much as 70 per cent of Geelong's water needs; it is currently meeting about 30 per cent of demand.

Barwon Downs borefield is estimated to hold 500,000 megalitres (million litres). Wurdee Boluc storage basin holds 40,000 megalitres and West Barwon Reservoir just 20,000.

- 12 December 2008. Colac Extra runs an Acid Sulfate Soil story pointing out the Environment Protection Authority's inaction. This article also reports that the acid problems are most likely a result of Barwon Water's groundwater extraction activities at Barwon Downs.
- 16 December 2008. Barwon Water replies to the Colac Extra story with another media release (Barwon Water Ref 233/080).
- 17 December 2008 Chris Hughes, Manger Field Operations & Compliance, Southern Rural Water, states in a letter (see page 30) that the Acid Sulfate Soils will be incorporated in Barwon Water's Flora Study investigation.

Media release

December 16, 2008
REF: 233/08



1908 - 2008

Groundwater use

Barwon Water Managing Director Michael Malouf said while he respected Malcolm Gardiner's right to raise concerns about the possible effects of groundwater use, Barwon Water had no evidence that its borefield at Barwon Downs was responsible for the reported appearance of acid sulphate soils.

"Throughout his campaign against Barwon Water's use of groundwater Mr Gardiner has failed to acknowledge and address one very important aspect; without Barwon Downs borefield, 250,000 Geelong residents would be running very short of water due to the drought," Mr Malouf said.

"Barwon Downs has thrown Geelong a lifeline several times over the past 30 years; without it, we would have been in dire straits."

The borefield is currently meeting around 30 per cent of demand.

"Because of its importance to our supply network, we are ensuring the resource is respected, protected and sustainable. To do otherwise would be irresponsible," Mr Malouf added.

"Barwon Water is developing a diversified supply system that will allow us to scale back our use of Barwon Downs borefield in the coming years. We have the Anglesea borefield coming online next year, followed by the Melbourne-Geelong interconnection, Northern Water Plant and Black Rock recycled water plant over the next five years.

"At the moment the borefield remains a crucial supply source and has, at times, met up to 70 per cent of the region's needs since being brought on line in 2006 when the full impact of the drought hit regional reservoirs."

Mr Malouf said the latest vegetation studies were part of a robust long-term monitoring program.

The program has been in place since the borefield began operating in the 1980s. Currently there are more than 60 observation bores monitoring water levels and salinity and there had been a significant number of related investigations.

"The vegetation monitoring component is an element of that continuous process. It was established in 1994 to improve our understanding of the interaction between groundwater, surface water and the health of native vegetation in recharge areas," Mr Malouf said.

"If soil health is found to be an issue, Barwon Water will investigate. Such an investigation would cover other potential impacts, including drought, weed infestation, fire and other causes of disturbance."

Ends

- The Colac Extra 8 January 2009 runs with this Barwon Water media release and quotes Michael Malouf as saying, "*We are ensuring that resource is respected, protected and sustainable. To do otherwise would be irresponsible.*" Unfortunately "soil health" was **not** included in the Flora Study being conducted in the area at the time of this media release. Barwon Water chose to ignore any such investigation on the grounds that the conditions of the Barwon Downs licence did not include soil testing or Acid Sulfate Soil (ASS) investigations. The substantial amount of circumstantial evidence indicates there is a soil problem. This has been brought to the attention of numerous statutory authorities including Barwon Water, yet no such investigation has been conducted. So much for Chris Hughes's (Manager Field Operations & Compliance officer of Southern Rural Water) assertion that that the ASS would be included in this Flora Study.
- Colac Otway Shire Council elections took place late in 2008 with a majority of new councillors elected.

- Late December 2008 four Colac Otway Shire councillors, including the newly elected mayor, visited Gellibrand and indicated to a Kwarren/Gellibrand water gathering, a keen and supportive interest in the ASS debate.
- 27 January 2009. Southern Rural Water asked once again to respond to the ASS.
- 8 February the Corangamite Catchment Management Authority (CCMA) is asked to look into the Acid Sulfate Soil concern. The reply 26 Feb. 2009 indicates that it is not the CCMA's immediate problem.⁽²⁶⁾
- 17 February 2009 the Mayor of the Colac Otway Shire, one other councillor and the Environment Officer toured the suspected Acid Sulphate Soil site. This "tour" had been arranged to take place a month earlier but not all councillors were available. As it turned out this was still the case even with another month's notice and the date set to suit all councillors.
- 4 March 2009 a **formal complaint** was sent to Barwon Water.⁽²⁶⁾ The 20 April reply⁽²⁶⁾ from Michael Malouf, Managing Director, states that Barwon Water is aware of the site under contention and "[...proposes to work with agencies to scope out an appropriate investigation of ASS taking into account local, regional and broader scales.](#)" As at November 2009 there is no sign of this having been commenced.
- 4 March 2009 a **formal complaint** was sent to Peter Harris, Secretary –Department of Sustainability and Environment.⁽²⁶⁾ His reply 3 May 2009 stated that he had been advised that Barwon Water was complying with its Licence conditions and spun the yarn that all was in order if the drought conditions were taken into account. In Barwon Water's 2008 Flora Study no evidence of ASS was found. The farce, rhetoric and obfuscation of these revelations from Peter Harris can be read in detail in Otway Water Book 9.⁽²⁶⁾

It was hoped that the Colac Otway Shire may have provided the catalyst to "force" the issue with the statutory authorities mentioned above. However, meetings convened between the statutory authorities were delayed, poorly attended or postponed. The Shire officers appeared to be as ineffectual as community members at initiating action into Acid Sulfate Soils along Boundary Creek.

- Colac Herald 29 April 2009. There was a glimmer of hope that the Colac Otway Shire Council was prepared to initiate action.

Council studies pumping effect

by David McKenzie

Colac Otway Shire Council might hire a water scientist to study the impacts of groundwater pumping in the shire.

The council is planning a workshop so councillors can discuss ways to address concerns with Barwon Water's pumping of a bore field at Barwon Downs, and plans for more pumping at Kwarren.

Cr Stuart Hart successfully passed a motion at the council's April meeting calling for the workshop to discuss "engaging the service of an appropriate hydrologist to investigate and report to council the effects of groundwater pumping at the Barwon Downs bore-field".

The study would also include

the Newlingbrook aquifer, and would focus on acid sulphate soils and the drying up of rivers and creeks.

Cr Hart said landholders were concerned that groundwater pumping at Barwon Downs had removed water from creeks and wetlands, causing leaching of acid from acid-sulphate soils.

He said people were worried that Barwon Water's planned pumping from groundwater at Kwarren could have the same effect.

Cr Lyn Russell said the council needed to protect the shire's water resources.

"We're in a drought – we need to look after what we have," Cr Russell said.

"We have to be taking an

active interest in what is happening to all the water in the shire," she said.

But Cr Chris Smith said he was concerned the council could end up spending \$100,000 if it hired a consultant to examine the groundwater.

"I'm not supportive of us going into a situation where we're deliberately causing a cost-shift," he said.

Cr Stephen Hart said the council had an advocacy role for the community, and should explore ways it could fight to protect groundwater.

Mayor Brian Crook said he believed the council should focus its attention on governments and ministers responsible for environment and water, rather than on water boards.

- Despite the good intentions of the Shire as expressed in this media article by June 2009 the Shire stalled in its endeavours. At a meeting with the Colac Otway Shire CEO in June, the Colac Otway Shire was presented with a **formal 14 page complaint** regarding the suspected Actual Acid Sulfate Soils problem along Boundary Creek.

Throughout 2009 members of the Gellibrand LAWROC Landcare Group had met with Council staff on several occasions discussing the Acid Sulfate Soil and other water issues. However, arranging the visiting and testing of the Acid Sulfate Soil site by “credible” people with the authority to prompt action had stalled. Data and research collected and collated by local “unqualified” residents of the Shire was being dismissed out of hand by all so called “credible” statutory authorities.

Considering the preliminary evidence, the time lag of 12 months since the first formal complaint and lack of action being instigated, LAWROC concluded that there was little chance that any of the statutory authorities would carry out “credible” testing of the site. LAWROC decided that it would employ a reputable independent company to carry out this task so that there could be no dispute that the report prepared could be anything but credible. At least it would be established one way or another whether Actual Acid Soils were a problem or not. Quotes ranged from \$30 000 to \$14 000. LAWROC decided to proceed. However, there was some dispute regarding the accessibility to the site. Was it on private property of Government land?

At this point the Colac Otway Shire was asked to investigate and determine the best method of gaining the right to carry out sampling of soil in the area. This would amount to collecting no more than a half barrow load of soil samples taken across a wide transect. The area to be tested was originally saturated wetlands now of a moonscape type appearance. At no stage had this area ever been used for any form of agricultural enterprise. The scope and conducting of such an investigation did not appear to have reasonable or credible argument for not being allowed to proceed. The impact of removing such a small amount of soil for testing would be minuscule and any disturbance at sample sites so inconsequential as to be indiscernible compared to the catastrophic destruction caused in the area by the suspected Actual Acid Sulfate Soils.

The owner of the worst affected area and consequently the most desirable area to investigate has on several occasions denied access. To date the Shire is reluctant to use its powers to press the issue of “enforced” access (see letter on following page). The Shire is still in diplomatic discussions with the appropriate statutory authorities. Stalled again but not quite checkmated yet.

The underlined section of the quote on page 18, taken from a personal letter sent from Michael Malouf the Managing Director of Barwon Water, is most interesting to note.

“... agencies to scope out an appropriate investigation of ASS taking into account local, regional and broader scales.”

The unusual combination of these words is quite noticeable and taken in isolation can be regarded as an appropriate phrase. However, 6 months later Rob Small Chief Executive Officer of the Colac Otway Shire uses the very same words in the same context (see page 20, last paragraph).

“...agencies to scope out an appropriate investigation of ASS, taking into account local, regional and broader scales.” The only difference being the punctuation.

The word collusion comes to mind.

Our Ref: Water Management GEN00435 Barwon Region Water Authority
Your Ref: NA
Contact: Stewart Anderson



23 September 2009

Malcolm Gardiner
1805 Colac Beech Forest Road
KAWARREN VIC 3249

Dear Malcolm,

Acid Sulphate Soil Investigation in Barwon Downs

I am writing with respect to a request made to Council about conducting an investigation into Acid Sulphate Soils in the Barwon Downs region. As stated at our meeting on 4 September 2009 Council is concerned about the potential impacts of Acid Sulphate Soils (ASS) and is supportive of the community's efforts to seek clarification with regard to this matter.

At the meeting on 4 September Council committed to investigating whether access could be gained via public land to a specific site in the Barwon Downs region where it is thought that ASS exist. Maps were provided to you by Council that showed a path to the site that was all on Crown Land.

Subsequent to being provided with the maps it is understood that you had a meeting where it was determined that although access to some of the site could be gained via public land that it was not enough to allow sufficient soil samples to be taken. As a result you contacted Council to request that we use our delegated powers under the Local Government Act to enter the private land to take the soil samples.

This is a unique situation because although there is clear evidence of vegetation damage it is not clear how this has been caused. As a result there are a range of legal questions and issues to be considered about whether Council is able to use its delegated powers in this case. Therefore this option would only be pursued as a last resort.

Council will attempt to make contact with the landholder to discuss the matter and seek permission to enter the site to take soil samples. In the interim period it is recommended that you access the site via public land and investigate further whether adequate testing could be carried out without entering private land.

As discussed at the meeting on 4 September, Council is also pursuing discussions about the matter with various government agencies to scope out an appropriate investigation of ASS, taking into account local, regional and broader scales. If you have any enquiries concerning this matter, please contact Council's Manager for Environment and Community Safety, Stewart Anderson on 5232 9400.

Yours faithfully


Rob Small
Chief Executive Officer

Colac Otway Shire
PO Box 283
Colac Victoria 3250
www.colacotwayvic.gov.au
in@colacotwayvic.gov.au

Colac Service Centre
2-6 Rae Street
Colac Victoria 3250
Ph: (03) 5232 9400
Fax: (03) 5232 1046

Apollo Bay Service Centre
69-71 Nelson Street
Apollo Bay Victoria 3233
Ph: (03) 5237 6504
Fax: (03) 5237 6734

- A farmer downstream of the suspected Actual Acid Sulfate Soils area locally called the Big Swamp, allowed access to ascertain whether there was any obvious effect present from acid creep.

- On the 15 September and the 1 October 2009 this farm was visited, observations made, water tested for acid, electric conductivity and animal life. More circumstantial evidence was collected.
 - Significant acid water was coming from upstream with levels below 4 pH,
 - springs were appearing to burn off the pasture, and
 - there was no animal life in the acid waters.
 - Nearby non flowing rainwater swampy areas not connected to either the springs or flowing stream had various macro invertebrates present.

Persistence is Critical

It is very important to highlight at this stage the enormous amount of time and energy required to achieve any satisfaction. However, if this effort is not made the issue will not be resolved in a satisfactory manner, especially if the concerns are seen by the authorities as a threat to decisions already made. The persistence necessary to resolve an issue such as this Actual Acid Sulfate Soil one, should not have to fall on the shoulders of people outside the statutory authorities. However, the sad fact is that in many instances this is the case. Statutory authorities may be present, the administrators and workers within these authorities employed and paid reasonable wages to implement, administer and police the policies and law of the government, but in this case of the Acid Sulfate Soils the managers at the head of these authorities have failed miserably to carry out their responsibilities.

- 30 November 2009. It is interesting how formal complaints can be dismissed so easily. It is as interesting, mystifying and intriguing that there would appear to be very little recourse against statutory bodies that do not perform their duties.
- 30 November 2009 and the Acid Sulfate Soil saga of Boundary Creek is yet to be resolved.



CHAPTER 3

Formal Complaint to Southern Rural Water Re: Licence Number 893889 – the continuing story.

This licence was issued to Barwon Water by Southern Rural Water allowing the extraction of considerable amounts of groundwater from the Barwon Downs borefield. The licence was issued for 15 years and is due for renewal in 2019. As part of the licence conditions Barwon Water has to present a report to Southern Rural Water after each financial year. In 2007 after reading previously submitted copies of these reports it became blatantly obvious that Southern Rural Water was not adequately scrutinising nor policing the conditions as set out in the licence. This Chapter continues the documentation of the difficulties encountered with attempts to reach a satisfactory conclusion to this issue.

Following is a summary of this issue as presented in “Otway Water – the Summaries,” Chapter 25 and “Otway Water – One Giant Environmental Footprint,” Book 8, Chapter 7.

1. The 2004-05, the 2005-06 and the 2006-07 Reports submitted to Southern Rural Water (SRW) demonstrated numerous examples of non compliance with the licence conditions. The reports were not accurate, factual and in many respects nor were they complete.
2. During this period there were also numerous reported examples of conflicting data of significant proportions.
3. Considerable doubt was raised in regard to Barwon Water’s ability to be self regulating and Southern Rural Water’s ability to perform the duties of overseer.
4. 11 October 2007 during a phone conversation with the Chairperson of the Southern Rural Water board indicated she would refer a complaint regarding SRW’s regulating of the Barwon Downs licence conditions to Dr. Martin Kent the Managing Director of Southern Rural Water.
5. By 10 November 2007 there had been no contact from Dr. Kent. An email was sent...

Re;Talk with Jan Greig
Sat, 10 November, 2007 12:29:49 AM
From: Mal Gardiner
<otwaywater@yahoo.com.au>
View Contact
To: martin.kent@srw.vic.gov.au

Dear Martin,

I am following up a phone conversation I had with Jan Greig on the 11-10-2007. Jan assured me that she would approach you and ask you to contact me regarding some serious concerns that I have in relation to the way Southern Rural Water are scrutinising and ensuring the correct compliance to the licence No 893889 Barwon Water has.

I would appreciate some contact in the near future.

Regards,

6. Having heard nothing by 9 December this email was sent again on the 9th and 10th.
7. To be sure that this request arrived a Registered Post was also sent to Dr. Kent (RD27101260.)
8. After three months of "run-around" Dr Martin Kent of Southern Rural Water made contact. A reply to the emails arrived 28 December 2007...

Re talk with Jan Greig

Fri, 28 December, 2007 12:29:36 PM

From: Martin Kent

<MartinK@SRW.com.au>

Add to Contacts

To: otwaywater@yahoo.com.au

Dear Mr Gardiner

Thank you for your email of 10 December 2007 seeking:

1. An answer to your email dated the 10-11-2007.
2. a copy of the conditions, reasons and permit allowing Barwon Water to do a preliminary pump at Kawarren Yaughar 51 bore in July 2007.

The first point relates to your concerns regarding our enforcement of Barwon Water's compliance with their Groundwater Licence No 893889 - which provides for the taking of groundwater from the Barwon Downs borefield.

I understood that one of our staff had discussed this matter with you following your conversation with our Chairperson, Ms Jan Greig. However, if this is not the case, please let me know (email is fine) your preferred phone number and best time of day to catch you and I will call.

With regard to the second point, I am advised that Barwon Water's consultants undertook a pump test between around 2pm on 18 July 2007 and midday on 20 July 2007, and that some 6 ML of groundwater was pumped during the test.

The purposes of the test were to:

- 'develop the bore in preparation for the inspection with down-hole tools, and in readiness for the longer term test;
- assess bore integrity (based on pumping performance and recovery performance);
- assist in determining the rate at which to pump in the longer term test; and
- obtain bore chemistry samples to design any required treatment works in the long term test.'

I am advised that SRW did not issue an approval for the pump test. However, given the small volume of groundwater extracted, our attention is focussed on the proposed, and far more significant, three month pump test.

At this point, we are in discussions with the Department of Sustainability & Environment regarding the approval process for the three month pump test but have yet to finalise the approach to be used. We will advise interested parties once this is settled. Needless to say, SRW is keen to ensure that the process meets the objectives outlined in the Sustainable Water Strategy for Victoria's Central Region (the feasibility study for Geelong's longer term water needs), assesses the impacts in accordance with the Water Act, and ensures that interested parties and the wider community have the opportunity to have their say.

Regards

(Dr) Martin Kent

Managing Director

9. Up to this stage spoken contact with all of the statutory authorities approached in regard to water issues, including officers of Southern Rural Water, resulted in broken promises, non action and denial. It became crystal clear that verbal discussions were all but useless as a reliable reference. Written word was the most verifiable evidence of statements made and appeared to be the only method of account. Southern Rural Water was not prepared to confirm in writing that the licence reports were scrutinised and found to be correct and that the licence conditions had been adequately adhered to.
10. In February 2008 Barwon Water distributed an excellent visually presented 2006-07 Sustainability Report stating that there had been **100% compliance** with the groundwater extraction licence conditions.
11. In April 2008 Southern Rural Water, a Warrnambool branch officer was given a detailed written copy of numerous examples of non compliance up to the end of the 2006-07 reporting period.
12. As rational and normal dialogue attempts to resolve these concerns were thwarted over several months of mail and discussion a verbal complaint was made to the Water Energy Ombudsman. The 6 February phone discussions with the Water and Energy Ombudsman representative pointed out that “they” did not police non compliance issues and had no authority to insist that the correct procedures be followed. Referral was made to the State Ombudsman.
13. Speaking to the State Ombudsman representative on 6 Feb. 2008 resolved that the State Ombudsman office could do nothing until a formal complaint was made.
14. Due to other pressing issues with the Kawarren borefield issue a formal complaint to Southern Rural Water was not sent until 15 May 2008.
This letter (sender to keep CV9201838) contained...
 - Please report back in writing.
 - That there were numerous breaches of the Licence No. 893889 conditions
 - The reports 2002-05, 2005-06 and 2006-07 also contained numerous examples of conflicting and confusing data.
 - If these documents were scrutinised and reviewed how could this situation continue over 3 years of reporting.
 - As a result of non compliance why hadn't the Licence been reviewed, and
 - A trust that this matter be investigated with some urgency.
15. This complaint was acknowledged on 27 May 2008 as being received.
16. 16 September 2008 in a Freedom of Information (FOI) request for the 2007-08 Report the following information was also requested:
Correspondence between SRW and Barwon Water regarding my formal complaint of non compliance to Licence No. 893889 conditions.”
Having heard nothing in regard to the non compliance formal complaint for over three months this seemed a reasonable request.
17. A letter dated the 19 September 2008 acknowledge receipt of the FOI request.
18. Another letter dated the same day,19 September 2008, stated:

“The evidence doesn’t show an unexpected decline in groundwater levels or impact on the surfacewater resources. We believe that the current licence conditions are adequate for the responsible management of resources and there isn’t a need to review the licence or its conditions at this point.”

The answer came across loud and clear that Southern Rural Water was suffering from the “ostrich syndrome” of burying one’s head in the sand.

This letter also apologised for the delay in replying to the formal complaint sent way back in May. The reason for the delay being Southern Rural Water was waiting for the 2007-08 report from Barwon Water to arrive. It may have arrived at Southern Rural Water by the 19 September but by the end of October 2008 the 2007-08 report still hadn’t been sent to me under the FOI request. Considering the licence conditions state that the Barwon Water report must reach SRW by the start of September each year one wonders why the delay before this report is passed on.

It is difficult to follow the logic that the 2007-08 report had to be received before a reply could be sent. The non compliance and other numerous issues were squarely directed at the earlier reporting periods of over a three year duration.

19. The formal complaint had been sent to Southern rural Water (SRW) as directed by the State Ombudsman Victoria. The reply from SRW was regarded as unsatisfactory.
20. 3 October 2008 the State Ombudsman Victoria was sent a written 11 page complaint. A copy of Chapter 23 from “Otway Water – the Summaries, Part 3, pages 205-238 were included. These pages dealt with specific concerns.
21. 14 October Chris Wade of the State Ombudsman Victoria acknowledge this complaint and asked for a phone contact number.
22. On 16 October during a phone conversation Chris asked for a summary of the 30 pages of discrepancies and complaints. Chris was told that this data was a summary. Chris stated that Southern Rural Water had to be given another opportunity to answer the concerns raised. The formal complaint had to include specific itemised questions.
23. Chris confirmed this conversation in writing on 17 October 2008.
24. 23 October 2008 another formal 37 page complaint was sent to Southern Rural Water. This time the complaint was comprehensive and detailed. Over 70 specific questions were asked of Southern Rural Water.
25. In the meantime Councillor Peter Mercer of the Colac Otway Shire queried Michael Malouf, Managing Director of Barwon Water, regarding the discrepancies and non compliance of Licence No. 893889.
26. A copy of Michael’s reply did nothing but confirm earlier concerns that serious breaches of the licence conditions were being treated as inconsequential.
“Previous Annual Reports have included a number of reporting errors. These are essentially administrative issues and have not impacted on the appropriate extraction of groundwater under the licence.”
These are a few examples of the “*administrative issues*” ... and... “*reporting errors,*” referred to by the Managing Director;
 - Reports submitted long after the 60 days for preparation due date.

- Numerous licence condition data reports omitted.
- The 2004-05 report miraculously contained identical data from the 2005-06 report, data that had been collected months after the 2004-05 report had been submitted.
- Miraculously a second copy obtained under FOI of the 2004-05 report contained pages and data not provided in the first copy.
- Also in these reports that should have been identical, there were significant differences in the data provided.
- Observation bore water levels being recorded and reported when the same report states they are dry.
- An observation bore had discrepancies of 30 metres.
- Data indicating the amount of water released into Boundary Creek from the Colac Otway Pipeline varies enormously on numerous occasions when compared with the data provided from SRW. For example on the same day Southern Rural Water states a no flow release when a Barwon Water report contradicts this stating there is a 2 ML/day flow. Both sets of data obtained from Southern Rural Water and Barwon Water under Freedom of Information requests.

(It is very interesting to note that on 22 July 2009 Chris Hughes, Manager Field Operations and Compliance, Southern Rural Water, has this to say... *"We take licence compliance seriously, however I don't intend to go over matters from previous years that amount to administrative errors or oversights."*

27. Despite this lengthy process and the amount of detail provided, Southern Rural Water and Barwon Water maintain that in essence the licence conditions of Licence No. 893889 are being met. No explanation has ever been given explaining how a layperson is able to compile a comprehensively detailed 30 page document indicating a high degree of non compliance and serious discrepancies when "expert" officers of Southern Rural Water who scrutinise, review and police the same documents and licence conditions maintain the stance that everything is as it should be.

Following is the continuing story...

28. 18 November 2008 Chris Hughes acknowledged the detailed 23 October complaint and stated, *"There are several specific matters outlined in your correspondence that require detailed consideration and investigation from Southern Rural Water in order to adequately respond to your concerns. A detailed response will be completed by 31 November 2008."*
29. Chris rang on 27 November 2008. It was made clear that...
- a. Spoken promises were not acceptable due to past experiences.
 - b. The non compliance, irregularities and discrepancies were thoroughly documented.
 - c. Everyone spoken to about this issue had made assurances that scrutiny, review and policing of the licence has been scrupulously carried out.
 - d. Stating that "all" of the complaints can be dismissed by claiming administrative errors and oversights without answering one specific question is not acceptable.
 - e. If Southern Rural Water officers were in fact scrutinising, reviewing and policing as it is claimed they have been, they would have noticed these problems themselves back in 2005. No explanation has been given for this and it needs to be spelt out in writing.
30. In a letter from SRW dated 28 November 2008 (SRW Ref: DWS 659983), Chris wrote this... *"As discussed, there are several specific matters outlined in your correspondence that*

require detailed consideration and investigation from Southern Rural Water. In order to adequately respond to your concerns, a written response will be forwarded by 12 December 2008, as agreed."

31. A three page reply dated 17 December 2008 arrived from Chris Hughes. The following green text is a copy of the contents of the letter from Chris Hughes, Manager Field Operations & Compliance, Southern Rural Water. The contents of Chris's letter have been typed out so that comments can be written in throughout the text. These comments are typed in black and have the benefit of hindsight as at November 2009.

COMPLAINT – BARWON WATER GROUNDWATER LICENCE NO 893889

Thank you for your letter of 23 October 2008 outlining your concerns with Barwon region Water Corporation's (Barwon Water) operation of the Groundwater Licence No 893889 (the licence) and compliance with the specific conditions.

The initial complaint in September 2007 was that concerns were held that Southern Rural Water were not scrutinising, reviewing or policing the Licence No 893889 adequately. All of the specifics presented were examples to justify this claim. If Southern Rural Water was doing its job these administrative errors or oversights or whatever one wishes to call them, should have been recognised years ago, not repeated year after year.

As you are aware, Barwon Water is required to provide Southern Rural Water (SRW) with annual reports detailing the operations of the bore field and addressing the specific reporting requirements detailed in the licence. The annual reports are reviewed by SRW Hydrogeologists to monitor the annual groundwater extraction and groundwater levels, particularly in the four key monitoring bores. The annual reports are also reviewed by field operations to monitor compliance directly related to licence conditions.

If these things are done as stated how is it that so many breaches of the licence go unnoticed. It would also seem impossible that Southern Rural Water can provide diametrically opposed data collected by its field operators(provided under FOI), to that provided by Barwon Water also under FOI, for exactly the same time period?

SRW takes compliance of all licence holders seriously. Our response to non-compliance is informed by the impact the non-compliance caused to the resource, how blatant the action was and whether it has been rectified, among many other things. In the case of Barwon Water, there have been instances of non-compliance in relation to some reporting requirements in the licence. These instances of non-compliance are administrative oversights and are not critical to the overall sustainability of the borefield, or the impacts on the nearby area, to be of such a serious nature to warrant legal action. We have formed the view that this is the correct approach and is the same approach that would be given to any licence holder, notwithstanding that this licence is not like most licences.

At least there is recognition that there has been non-compliance. The instances of non-compliance may not be critical to the overall sustainability of the borefield using Barwon Water's definition of sustainability. Also the extended drought may conveniently allow any impacts on the surrounding area to be blamed on drought as the major factor for degradation. However, the Otway Water books present a detailed and convincing argument that the groundwater extraction at Barwon Downs is the major factor causing the degradation of the area.

Sustainability used in the modelling scenarios works on the principle that if there is more water that can be extracted after pumping then the aquifer is sustainable. Little concern is given to any other factor.

On the 20 000 ML/year extraction rate it is stated that as long as no more than 400 000 ML of groundwater is extracted over 100 years then the environmental impact will be acceptable.⁽¹²⁾ Sinclair Knight Merz⁽⁴¹⁾ when conducting pumping scenarios for the Barwon Downs borefield stated that all scenarios investigated would accompany a decline in Boundary Creek baseflows and especially at times of low flow. SKM postulated that at times Boundary Creek may dry up. However, over a 100 year period any impact would be "*barely discernable.*" However, to date Boundary Creek has been dry over 1000 days into this 100 year period. This is considerably more than barely discernable.

In April 2007 Barwon Water distributed a community information bulletin on the Anglesea Borefield Project that stated, "*To make sure groundwater is extracted sustainably, recharge rates are measured (the rate at which the aquifer replenishes itself). This is used to calculate the Permissible Annual Volume (PAV), the amount of water*

that can be extracted annually from the aquifer.” If the significant drop in the aquifer level is any indication then the borefield at Barwon Downs has gone from sustainable extraction to mining. The Evans report ⁽¹⁵⁾ defines sustainable yield as, *“The groundwater extraction regime, measured over a specific planning timeframe that allows acceptable levels of stress and protects dependent economic, social and environmental values.”* This is now the Australian nationally agreed definition.

In light of the above, SRW has taken a pragmatic approach, which means working with the licence holder to resolve the matter. SRW is continually working with Barwon Water to improve reporting under the licence, and appreciates the feedback provided in your correspondence. The licence conditions are unique to this situation and it takes some time to fully implement the various reporting needs within the licence. SRW will meet at least annually with Barwon Water to discuss their groundwater extraction, the licence and review a draft of the annual report prior to the completion of the final report. This will be in addition to the usual communications and will ensure that the concerns highlighted in your correspondence are given appropriate consideration.

My concerns should be Southern Rural Water’s concerns. If both Southern Rural Water and Barwon Water are serious it should not take five years to improve the reporting under the licence to such a degree that the reports are all but perfect.

The point still appears to be missed by Southern Rural Water that this whole issue is not only dealing with the reporting but also the manner in which Southern Rural Water allows the operation of the Barwon Downs borefield to be conducted.

Southern Rural Water should not have to meet with Barwon Water to lead and direct how to provide a report that satisfies the licence conditions. This is not a difficult task. The only conclusion that can be arrived at is that both Southern Rural Water and Barwon Water have incompetent officers preparing the reports. The complaint directed to Southern Rural Water is that these officers have not been doing the scrutiny, review and policing of the Barwon Downs groundwater extraction licence.

The matters that you have raised in your correspondence are of a specific and detailed nature, with many relating to administrative oversights from the annual reports. SRW doesn’t consider it practical or relevant to respond in significant detail to concerns relating to administrative oversights, as these are matters of past and cannot be changed. I would say however that Barwon Water Corporation has been co-operative in recognising areas of reporting that need improvement and have responded positively to our requests. Whilst reporting is vital, our main focus is ensuring that Barwon Water comply with the conditions relating to how much water they can take and groundwater level triggers.

With the above in mind, I have endeavoured to respond in appropriate detail to concerns that you have outlined which relate to sustainable water management. The matters of particular concern appear to relate to the monitoring bore Yeo 40, the metering of Boundary Creek discharge point, Acid Sulphate Soils and groundwater levels. Several of the matters that you have raised may be better addressed through a face-to-face discussion rather than in writing.

Face-to-face dialogue may be a sound idea but as discussed over the phone (see point 29 above) there seems little point until there is some proof that the last 16 months of dialogue shows a tangible result.

YEO 40

YEO 40 is one of the four critical monitoring bores specified in the licence that has been assigned a trigger level used to protect the groundwater resource. Barwon Water must act in a specified manner set out in the licence when groundwater levels in the bores decline below the respective levels listed in the licence.

True Yeo 40 has a trigger level of 142.6 metres AHD. If Chris is referring to this one it is set to trigger off “alarm bells” in regard to subsidence and is called the Subsidence Trigger Level.⁽⁵⁹⁾ This trigger level has not been passed and maybe that can be construed as protecting the groundwater resource. However, there is another critical trigger level at 158.5 metres AHD for the Yeo 40 observation bore. This is used to protect the environment and the farmers water supplies and is called the Maintenance of Flow in Boundary Creek Trigger Level.⁽⁵⁹⁾ This level has been exceeded for the last few years and is presently around the 150 metre AHD level (see the graph on page

31). It is puzzling why Chris is not aware of the two trigger levels and the significance of the 158.5 metre trigger level being exceeded for such long periods of time.

It was a condition of the licence that YEO 40 be replaced with a new monitoring bore by 31 December 2004 in the vicinity of the original bore. The replacement of YEO 40 was finalised in May 2005. The replacement occurred 6 months after the date required under licence conditions, however the process required the input of expert consulting Hydrogeologists and the availability of a suitably qualified drilling contractor.

This still does not explain how the graph on page 9 of the 2006-07 report shows that the “[Replacement for Yeo 40 bore completed 31/7/06. Monitoring re-commenced.](#)”

The replacement bore for the designated monitoring bore “YEO 40” has been operational since the date of construction. It is located within approximately 300 metres of the original bore at a location off McCall’s Road, Yeodene near Boundary Creek. The confusion surrounding the location of YEO 40 may have arisen as a result of an incorrect reference in the 2004/05 Annual Report, which stated the location as being “in Boundary Road”. This relates to the designated bore Y-40 and the drilling of YEO 40’s replacement is clearly shown in a photo in the 04/05 report.

The confusion between Y40 and Yeo 40 observation bores was obvious from the beginning. Southern Rural Water was made aware of this example to highlight the lack of scrutiny and review given to Barwon Water’s reports by Southern Rural Water. Missing such an obvious “administrative oversight/error” should not be regarded as acceptable and should have made it abundantly clear why other more critical oversights were being missed.

Boundary Creek

Barwon Water is required to provide a flow of 2 ML/d to the headwaters of Boundary Creek from anytime that groundwater extraction commences under the licence until:

- *The groundwater level in bore Yeo 40 recovers above a level of 158.5m AHD following the cessation of pumping; or*
- *At any time between 1 June and 30 November the natural flow at the Yeodene stream gauge exceeds 1 ML/d.*

It gets to a stage when doubts arise that makes one wonder whether one is “knit picking” or not, but this statement about Boundary Creek and the provision of supplementary flows to the headwaters of Boundary Creek is wrong. Pre 1987 the ADH level in Yeo 40 was around the 160 metre level. Pre-pumping Boundary Creek was never known to dry up as far back as 1912. Since pumping Boundary Creek has been dry for extended periods totalling over 1000 days.

The licence states that supplementary flows have to be provided once groundwater extraction lowers the aquifer below 158.5 metres AHD. If the pumping commences and the AHD level stays above the 158.5 metres and Boundary Creek continues to flow, supplementary flows do not have to be provided.

A meter has been installed at the point of discharge into Boundary Creek, however prior to the installation of a meter alternate means of monitoring the stream flows were agreed between SRW and Barwon Water in order to comply with conditions detailed in section 6 of the licence. The alternate means included monitoring of the Forest Road gauging station and measuring the reduction in flow between the supply reservoir and Colac Basin No. 4. SRW is satisfied that these actions were a sufficient interim action to achieve the outcomes intended by the licence conditions.

Under Freedom Of Information all modifications to the licence were asked for prior to this letter. There was no mention of this change.

Barwon Water complies with the discharge conditions the majority of time; however they occasionally experience operational difficulties due to variations in stream flow after rain events and external influences beyond their control. These instances are short lived and rectified as soon as practicable.

The above paragraph makes sense and is easily understood and accepted. However, the specific questions asked in relation to conflicting data, poor field officer scrutiny and other bad management practices do not refer to such instances and have not been answered.

Water Usage & Groundwater Levels

Barwon Water's licence was developed with input from technical experts, community representatives and government departments to ensure the best management of the resources were appropriately considered balanced against the needs of an urban water supply. The stakeholders identified the following issues that would assist in the evaluation of the sustainability of the borefield, all of which were incorporated into conditions of the licence:

- *Limits on daily, annual, 10 year and 100 year maximum volumes.*
- *Groundwater levels.*
- *Groundwater Salinity.*
- *Subsidence.*
- *Flow in Boundary Creek.*
- *Protection of riparian vegetation.*
- *Protection of stock and domestic use.*
- *Protection of flow in Barwon River and tributaries.*

Unfortunately the development of the licence has not achieved these goals.

After reviewing the annual reports it is apparent that Barwon Water has operated within the annual use limits of the licence, with the maximum annual extraction being 12,604 ML in 2007/08. The annual reports also show that groundwater levels in the four critical monitoring bores have remained above the trigger levels listed in the licence.

If it is accepted that the 158.5 metre AHD level in the critical bore Yeo 40, is there to protect farmers' water supply and the environment then the nonsense of the above paragraph is obvious.

Acid Sulphate Soils.

In accordance with condition 7 of the licence, SRW has required Barwon Water to undertake a detailed Flora survey. Barwon Water has sought tenders from suitably qualified expert consultants and the successful tender has not yet been appointed. Barwon Water must consult with the Department of Sustainability and Environment regarding suitable consultants. The investigation into Acid Sulphate Soils will be incorporated into the consultant's analysis and the completed report is expected by mid 2009.

The Flora Study has been completed but the Acid Sulfate Soils **WAS NOT incorporated** into the consultant's analysis. Book 9 of Otway Water⁽²⁶⁾ deals solely with the decades of inept flora studies.

In closing, I can confirm that SRW is committed to working closely with all stakeholders to continually improve the management of the resource, which will also include improved annual reporting. It is worth noting that SRW has reviewed the 2007/08 annual report in detail and as a result sought clarification on some areas of the report. Barwon Water subsequently made the necessary adjustments and re-submitted the annual report to the satisfaction of SRW.

The 2007-08 report is interesting and much better than earlier ones. However, it is most puzzling why the residual drawdown map is half missing (see page 39).

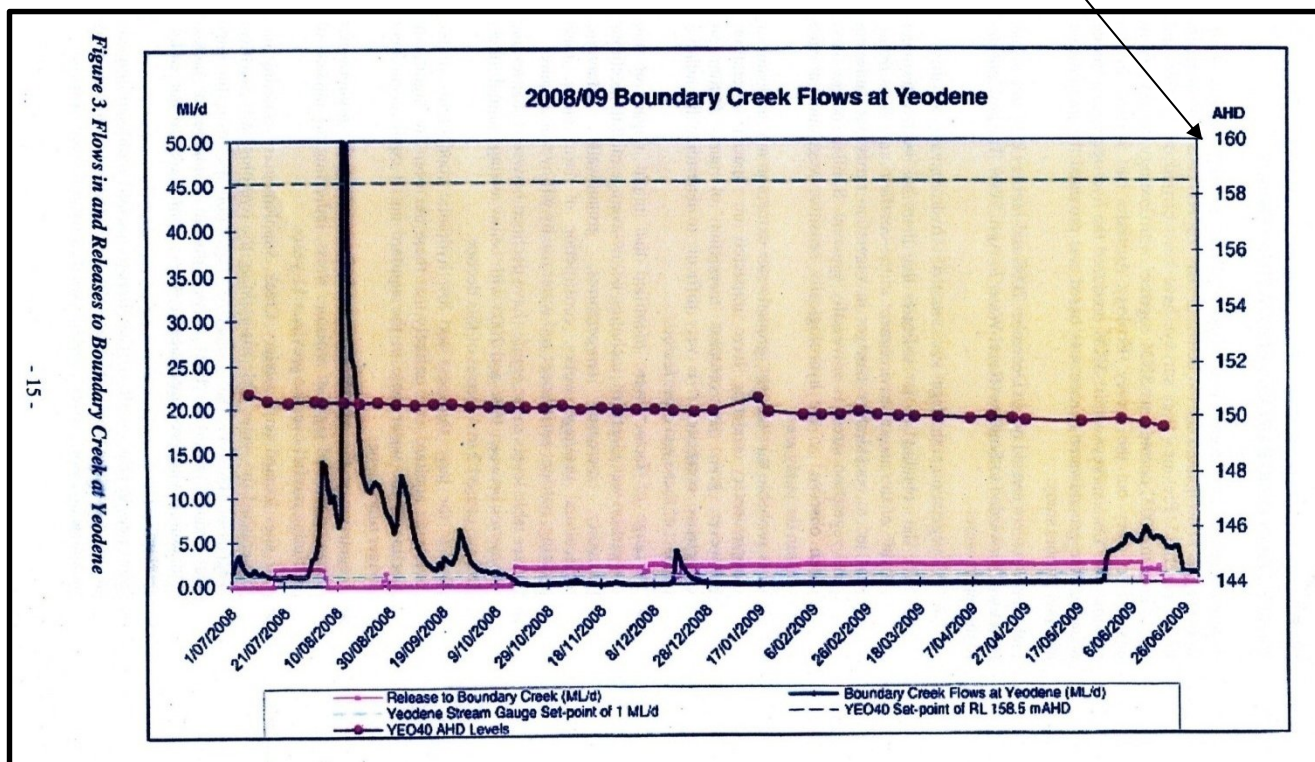
As with all licences, Barwon Water's licence will be reviewed on expiry (2019) as part of the renewal process, which requires SRW to again consider matters outlined in S.53 & 40 of the Water Act 1989. Barwon Water does not self regulate their water extraction in relation to their groundwater licence. SRW is the delegated authority with the responsibility of regulating the take and use of groundwater in Southern Victoria in accordance with the Water Act 1989 and licence conditions.

Your correspondence is of significant detail and content; therefore in order to clarify all your points, I would be pleased to have a face-to-face discussion. If you have any questions or would like to schedule a meeting, please contact me on 0418582763.

If you are not satisfied with SRW's level of service, the Energy & Water Ombudsman (Victoria) can be contacted on 1800500509. From earlier discussions this ombudsman cannot help (see point 12, page 24).

Yours sincerely,
Chris Hughes,
Manager Field Operations & Compliance.

Yeo 40 water level height pre-pumping.



This graph is taken from the 2008-09 report from Barwon Water to Southern Rural water and shows the water level in Yeo 40 at approximately the 150 metres mark. The trigger level of 158.5 metres is also clearly marked.

32. On 05 January 2009 the following letter was sent to Chris Hughes of Southern Rural Water...

Sender No. CV9106089

Re: Formal Complaint - Non compliance and discrepancies with the operation and management of Barwon Water Groundwater Extraction Licence No 893889.

Thank you for your letter of 17 December 2008 in reply to my 23 October 2008 formal complaint. In my opinion your reply is deplorable.

1. You say that "... annual reports are also reviewed by field operations to monitor compliance directly related to licence conditions." You have been asked how the most basic of non compliance has been missed by SRW in three years of reports. You have not answered this. Nor have you given any assurance that this will improve.
2. You say "SWR takes compliance of all licence holders seriously," yet you provide no evidence that this is the case. You brush aside the multitude of non compliance in this situation with the utmost ease and casualness.
3. You also talk about things being rectified and that it is then OK. Part of this formal complaint is that there has been little to no evidence of an improvement in the reports I have specifically referred to.
4. You say "These instances of non compliance are administrative oversights and are not critical to the overall sustainability of the borefield, or the impacts on the nearby area..."
 - What rubbish, Chris. Firstly why have rules if they don't have to be followed?
 - Secondly it is my opinion that any competent person could prepare a licence report that complies with every aspect of the licence conditions with ease, in the first instance.
 - Allow me the access to the data and I will prepare the 2007-08 report again for free. Not only will I comply with all licence conditions I would ensure that the report is accurate, can stand up to scrutiny and is readable.
 - Why does it take so many years to detect and correct administrative oversights?
5. When attempting to summarise what my formal complaint is all about you failed to recognise that the major concerns I have are that the borefield is NOT sustainable and that there are serious impacts on the nearby area. Because of the way the reporting is conducted these concerns go undetected, hidden by inaccurate, incomplete and misleading reporting.
6. You say "...Several of the matters that you have raised may be better addressed through face- to- face discussion rather than in writing." As related to you on the phone on 27 November 2008, I have experienced a number of face-to-face discussions with SRW officers that have resulted in broken promises, non action and dismissive reaction. I have come to the conclusion, as I told you on the 27th, that the only action, promises and commitments that I believe are worthy are those put on paper and then acted upon. Rhetoric and spin are not credible responses in this instance.
7. As I have stated earlier in this letter I believe you have made a mistake trying to summarise my concerns. In fact, I didn't ask for this. I asked for answers to my specific questions. To presume and then summarise why I want accurate and complete compliance, tends to negate the lack of adequate sustainable management of the Barwon Downs borefield groundwater resource. I would like nothing more than to support the assertion that the groundwater extraction is not "mining" but is sustainable. But how can SRW or anyone else do this when there is not complete compliance, data missing, data incomplete and data not always accurate?
8. Chris, you are right when you say "Yeo 40 is one of the four critical monitoring bores specified in the licence..." but to go on and say "...that has been assigned a trigger level used to protect the groundwater resource." fails to recognise that Yeo 40 has two critical trigger levels that should be used to protect the groundwater resource.
 - In the 2007-08 report one of these trigger levels is barely referred to, so much so that it is not readily apparent that this trigger level has been reached and passed consistently for years. This is another example of the poor reporting of the data.
 - In fact you state this "The annual reports also show that groundwater levels in the four critical monitoring bores have remained above the trigger levels listed in the licence." This is absolute nonsense. As indicated the critical trigger level of 158.5 AHD in Yeo 40 has been breached consistently for years.

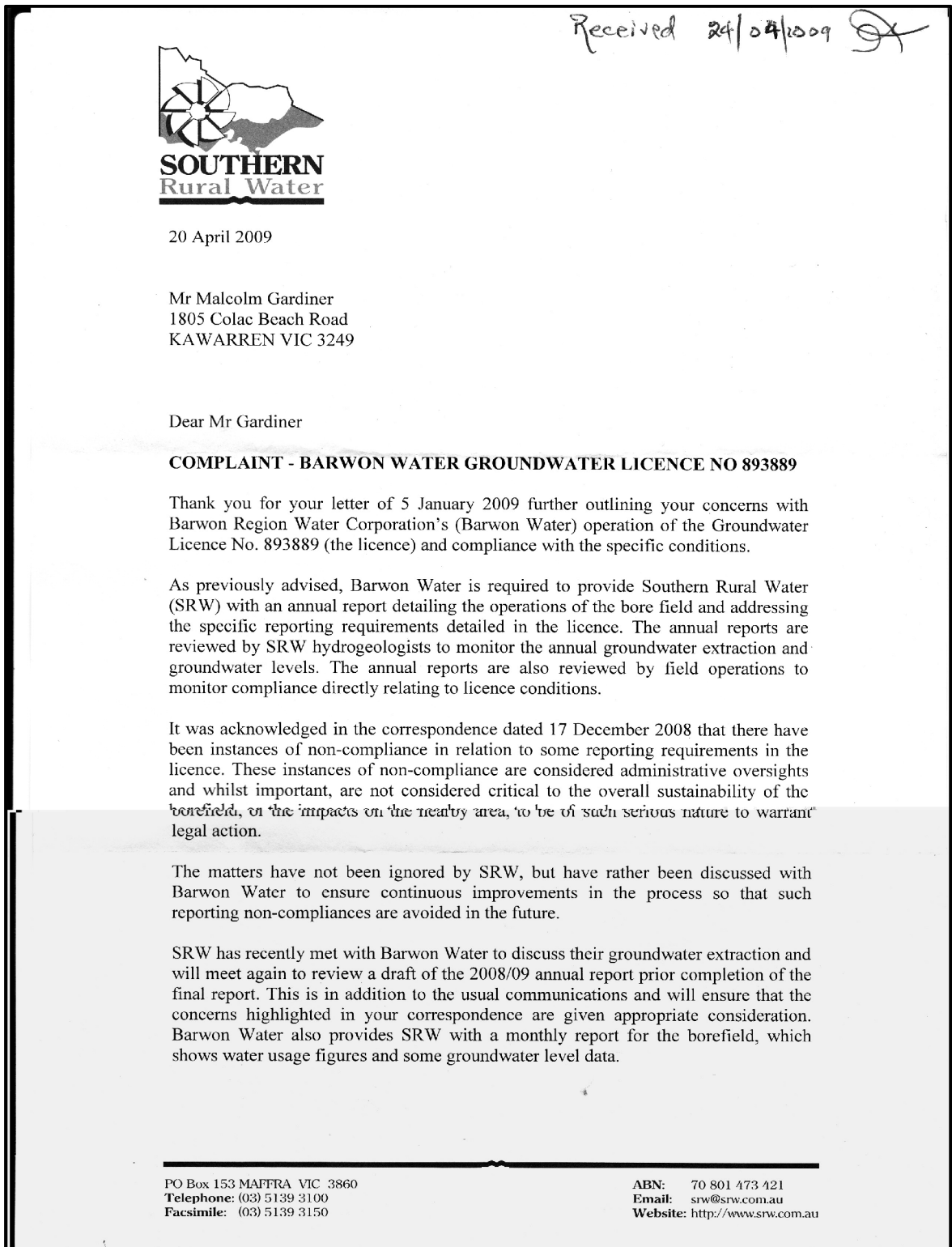
9. *This critical trigger level of 158.5 AHD is mentioned in the Licence conditions and came about due to the following documentation...*
 - ***“Barnett, B. Of Sinclair Knight Merz, 23 May 2003 : Recommendations for Groundwater Licence Conditions. Letter and Discussion documents to Paul Northey of Barwon Water.”***
10. *You did answer some of my specific questions in regard to Yeo 40, thank you for this. You say that the new Yeo 40 observation bore was completed and in operation within 300 metres of the old Yeo 40 by May 2005. However, you did not explain why the records for this bore don't start until over a year later in July 2006. This is also reported in the 2007-08 report. As with so many of my specific questions you don't explain why such poor data presentation has been consistently missed by SRW.*
11. *Chris, you appear to blindly accept that all is well, the licence is being operated according to the licence conditions and even in the event of new and alarming evidence refuse to call for a complete review.*
12. *Chris, I wonder who at SRW is prepared to put their name to the reviewing of the 2007-08 report. You say when referring to this 2007-08 report it was reviewed “... and re-submitted the annual report to the satisfaction of SRW.”*
 - *Under the Second Schedule 1.3.c of this licence, a map of residual drawdown for the year must be provided. The full extent of the residual drawdown has never been provided in any of the last four annual reports.*
 - *Barwon Water has also written to me saying that under the licence conditions the full extent of the drawdown does not have to be provided. Is that so?*
 - *Further it is most baffling why other huge sections of the residual drawdown that has been provided in earlier reports is missing from the 2007-08 report. Why is this so? I am amazed that anyone reviewing the 2007-08 report did not pick this up and ask for it to be rectified.*
13. *Because of groundwater extraction and considering the implications to groundwater pollution from the Acid Sulfate Soil concerns, I find it astounding that you have indicated leaving any investigation into the ASS until the end of 2009.*
14. *After 12 months of complaint I doubt that it will make any difference to your stance of not carrying out a comprehensive review of the Licence No 893889 but the majority of the control sites in the licence for the 2009 flora survey, are in fact not that at all. From the limited data provided it is apparent that the area of residual drawdown has extended into these supposedly unaffected control areas. As a control should be outside the area of influence one is attempting to gauge these designated sites should not qualify as control sites. Therefore the flora survey results will be based on flawed data.*
15. *However, I would like it noted in your files that you have been notified of the possibility that the majority, if not all, of the control sites mentioned in Licence 893889 have been compromised by the influence of the drawdown due to groundwater extraction at the Barwon Downs borefield.*

Finally I would like to point out to you Chris, that of the 70 specific questions I asked of you in relation to non-compliance, discrepancies and other matters in regard to Licence No 893889, you failed to provide specific answers to 64 of these. The majority of these questions were directed at the lack of scrutiny, review and policing of the Licence No 893889 by Southern Rural Water. I would appreciate specific answers to these serious concerns and complaints.

33. An email was sent to Chris Hughes 17 March 2009 asking for a reply to the 5 January Letter.

34. 24 March 2009 Chris replied and stated, "*There are several matters outlined in your correspondence that require further consideration from Southern Rural Water in order to adequately respond to your concerns. A detailed response will be completed by 10 April 2009.*" (SRW Ref: DWS 682827)
The 10 April came and went.

35. 24 April 2009 this letter arrived...



The 2007/08 report was reviewed and after some points were clarified by Barwon Water, SRW was satisfied with the content. The report showed that all groundwater level monitoring results were within the licence trigger levels and that the groundwater extraction was within the maximum annual use limits. The 2007/08 report did include a map showing the relative residual drawdown for the year.

It was not my intention to dismiss the matters raised in your previous correspondence, however as previously stated there were a number of matters of specific and detailed nature, therefore it would be best to meet face-to-face to discuss your concerns in an effort to clarify the points of uncertainty.

I would be pleased to schedule a meeting at a convenient time and location, which would also include a hydrogeologist from SRW.

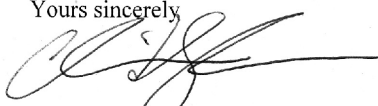
Again, I will say that SRW doesn't consider it practical to respond in detail to the concerns relating to administrative oversights from past reports, as these are matters that cannot be changed. Continuous improvements in communications and the reporting process will ensure that Barwon Water's groundwater extraction under the licence will receive the necessary scrutiny from SRW.

Barwon Water's licence will be reviewed on expiry as a part of the renewal process, which requires SRW to again consider matters outlined in Section 40 & 53 of the Water Act 1989. The licence was developed with input from technical experts, community representatives and government departments to ensure the best management of the resources were appropriately considered, balanced against the needs of urban water supply. Accordingly, SRW believes that the current licence conditions are adequate for the responsible management of the resource and there isn't a need to review the licence or licence conditions at this point in time.

The concerns that you have highlighted with Acid Sulphate Soil in your correspondence and a further formal complaint (4 March 2009) will be addressed separately in the near future.

If you have any questions or would like to schedule a meeting please contact me on 0418 582 763 or via email to chrish@srw.com.au.

Yours sincerely,



CHRIS HUGHES
MANAGER FIELD OPERATIONS & COMPLIANCE

Under the circumstances it would appear that waiting to review Barwon Water's licence in 2019 is an extraordinary long period before this takes place.

The ensuring of "...*the best management of resources were appropriately considered...*" may have been reached in 2004 however; there is considerable evidence to suggest that the best management recommended in 2004 is not being followed and is also outdated.

There was considerable discussion in the lead up to issuing the 2004 licence in regard to the duration of the licence. Community members argued unsuccessfully for a period of only 5 years before the review. This would have been due this year.

The fears by the community have been shown to be well grounded. Putting off a review for another 10 years is unbelievable.

It is now the end of November 2009 and the formal complaint (4 March 2009) regarding the Acid Sulfate Soil has not been '*...addressed separately in the near future.*' Apparently meetings have been planned, discussions commenced and a likely study suggested but other than this one can only guess.

36. On 28 April 2009 another letter was sent off to Chris Hughes...

Sender No. MV0170766

Re: Formal Complaint - Non compliance and discrepancies with the operation and management of Barwon Water Groundwater Extraction Licence No 893889.

Thank you for your letters dated 24 March 2009 and 20 April 2009 in reply to my 23 October 2008 formal complaint and my reiteration of this in a letter 5 January.

When you sent the 24 March letter I felt that when you said... "There are several matters outlined in your correspondence that required further consideration from Southern Rural Water in order to adequately respond to your concerns. A detailed response will be compiled by 10 April 2009," and it also took an extra 14 days after the 10th for your response to arrive, I felt that a detailed response was on the way. You still haven't answered my specific questions.

I also strongly disagree with you when you say many of them are simply "administrative oversights" and do not impact on the overall sustainability of the borefield operation. How can you make such a judgement saying the operation is adequate when the data to be scrutinised is incomplete, and inaccurate?

I haven't asked for you to take legal action, all I have done is asked you to answer my questions. I strongly disagree with you when you say that impacts to nearby areas are not critical.

You then write about the 2007/08 report and I am absolutely astounded with your comments, so astounded that I wonder whether whoever is advising you has actually scrutinised and reviewed this 2007/08 report. As a consequence I have a few extra questions that I would like to be added to the formal complaint that is already before you.

- 1. You say the 2007/08 report was reviewed. You also stated... "The report showed that all groundwater level monitoring results were within the licence trigger levels..." This is not*

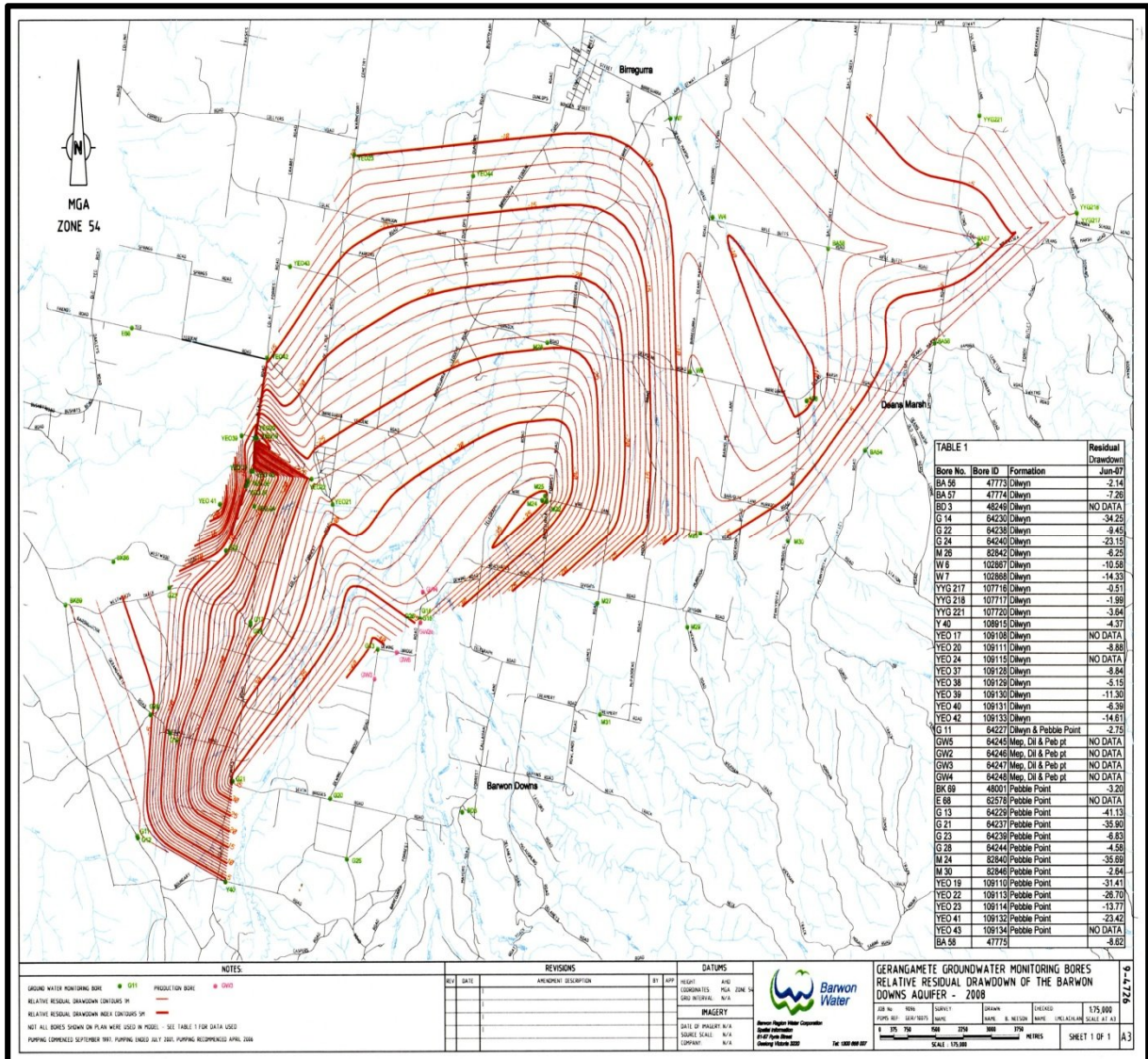
the case. On page 12 of this report the Yeo 40 key monitoring bore graph failed to include the critical trigger level for water releases from the Colac Otway Pipeline into Boundary Creek. Why wasn't this included and why didn't the review note this and have it rectified? This trigger level has been breached on numerous occasions adding up to years in duration. On what grounds did you make the above statement? The yeo 40, 158.5 AHD critical trigger level has NOT stayed above the licence trigger level set back in 2004. Has the critical trigger level been changed? Was the report not complete? Who reviewed this 2007/08 report?

2. You state "**The 2007/08 report did include a map showing the relative residual drawdown for the year.**" Chris, have you seen this map? I have included a copy sent to me under FOI of this relative residual drawdown. For comparison I have included a copy of the 2006/07 map also obtained under FOI. In my opinion both are incomplete. I have also included a copy of the letter denying me access to data of the residual drawdown out to the point of ZERO drawdown. When you say the 2007/08 report includes a map of the residual drawdown this is only partially true. Where is the rest of the map? Why have huge sections of it been omitted?
3. You also write of the 2002-04 review process of this licence. I would just like to flag with you that I have considerable data that clearly shows that this process was flawed. With hindsight the flaws have become glaringly apparent. Why haven't your officers noted these?

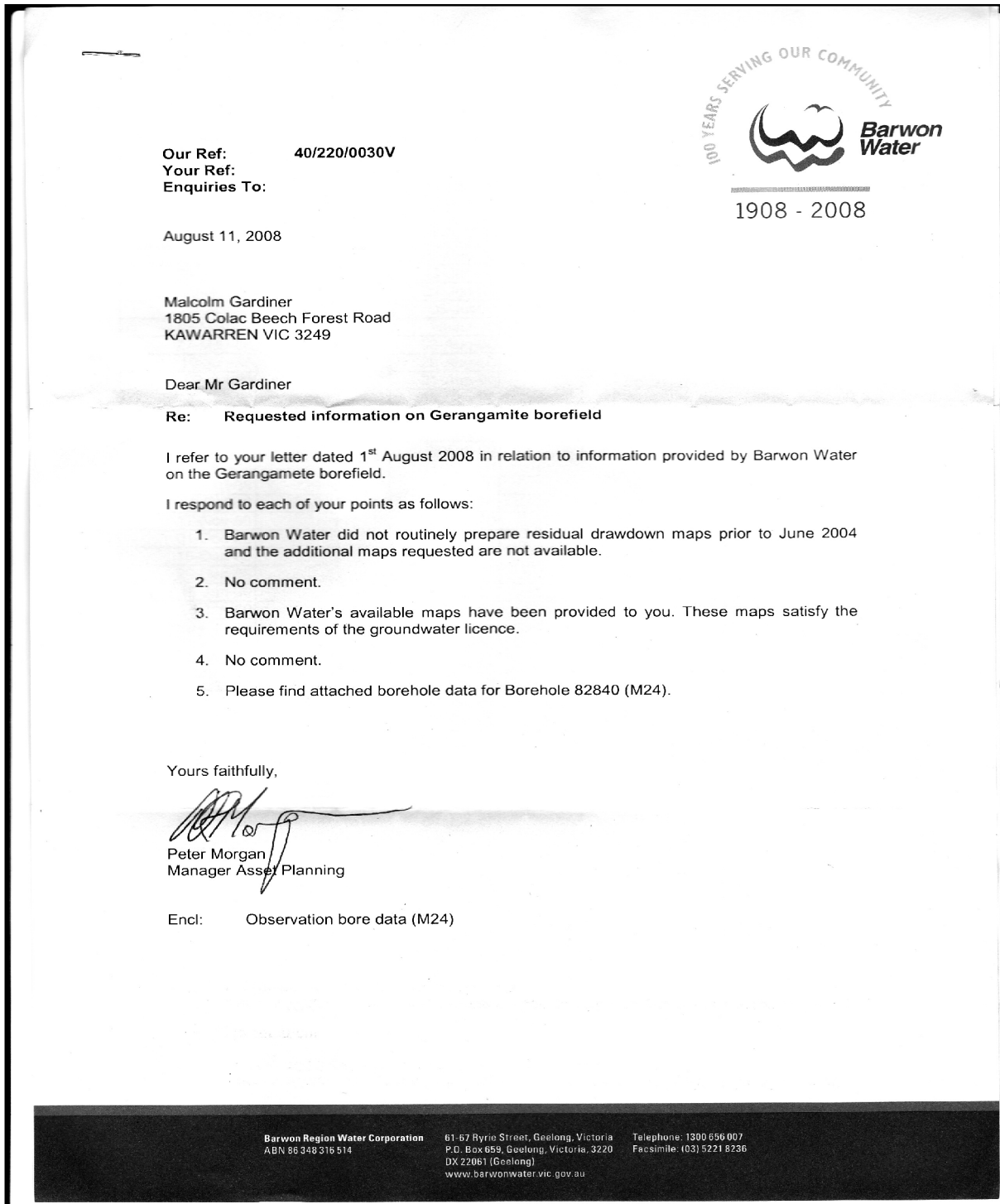
At this stage I see no point in meeting face-to-face with your hydrologist until you reply to the "...**number of matters of specific and detailed nature,**" (20 April letter) that you refer to, specific questions I have asked you to supply answers to. Below I have included an extract from my last correspondence to you.

(You say "...Several of the matters that you have raised may be better addressed through face- to- face discussion rather than in writing." As related to you on the phone on 27 November 2008, I have experienced a number of face-to-face discussions with SRW officers that have resulted in broken promises, non action and dismissive reaction. I have come to the conclusion, as I told you on the 27th, that the only action, promises and commitments that I believe are worthy are those put on paper and then acted upon. Rhetoric and spin are not credible responses in this instance.)

Hoping that you can clear these matters up for me.



The above maps are the ones referred to in point 3 in the letter below. Barwon Water was asked for maps showing the drawdown out to ZERO but would not provide this data.



37. The following day, 29 April 2009 an extra six pages (Sender No. BV6895253) were sent to Chris Hughes. These pages included drawdown maps going back to 1989 that both Peter Morgan, Point 1 above, and Michael Malouf don't have, don't wish to release or can't find. Michael Malouf states in a letter 22 August 2008 Barwon Water Ref: 40/220/0030V that "*Barwon*

Water has provided to you the information requested in your letter of 15th May 2008 where it exists.”

38. A gentle reminder email was sent on 15 June 2009 that nothing had been heard from Chris for some time.
39. In a letter dated 16 June 2009 Chris acknowledges receipt of the 28 and 29 April letters and states, *“A response will be completed and forwarded to you by 30 June 2009.”*
40. On 30 June 2009 Chris wrote (SRW Ref: DWS 717192) a letter that stated, *“Unfortunately a response has not been finalised, however you can expect a response by 10 July 2009.”*
41. On 27 July 2009 a ten page reply from Southern rural Water arrived in response to the specific questions. This letter was dated 22 July 2009. The prospect of having the numerous specific questions answered seemed a reality at last.
It is sufficed to say that after all this time these are the outcomes:
 - 81 specific questions were asked.
 - 23 were answered.
 - Of these 23 five of them were dismissed as administrative oversights.
 - 4 of the 23 were admitted as examples of non-compliance.
 - In an attempt to explain away the identical salinity sections in the 2004-05 and the 2005-06 reports, another non compliance was admitted to.
 - This leaves 58 of the specific and detailed questions still un-answered. Perhaps they fall under the administrative oversights or errors.
42. 30 November 2009. Perhaps it is time to have a face-to-face with officers of Southern Rural Water. If this is not done it is almost certain that the State Ombudsman Victoria will comment that not all avenues for settling this dispute have been exhausted and on these grounds will not process any complaint to them until this is done.

As Chris states in his last letter, *“...the purpose of presenting data is to show compliance and allow analysis.”*

How can SRW or anyone else carry out an analysis when there is not complete compliance, data missing, data incomplete and data not always accurate?

Barwon Water Sustainability Report 2006-07, February 2008.

“Barwon Water will continue to contribute to water catchment protection and restoration programs that benefit the environment and the local communities that live in the area.”

It seems doubtful that this will ever happen in the Barwon Downs valley until Southern Rural Water does its job as licence regulator.

PART TWO

Kawarren Borefield



The Kawarren borefield site.

CHAPTER 4

The Sinclair Knight Merz 28 August 2007 report, “Newlingrook and Gellibrand Groundwater Investigation – Kawarren Pumping Bore Assessment Report.” (Draft 28 August 2007)

When reports with erroneous information, statements and or assumptions go unchallenged, over time, they most often become accepted as the truth or norm. This must not be allowed to happen in reports prepared on the Kawarren borefield investigation. Chapters 4 and 5 deal with two such reports.

This Chapter summarises the failings of a report of Barwon Water’s 48 hour test pump carried out at the Kawarren borefield in June 2007 by Sinclair Knight Merz (SKM) (Chapter 19 of Otway Water – the Summaries, Part 2⁽¹⁹⁾ gives a full account). It also highlights the complete lack of consultation with one of the major stakeholders in the Kawarren borefield project –the Kawarren/Gellibrand community.

Barwon Water, Southern Rural Water and the Department of Sustainability and Environment maintained that a test pump was permissible under the Central Water Strategy.⁽²⁵⁾ This strategy allowed Barwon Water to investigate the feasibility of groundwater extraction for Geelong urban use from the Newlingrook Groundwater Management Area. Firstly, Kawarren is not in the Newlingrook area. Secondly, Kawarren is in the Gellibrand Groundwater Management Area and thirdly the borefield itself is at least 12 kilometres from the nearest part of the Newlingrook parish.

The Central Water Strategy also stated the only investigations allowed in the Gellibrand Groundwater Management Area were to investigate the connectedness between groundwater and surface water. Barwon Water let out Service Contract N^o 10643⁽¹⁾ to Sinclair Knight Merz (SKM) in May 2007, and stipulated that SKM carry out investigations at Kawarren including the following:

- The feasibility of extracting 16,000 million litres per year for urban use
- Land acquisition
- Additional pumping sites
- Power supply access and routes
- Delivery pipe routes to the Barwon River system
- Treatment plant and siting.

None of these things could be construed as investigating the connectedness between surface and ground waters. Investigations at Kawarren were designed to extract as much groundwater for urban use as possible. Luckily in June 2007 the local community was made aware of the planned investigations and began to ask for consultation processes to be put into place. However, information was difficult to obtain and the May Service Contract was not made available for some months. Because of scant public consultation little was know of the planned investigations.

In spite of lengthy and protracted discussion and correspondence arguing the point that the Central Water Strategy did not recommend such infrastructure investigations, Barwon Water continued with its efforts.

15 June 2007 Barwon Water wrote to one landholder⁽¹⁸⁾ stating, “*Community consultation is planned to commence in July following identification of affected parties.*” On 10 July I was made aware of this letter and wrote to Barwon Water informing them that in my opinion my family was an “*affected*

party” and asked a series of questions. The reply⁽¹⁸⁾ 11 July stated, “*The concerns you raise have been noted and these matters will be addressed appropriately in correspondence to all affected parties. If you have any further questions please do not hesitate to call ...*”

A 48 hour bore assessment extraction test pump was commenced 17 July 2007. The planned July meeting never took place and the “concerns raised” in the 10 July 2007 letter have never been “addressed.”

From the beginning of the Kawarren borefield investigations enormous difficulty was continually encountered gaining access to any information from the Environment Protection Authority, Southern Rural Water, the Department of Environment and Sustainability and especially Barwon Water.

When the report of this 48 hour test pump was finally released to the public in November an 18 page, lucid, clear and comprehensive analysis of this report was sent to the Environment Protection Authority (EPA) pointing out a multitude of problems with this SKM report. A detailed coverage of this is found in “Otway Water – the Summaries.”⁽¹⁹⁾

The main areas of concern were:

- 1) SKM’s research was lacking. It was stated that the Kawarren bore was last used in 1984 and that this was the last time water levels and chemistry of the water had been monitored. This was incorrect. There had been two similar short term test pumps in 1991 and 1993 aimed at collecting physical and chemical properties of the groundwater.
- 2) The data collected for the 28 August Report was collected during the middle of winter and its relevance and applicability to summer conditions were doubtful.
- 3) The testing for hydrogen sulphide was abysmal...
 - a) The ‘sniff test’ was applied to ascertain levels,
 - b) educated guessing was conducted at possible levels,
 - c) confusion and misrepresentation of measurement units was presented,
 - d) the ANZECC protection of species guidelines was misrepresented,
 - e) background levels in Loves Creek were not tested,
 - f) there was a considerable discrepancy with result conducted by the State Water Laboratory results of 1991.
- 4) groundwater temperature readings averaging 18.5⁰C in 1991 and 1993 were markedly different to the 16.7⁰C that SKM came up with in 2007. A multitude of water temperature concerns in regard to the requirements of the biology of the streams had not been dealt with.
- 5) the dissolved oxygen levels of the extracted groundwater were dangerously low.
- 6) acidity levels were a major concern,
- 7) no consideration had been given to the high iron content in the water oxidising out and leaving a heavy flocculation over the bed of Loves Creek,
- 8) electric conductivity was tested but there was no testing for sodium, inorganic anion and cation concentrates or other heavy metals,
- 9) no consideration had been given to the interaction between groundwater and surface water life forms.
- 10) no explanation of how any of the problems SKM had discovered were to be resolved before dumping this water back into the streams.
- 11) no explanation was given regarding the measurement procedures to be used in the 90 day test pump. Would the “bucket” and “visual observation” methods continue to be used to determine the flows from the bore and along the creek? Would the human nose be the measuring instrument for hydrogen sulphide testing?
- 12) data used from the Mt. Gellibrand weather station of approximately 30 kilometres distance, would be better replaced with the Gellibrand data that is 6 kilometres distance. Local farmer rainfall data on site would seem even more appropriate,

- 13) the redox anomaly was not resolved,
- 14) the argument that detrimental effect on the streams is “...*very unlikely*...” is not a convincing or defensible argument. Any extracted water must not be discharged until the water is non toxic. No explanation was given how this would be achieved before discharge to the streams was commenced.
- 15) It was not acceptable that in the event the water treatment facility failed, the contingency Plan had a delay of 24 hours before a shut down of pumping. This would not ensure detrimental environment impact, and
- 16) fourteen queries were raised in regard to drawdown, aquifer parameters such as transmissivity & storativity , potential bore corrosion etc.

Through phone discussions it would appear that when this crit arrived the EPA had already processed the 28 August report accepting the bulk of the findings in the report. However, the comprehensive crit activated a re-evaluation of the EPA’s decision. A modified 28 August 2007 document was presented to the EPA dated 17 December. Neither the EPA nor Barwon Water have allowed access to this document. The EPA stating it is Barwon Water’s and cannot be released by the EPA. Barwon Water denied access even through a Freedom of Information request (Barwon Water’s Ref: 15/260/0007A(3)). After a delay of nearly 12 months on 27 June 2008, Barwon Water submitted another report to the EPA. The EPA appeared to be much happier with this effort but to what degree may never be known. To date the EPA will not release its final report on the conditions required to discharge extracted groundwater into the Loves Creek Catchment on the grounds that the test pump has been abandoned (see Chapter 6).

There still hasn’t been a reply to the extensive crit on the 28 August 2007 report and the method the EPA used to reach its final decisions and findings. As with most aspects of the Kwarren borefield investigation these things are cloaked in secrecy. So much for open and transparent community consultation with those people most affected by the Kwarren test pump proposal. However, Southern Rural Water did admit that the 48 hour test pump extraction and then the dumping of 6 million litres of polluted water into the Loves Creek system was conducted illegally.

NOTE: The 27 June 2008 Report has not as yet been scrutinised in any detail but preliminary reading would suggest there is much to be challenged.

CHAPTER 5

Barwon Water's Sinclair Knight Merz Report 9 September 2008, "Stream Trigger Levels For 90 Day Pumping Test."

(Draft 4)

The next stage in the Kawarren groundwater test pump was the preparation of trigger levels designed to protect the landholders' rights and the integrity of the environment. The "Stream Trigger Levels For 90 Day Pumping Test" was designed to do just this.

However, this Chapter demonstrates that this report is poorly prepared, full of inaccuracies and is based on dubious and doubtful assumptions. Further, Barwon Water does not appear to be overly concerned with this lack of professionalism used when preparing this report. The initial request for clarification and correction of inaccuracies has been ignored.

Access to the 9 September Stream Trigger Levels Report (Referred to in the rest of this Chapter as the "9 September Report").

Obfuscation (to bewilder, confuse, darken, obscure and to stupefy) by Barwon Water has been a major concern and gaining access to this report has been no different. Even though the following letter was penned some time before 9 September it highlights the manner in which the Kawarren/Gellibrand community had been treated up to this period.

Malcolm Gardiner
1805 Colac Beech Forest Road
Kawarren
Vic 3249
08-07-2008

Peter Morgan
Manager Asset Planning
Barwon Water
PO Box 659
Geelong 3220

CV7569364 Express Mail

Peter,

Following our lengthy discussion at your offices in Geelong yesterday I am aggrieved on several points that I would like to draw your attention to.

1. Taking over 50 days to date, to provide information that is to be made available under Licence 893889 is a little annoying considering the information asked for should be at your "finger tips."
2. For you to say it is not a high priority to provide this is also infuriating.
3. To need another few weeks is also disturbing.

However the thing that most upsets me is the spin and rhetoric that both you and Tony Belcher were prepared to feed me especially when you specifically stated that a fresh start is needed and Barwon Water will now be making an attempt to get the process right.

(I was told at this meeting that it was part of Tony's job prescription to liaise with our communities – as of November 2009 Tony has not done any liaising what so ever.)

We spoke about the 48 hour test pump last July 2007. This discussion covered the fact that the crit written by members of this community on the SKM 28 August submission to the EPA accurately

discredited much of the contents of this document. We spoke about the fact that you have denied access to the 17 December resubmission to the EPA on this test.

We also spoke about those people most involved in the Kawarren groundwater investigations process and who the various stakeholders are. It was my impression that you agreed that the residents of Kawarren and Gellibrand were indeed significant stakeholders. We spoke about the one meeting the Regulatory Reference Group has had back in August 2008. (This should have been 2007)

Yet you allowed this discussion to proceed and not once did you...

4. State that there is a Regulatory Reference Group of stakeholders meeting in Colac on Monday the 14 July 2008. (No one to my knowledge from this area has been given an invitation to this)
5. Recently you have sent another report to the EPA titled "Newlingrook and Gellibrand Groundwater Investigation – Pumping Test Water Quality and Ecological Monitoring," and you made no reference to this when you know our community wants access to this type of material.

The rhetoric and spin you fed me yesterday reinforces the contemptible way in which you treat people who fall under your umbrella as outlined in the Statement of Obligations set down by the Government and your customer policy set out on your web site.

As I said to you both yesterday this valley has a extreme range of people with various backgrounds and they do not appreciate being treated in this way.

And as I stated clearly yesterday, Barwon Water has to prove to this community that it is open, transparent and willing to engage people it affects with meaningful dialogue. Yesterday was a perfect time to start but unfortunately this latest episode reinforces the facts, beliefs and perception that Barwon Water is a law unto itself.

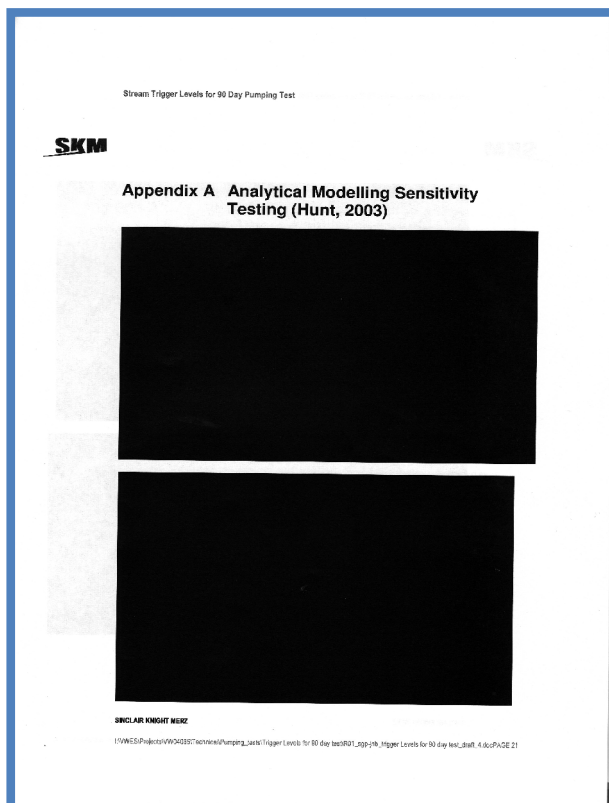
Malcolm Gardiner.

Cc: EPA Western...Chairperson Barwon Water.

On 7 December 2008 whilst browsing the Barwon Water web site, three months after the 9 September Report was prepared, the 9 September Report was found on the site. A copy was

downloaded. Unfortunately the 2 pages of Appendix A were un-readable .

- 22 January 2009 a letter was sent to Michael Malouf, Managing Director of Barwon Water, asking for a readable copy.
- The reply stated that this could only be done via a Freedom of Information (FOI) request.
- An FOI was sent 24 Feb 2009, highlighting the particular pages that couldn't be read.
- The reply (Barwon Water's Ref:15/260/0007A(7)), was exactly the same, the Analytical Modelling Sensitivity Testing was blacked out in four sections. Appendix A was un-readable.
- Months later in 2009, as part of Southern Rural Water's supporting argument for granting Barwon Water a licence to conduct the test pump at Kawarren, it provided this 9 September Report and these pages were identical to the ones already acquired, un-readable and useless.



- No further attempt was made to obtain a readable copy. However, the post script on page 60 adds intrigue to this part of the story.

The scene was being set for another period of confrontation with those authorities not prepared to be open and transparent with major community stakeholders in the development of the Kwarren borefield investigations.

The First reading.

The first reading of the 9 September Report was enough to realise that this report was desperately in need of considerable proofing and verification of facts, clarification of assumptions and rewriting at the most basic level.

In the same month Michael Malouf was being asked for a readable copy of the 9 September Report the following 5 page letter was sent to Carl Bicknell in an attempt to begin some form of dialogue.

PAGE1

24-01-2008 (this should have read 24-01-2009)

Mr. Carl Bicknell

Barwon Water

PO Box 659

Geelong

Vic 3220

Sender Number DLO0099384

Dear Carl,

Re: the SKM report on Trigger Levels for the Newlingrook Groundwater Investigations, 9 September 2008, as posted on the Barwon Downs website.

I have a number of concerns with this Draft 4 Report. The first of these deal with the stream flow data presented for Porcupine and Pompa Bill Creeks.

In the middle of page 13 under point 2, is a clear example of inaccurate and poor work done compiling critical information. The Statutory Declaration found on page two clearly demonstrates that Porcupine Creek does not display ephemeral flow patterns. This needs to be clarified in the final report. It must be reported accurately. Where it incorrectly states that the summer flows of Porcupine Creek are zero, it needs to be rectified as the Porcupine Creek has never naturally stopped flowing.

I take exception to the comment that the “veracity” of my data collecting for Pompa Bill Creek needs to be checked and is only “semi reliable.” Part of my statutory declaration may assist this process (see pages 3-5). I would appreciate this being clarified before the final report is completed.

The spelling of Pompa Bill Creek needs to be corrected in the final report.

This report has another piece of poorly reported information. At no stage would I have ever said Pompa Bill Creek had never ceased to flow in the last 15-20 years. There is a distinct difference between the 15-20 years as stated in this September report by SKM, and over 40 years as sworn in my statutory declaration. I would anticipate that this be rectified as well in the final report.

I would appreciate a reply to this letter.

Yours sincerely,

Malcolm Gardiner

PAGE 2

State of Victoria — Evidence Act 1958

[JP/DOJ.1/2000]

STATUTORY DECLARATION

I, PETER GORDON MACDONALD,
[full name]

of 130 MACDONALD'S ROAD KAWARRAN VIC 3249,
[address]

DAIRY FARMER, do solemnly and sincerely declare that: -
[occupation]

Our family first moved to Kawarren in February 1945. Grandad, Sydney MacDonald and Dad, Gordon MacDonald dairy farmed together at 195 MacDonald's road.

In 1971 due to ill health, Granddad Sydney MacDonald had to leave the farm. Then I Peter MacDonald joined the dairy farming partnership with Gordon MacDonald until 1979 when I purchased 190 MacDonald's road.

Since 1945 the pools in Porcupine creek have never been dry at the bridge on MacDonald's road.

Since the gauging station on Porcupine creek was installed beside the bridge, the only time the flow has stopped at the gauging station was when I have been pumping (diverting) water to the dairy tank.

I acknowledge that this declaration is true and correct, and I make it with the understanding and belief that a person who makes a false declaration is liable to the penalties of perjury.

Declared at Kawarren

in the State of Victoria, this 14th day of

January 20 09

[Signature]

Signature of person making this declaration
[to be signed in front of an authorised witness]

Before me,

[Signature]

Signature of authorised witness

4151C 31609
Colac Police

The authorised witness must print or stamp his or her name, address and title under section 107A of the Evidence Act 1958
(eg. Justice of the Peace, Pharmacist, Police Officer, Court Registrar, Bank Manger, Medical Practitioner, Dentist)

STATUTORY DECLARATION

I, MALCOLM JOHN GARDINER
[full name]
 of 1805 COLAC LAVERS HILL ROAD
[address] KAWARREN VIC 3249
Retired.
[occupation], do solemnly and sincerely declare that:-

In regard to:

Draft 4, 9 September 2008 "Stream Trigger Levels For 90 Day Pumping Test"
 Newlingrook Groundwater Investigation.
 Prepared by Sinclair Knight Merz for Barwon Water.

And in regard to:

Pompa Bill Creek that has many of its source springs originating on the property of "Kersbrooke"
 1805 Colac Lavers Hill Road, Kawarren, Victoria 3249, 22A Lot 2 Parish of Yaagher.

This property was purchased in the early 1960s in partnership with my parents. One of the features of this property was its permanent supply of running water that had never been known to cease flowing. This creek partly originating from springs in this property has since been named Pompa Bill Creek.


Since "Kersbrooke" was purchased I can testify that Pompa Bill Creek has never dried up and has always had a steady flow throughout the year, including summer flows. This record of uninterrupted flow has been the case for over 40 years.

A measuring device was installed on Pompa Bill Creek in 1989.

The two sheets, marked "**Pompa Bill Creek Records**," summarises the height data collected.

I acknowledge that this declaration is true and correct, and I make it with the understanding and belief that a person who makes a false declaration is liable to the penalties of perjury.

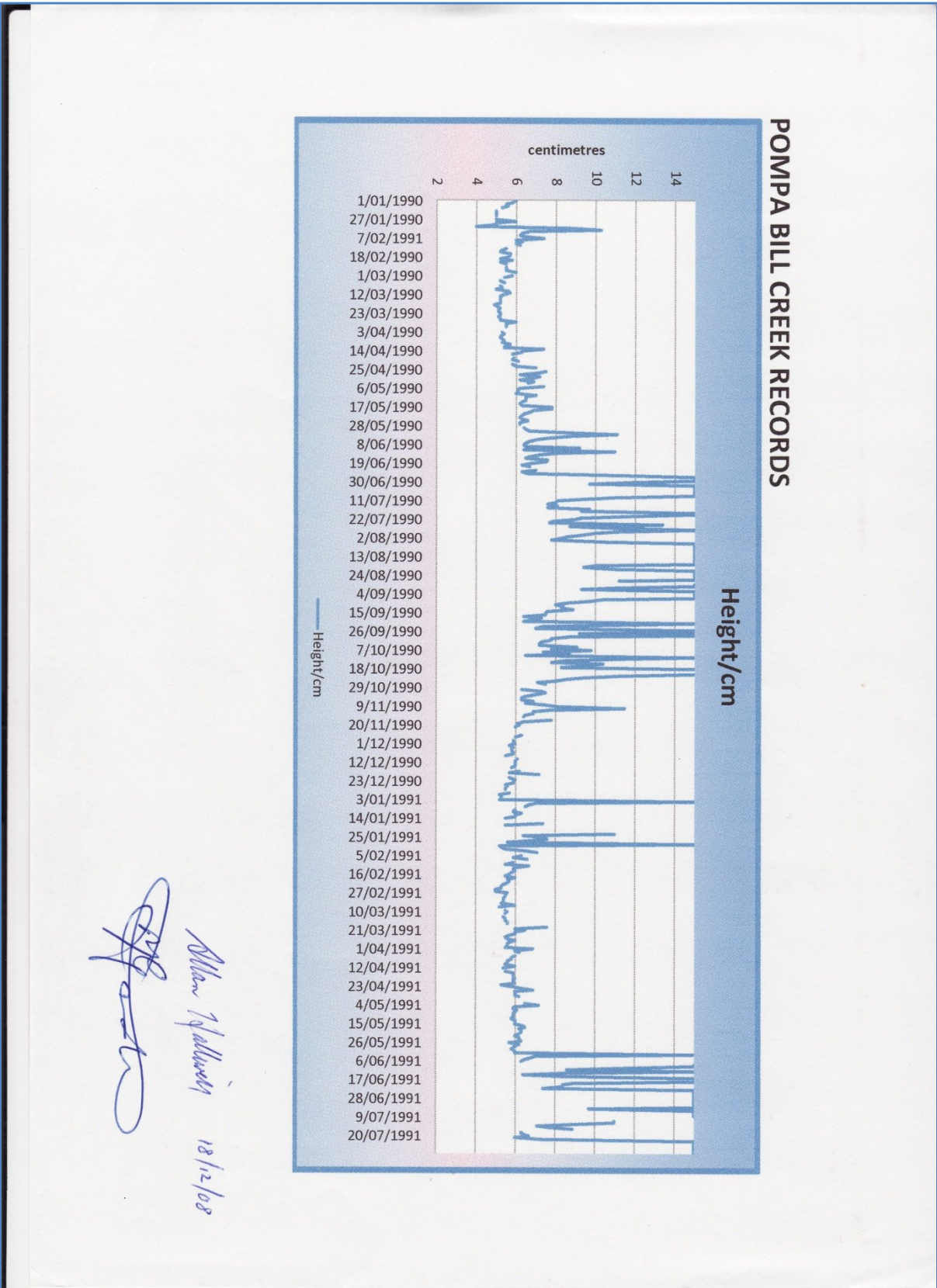
Declared at COLAC
 in the State of Victoria, this 18th day of
DECEMBER 20

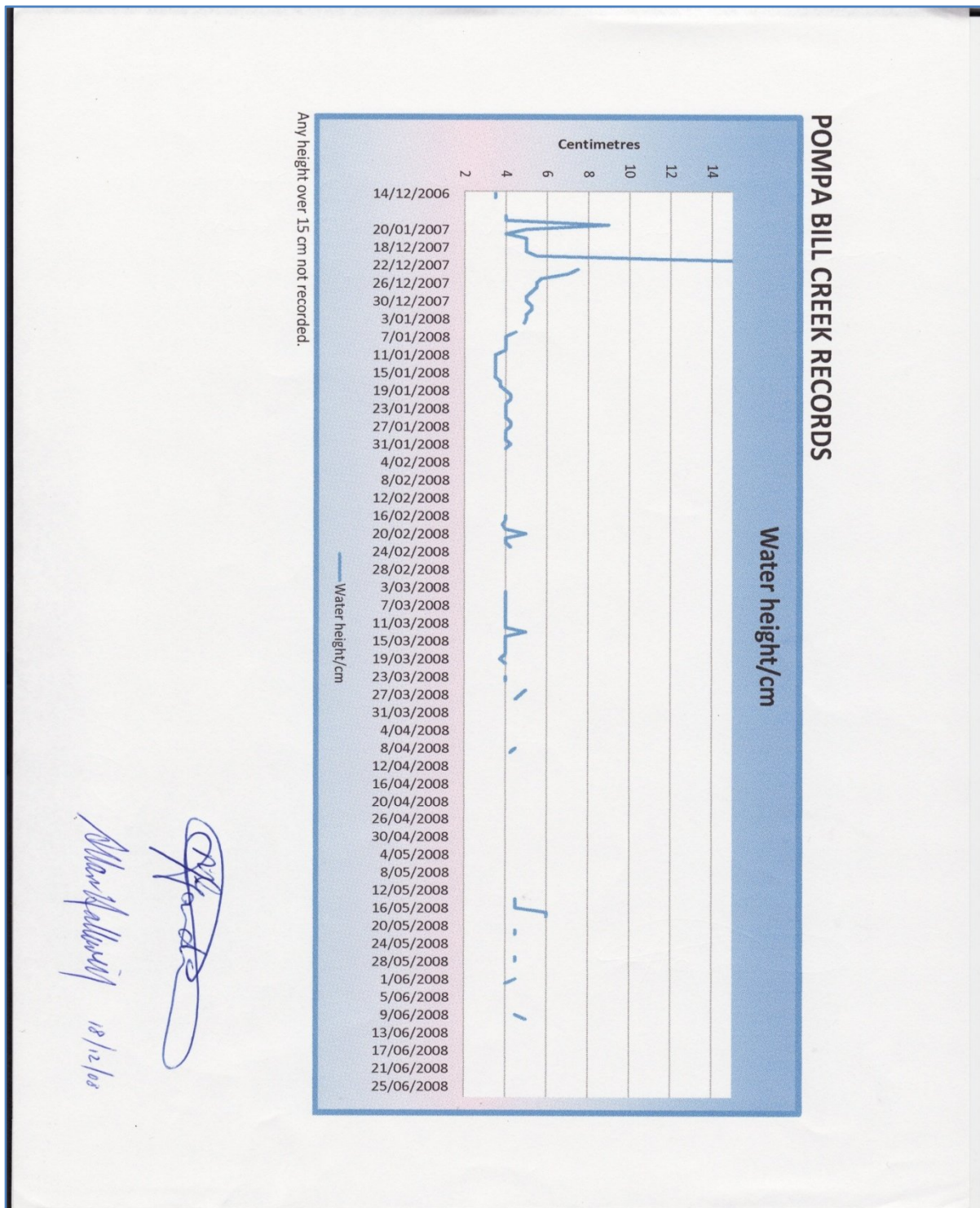

 Signature of person making this declaration
[to be signed in front of an authorised witness]

Before me,

 Signature of authorised witness
PRINCIPAL COLAC P.S.

The authorised witness must print or stamp his or her name, address, and title under section 107A of the Evidence Act 1958 [Vic.]
 (eg. Justice of the Peace, Pharmacist, Police Officer, Court Registrar, Bank Manager, Medical Practitioner, Dentist)





Ten months later, the end of November 2009 and there has been no reply to this letter.

After having written to Barwon Water early in January 2009 showing a specific interest in the 9 September Report and considering that this was Draft 4, four things should have been abundantly clear to the officers of Barwon Water.

1. It had been an oversight not including the Kawarren/Gellibrand community in the first three drafts,
2. every effort should be made to rectify this in future,

3. “mistakes” made in the content of Draft 4 should be responded to and rectified, and
4. correspondence deserved some form of reply. As at November 2009 there has been no reply.

To gain support and confidence of local residents and to tap into the wealth of local knowledge would normally be regarded as a desirable outcome. There appeared to be little effort made to achieve this.

For The Record.

The following crit on the 9 September Report formed part of the presentation that had been prepared for presentation at the VCAT hearing (see Chapter 6).

The introductory blurb that accompanied the PDF file of the 9 September Report found on the Barwon Water web site, contained material requiring comment.

The blurb stated and the comment is:

1. It is agreed that Newlingrook is the area identified in the Central Water Strategy as the Groundwater Management Area to be investigated. NOT Kawarren or Gellibrand. The assertion that the Strategy says this has continually been made by residents of the Kawarren/Gellibrand community since June 2007 and yet the entire document 9 September Report 2008 is based around a test at Kawarren.
2. That Barwon Water has no intention of taking water from the Kawarren area for 20 years. Yet Service Contract Number 19643 includes investigations into pipelines to Geelong, land acquisition, pumping stations, an additional borefield in the area, powerline accessibility and the feasibility of extracting 16 000 million litres a year.
3. The Gellibrand GMA has subsequently been included in the Newlingrook studies. The inadequate justification of this inclusion is clearly demonstrated in Chapter 6.
4. The Kawarren test pump has been included because insufficient information about the Kawarren aquifer is known. The strongest of protests has been made regarding the lack of acknowledgement by Barwon Water of the numerous studies completed in the Kawarren/Gellibrand district.
5. 470 ML over three months to be extracted. The recommended test pump extraction in the 1990’s was to be 2000 ML , 650 ML in the summer of 2007-08 and in July 2008 the Water Minister gave permission for 645 ML to be extracted.
6. The extracted and then treated groundwater to be dumped into the Loves Creek catchment. No indication has ever been disclosed how the water will be treated.
7. An assurance that the test pump will not cause any unacceptable impacts on the surface water flow or the environment. Nothing has been provided that gives this assertion credit.
8. Seven new observation bores will be tested for 24 hours only. What this means has never been disclosed.
9. The current study will assess impacts on...
 - groundwater resource
 - surface water
 - groundwater dependent ecosystems
 - other aquifers
 - the environment
10. Barwon Water has developed...
 - A water level
 - Water quality
 - Ecological monitoring program
 - A stream trigger level monitoring system to ensure any potential impacts are detected early

- A program that will scale back or stop the test completely if these trigger levels are reached.

This blurb reads extremely well and should instil confidence that the test pump is being run and managed in the best possible way. However, this is not the case. Perhaps one of the reasons this trigger level report is so poorly done is that Barwon Water maintain a secretive and closed to scrutiny attitude, while failing to involve the Kawarren/Gellibrand community in its endeavours. The following crit concentrates on the 9 September Report and is quite scathing in its content.

Page One of the 9 September Report

1. This report states, *“The following report outlines Barwon Water’s response to specific issues raised in the public submissions in relation to the impact of the pumping test on flow in the nearby streams.”* This report does not do this nor does it answer the multitude of specific issues raised in public submissions. The 9 September Report confirms previously expressed fears and adds many more to the long list of concerns.
2. Ground water baseflow **“is”** significant⁽³⁸⁾ and is not an **“if”** as described on this introductory page.
3. No evidence of the spring monitoring regime has been made available for scrutiny.
4. Having streamflow act as a surrogate trigger for springs has to be shown as sound practice and backed up with scientific data/reports – and it hasn’t been. *“Due to the lack of baseline data and the fact that streamflow will act as surrogate for the spring flow impacts, spring flow triggers are not proposed.”* Considering that the stream flow gauging stations on the Yahoo, Ten Mile and Porcupine Creeks had been decommissioned back in the mid 1990s this is a most curious statement. In fact the locally collected spring flow data for the Pompa Bill Creek springs is more comprehensive and should not be dismissed out of hand in such a manner.
5. The Ten Mile and Porcupine stream flow gauging stations were recommissioned during 2008 but the Yahoo stream flow gauging station has not been reinstated. Consequently there is no accurate way to gauge the flow from this stream. Visual and bucket dipping is not an accurate means of determining flow with a stream this size.

Page Two

1. To say Loves Creek is the least likely to be impacted is ludicrous. Ten Mile, Yahoo and the Porcupine Creeks are tributaries and combine to form Loves Creek. Loves Creek is an accepting stream below the extraction groundwater point and above the Loves Creek stream flow gauging station. Also Loves Creek will have an extra 6 ML/day being dumped into it and there is the possibility of a multitude of small discrepancies that can occur with pumping rates. Small discrepancies in the flows of these creeks will not seem significant and may well not be discernable but constitutes a major factor in their flow regimes. For instance Porcupine Creek is lucky to have 0.1 ML/day summer flow.
2. Springs that *“could be potentially impacted...”* are not shown. No map has been provided and it is apparent that significant wetlands in the area to the north of the catchment are not to be monitored.
3. The area of unconfined aquifer of the Eastern View Formation (EVF) is not provided.

Page Three

1. This page refers to Appendix A. The Appendix A data is completely BLACKED OUT (see page 47). The data cannot be read. It would be good to see the full range of possible impacts under varying inputs into the modelling program but this is not possible. The 9 September Report has this to say about Appendix A, *“The results demonstrate a wide range of potential impacts on streams, depending on model input parameters. However, while the impacts are wide ranging, the percentage impact on dry season streamflow ranges from negligible to small.”* Bearing in mind that Appendix A cannot be read and much of the modelling data is

“infill” guesswork little credibility can be afforded the crucial assumptions and conclusions drawn.

2. The potential flow losses from negligible to small are stated as up to 7% in Ten Mile Creek and up to 12% in Yahoo Creek. For such small summer flows these percentages should not be dismissed as insignificant.
3. As page 3 states, the impacts demonstrated are wide ranging depending on the MODEL inputs. The fact that the inputs used are based on a high degree of guess work throws considerable doubt on the value of the modelling.
4. Stating that the “*...anticipated impact on Porcupine Creek is negligible...*” should not automatically exclude Porcupine Creek from being closely monitored during any test pump.

Page Four

1. To say that the selecting of one “*proxy*” (Ten Mile Creek) as an indicator for the impact on the entire Loves Creek Catchment system is deplorable and dubious. Scientific proof that this is sound practice needs to be provided quoting studies that mimic the situation found at Kawarren.

Page Five

1. Pompa Bill Creek is spelt incorrectly and this needs to be corrected.
2. Selecting three springs for observation is ludicrous in the extreme. If this test is designed to investigate the environmental effects then it needs to be clearly shown that choosing three such springs from the numerous springs in the area is appropriate.
3. Springs representative of all aquifer levels should be monitored.
4. Baseflow springs feeding the streams in the areas high in the catchment should be monitored as these would be the first to dry.
5. Nested bores at these sites should be established.
6. If the spring surveys and stream flow gauging stations were not suspended in the 1990s perhaps the necessary data would be available and infilling with years of guesswork would not be necessary.
7. No pumping should occur until a comprehensive spring and stream flow monitoring program is implemented and maintained for at least 5 years. Given that Barwon Water will not be needing water from this area for 20 years this is not unreasonable.
8. No mention is made anywhere in this report regarding ongoing monitoring after the test pump ceases. The full extent of any impact could take place anytime after a test pump. This needs to be accounted for.

Page Six

1. To assume that one stream flow gauging station will indicate spring depletion is beyond words. This highlights the complete lack of a comprehensive study, responsible management and neglect and disregard to the Statement of Obligations set down as law that Barwon Water is obliged to follow.

Page Seven

1. This report can talk about percentiles and the like and refer to average annual stream flow reductions but the fact will remain that the flows in the Loves Creek catchment are fully allocated if not well and truly overallocated (see Chapter 11).
2. If we accept the EarthTech (2006) report quoted in the 9 September Report, that the minimum summer environmental flows in Loves Creek should be 6 ML/day, then this would in the strongest terms, indicate that there should be ZERO groundwater extraction from the Kawarren borefield.
3. 9 September Report states that this EarthTech recommendation has relied “*... upon a field assessment and expert knowledge of a technical panel representing the fields of geomorphology, hydraulics, vegetation and macroinvertebrate and fish ecology.*” This

would appear to clearly demonstrate the quality of the work done to establish an ideal 6 ML/day environmental flow.

4. The Barwon Water report goes on to say that this ideal summer environmental flow is not met 46% of the time. The summer environmental flow is fundamentally groundwater yet Barwon Water maintains that the extraction of groundwater before it reaches the surface will have minimal impact. Illogical assertions.
5. This report then goes on to state that...*"As the environmental flow recommendations do not apply to the current flow conditions in the Loves Creek Catchment, these recommendations are not suitable trigger levels for the pumping test,"* and sets trigger levels way below these environmental flows of 6 ML/day.
6. Even though the 9 September Report states expert knowledge has been used to develop an environmental flow regime, the 9 September Report disregards it because this flow has never been adopted. The 9 September Report sets the red trigger level for this test at under 1 ML/day.

Page Eight

1. To **assume** that the recent range of flows is satisfactory for maintaining ecological health and function is not a sound scientific basis on which to draw important conclusions.
2. The macroinvertebrate studies mentioned in the 9 September Report have not been made available for scrutiny.
3. The fish studies done in the mid 1990s have been disregarded.
4. Conducting comparative fish studies should be conducted to clarify *"... whether fish communities are experiencing flow stress..."*
5. The 9 September Report recommends that *"... the pumping test should not cause flows in Loves Creek to drop below levels that are currently experienced,"* then sets trigger levels well below these current average levels.
6. Because the stream flow gauging stations at Ten Mile, Yahoo and Serpentine were decommissioned in the mid 1990s, much guess work and modelling had to be used to fill in the 13 year gap of none recording to arrive at some of these conclusions.
7. No explanation was given why the Yahoo stream flow gauging station was not recommissioned. Considering 1990 studies suggested its flow could be dried up in the event of a test pump at Kawarren. This is a significant omission.

Page Nine

1. From personal experience over 40 years it is difficult to accept the graph on this page to be a true representation of flows in the creeks in the Loves Creek Catchment. Loves has to have a higher flow graph at all stages as it is a combination of the other three tributaries of Ten Mile, Yahoo and Porcupine Creeks. This is represented in the graph. However, during the summer months of no rainfall events Ten Mile is always the next highest, then the Yahoo and finally the Porcupine. This order of summer flow rates was also the case during the 1980s and 1990s during the period these streams were being recorded. The data presented on this page must be revisited so that misrepresentation is avoided.

Page Ten

1. "Infilling" is an interesting term for lack of data that is replaced with guesswork. No consideration has been given to
 - a. the drawdown affect on the Loves Creek Catchment tributaries from the Barwon Downs borefield,
 - b. legal extractions for stock and domestic use, and
 - c. legal unregistered entitlements not presently being diverted.
2. Far too much of the data presented is based on "infill" calculations. To draw conclusions of various scenarios from this data as show in Appendix A, an appendix that cannot be read (see page 47 above), is a most doubtful way of presenting a sound scientific document.

Page Eleven

1. On this page there is a table showing that during the dry summer season the flow in the Porcupine Creek is zero. The nonsense and poor researching allowing this statement to be made has been highlighted earlier in this Chapter. Also this table contradicts the graph found on page 9 of the 9 September Report.
2. The trigger levels have been calculated using “infill” data. From this data the Amber trigger level has been calculated within the natural range of the creeks and it is stated that “... *therefore any short term impacts to the ecology of the creek as a result of flow reductions will be minimal.*” If taken over a two week period the concern with this theory is that an effect may not be immediately apparent. Also if Ten Mile Creek is the only trigger stream why is the 10th percentile applied to Loves Creek. As explained earlier the gauging station at Loves Creek is all but impossible to determine effects.

Page Twelve

This page discusses the trigger levels, levels significantly below the ones recommended by Earth Tech.

1. Let’s consider this.
 - EarthTech recommend an environmental flow of 6 ML/day in the dry season for Loves Creek.
 - The 9 September Report recommends that “... *the pumping test should not cause flows in Loves Creek to drop below levels that are currently experienced.*”
 - As a consequence SKM set the Amber One trigger level at 1.46 ML/day.
 - The Amber two level at 1.40 ML/day independent of the recent drought conditions, and
 - The Red Level at 0.75 ML/day which is 5.25 ML/day below the Earth tech recommended environmental flow.
 - It is stated that the Red Level may constitute a significant reduction in pumping or that the pumping test be stopped completely. This is to be determined in consultation with an ecologist.
2. Also on this page the reversal of any impact is based on guess work and modelling. Proof by way of similar groundwater investigations needs to be provided supporting this theorising.
3. The statement, “... *it takes into account the natural daily fluctuations and diurnal variations in flow.*” is puzzling and needs to be clarified for meaning.
4. How “...*the maximum delayed impact on the streams would be in the order of three months,*” needs to be satisfactorily explained.

Page Thirteen

1. In the middle of this page under point 2 there is a clear example of the inaccurate and poor work done compiling critical information. The Statutory Declaration found on page 49 clearly demonstrates that Porcupine Creek does not display ephemeral flow patterns.
2. This report sadly lacks credibility and nowhere within its pages can be found the influence that the drawdown from the adjoining Barwon Downs borefield has had on the Gellibrand GMA. The omission of determining any possible impacts that may be apparent on streams in the Gellibrand GMA and Kawarren area from the extraction at Barwon Downs, is sadly apparent.

Page Fourteen

1. If a member of the Kawarren/Gellibrand community were to recommend the actions as set out on this page in regard to monitoring Yahoo Creek, he/she would be laughed out of the country and ridiculed for lack of stringent scientific procedure. The Yahoo stream flow gauging station was regarded as a vital installation for data gathering when a test

pump was being planned back in the 1980s. Any change of this status needs to be explained.

2. It would appear that the reference to Table 6 should have been to Table 8. If taken as read this reference does not makes sense.

Page Fifteen

1. Besides this Table 8 is based on assumptions and doubtful data. It would appear to the uninformed that the implementation of any of the trigger recommendations could be delayed by 76 hours at the least, and by weeks at the maximum.
2. Southern Rural Water's records of diverters from the Loves Creek Catchment is also sadly lacking as explained in Chapter 11.

Page Sixteen/Seventeen

1. It seems incongruous that this report can base much of its findings on assumptions and infill guesswork and yet can doubt the "veracity" of locally collected data over 20 years from one of the designated trigger springs. To also refer to this data as "semi- reliable" could be taken as being extremely offensive. On what basis can it be justified that commonly accepted infill guesswork is any more reliable than actual first hand data gathering by a local resident? Logically this does not make sense. *"... only Pomperbill Creek has the potential for obtaining a reasonable record of historical flows, based on data collected by the landholder (the veracity of this data needs to be checked however)."*
2. *"Due to the lack of baseline data at the three nominated springs, it is not possible to specify trigger levels with any degree of confidence."* *"We therefore propose only a very crude trigger system for springs..."* The data collected over the years and the personal 40 years of local knowledge of the springs on Pompa Bill Creek is by far more reliable than the crude benchmarking proposed in the 9 September Report.
3. Considering the statement that Barwon Water does not plan any extraction within 20 years it is more than reasonable to delay any test pump until "semi-reliable" data is replaced with years of "accurate" and "reliable" data collected by credible experts. This applies to the spring monitoring, stream flow gauging, environmental flows and ecological monitoring so that any assumptions, guesswork and modelling based on "infills" and incomplete data can be replaced with accurate up to date data. The veracity of local data could also be put to the test.
4. As can be seen in the Statutory Declarations on pages 49-52, this report has another piece of poorly reported information. At no stage would the statement been made that Pompa Bill Creek had never ceased to flow in the *"...last 15-20 years."* Pompa Bill Creek has never stopped flowing in the last 40 years.
5. The following quote from page 17 of the 9 September Report highlights the lack of concern shown for local residents and the environment in the event that any of the three permanent trigger springs was to dry up. *"The spring trigger levels should be subordinate to the stream flow trigger levels, and are not considered reliable indicators of the need for major intervention in the test, such as terminating the test, due to lack of reliable historic data (as described above)."* If Pompa Bill Creek was to dry up during the groundwater extraction test, after having continued to flow freely for at least the last 40 years, this fact would be noted in the investigation records and the pumping would continue unabated. This is deplorable.
6. Given that these springs are the initial source of summer surface water flow in the streams it could be argued that any impact on the area would be first observed in the springs and wetlands in the headwaters of the creeks. Monitoring of these areas is vital and it is argued that they would form a better indication of surface impacts due to groundwater extraction.

Page Eighteen

Springs, wetlands and creeks that local residents and the integrity of the environment have relied on for decades should not be easily dismissed if the test pump dries them up.

1. The three springs to be monitored are not representative of the variety and diversity springs in the area. Effects cannot be noted if there is no monitoring.
2. The survey conducted of all springs in the area is not available for public scrutiny. The complete monitoring survey should be shown, mapped and the sources of the spring water determined.
3. Spring survey data collected in the 1990s has not been included in this data gathering process.
4. The three springs determined as trigger springs have continued to flow through the worst drought on record. The waters from these springs are a vital part of the viability of the farms they flow from and through. If any of these springs ceases to flow for any period of time during the test pump, the pump should be terminated immediately and the farmers compensated. If Pompa Bill Creek for example, was to cease flowing for any period of time this would be catastrophic for stock and domestic water supply, an occurrence never before experienced. No provision and or compensation arrangements have been organised for such an event. The 9 September Report suggests that a spring drying up is a notable event, perhaps unfortunate but definitely regarded as inconsequential with the test pump proceeding unabated.
5. There has been no provision for the implementation of the Ministerial Guidelines for Licensing Groundwater for Urban Water Supply – 2008. The licence issued to Barwon Water for the Kawarren test pump states it is for urban supply. Therefore the guidelines that have these things to say is applicable to this Kawarren borefield investigation:
 - a. *“... the licensee (is) to compensate existing authorised groundwater users that are materially or adversely affected by taking of water under licence.”*
 - b. In this situation *“... the licensee must compensate that person by providing: an alternative water supply at the cost of the licensee; or financial compensation in a manner agreed between the parties. The licensee must not materially affect any existing authorised user of water until compensation arrangements are put in place.”*
6. The springs and wetlands in the area first to experience any drawdown affect are not being monitored. Permanent headwater springs on the Yahoo, Ten Mile and Porcupine Creeks require ecological monitoring stations to be established not to mention the countless other creeklets feeding into the catchment.

Page Nineteen

1. For some unexplained reason the frequency of monitoring the stream trigger levels decreases as the test pump proceeds. For the uniformed this appears to be the wrong way around. As the test pump draws down the aquifer it would be expected that any detrimental influence would increase requiring more vigilant monitoring.
2. *“Reporting against the trigger levels to Barwon Water/Southern Rural Water is proposed on a monthly basis. If any trigger levels are breached however, we will report this to Barwon Water/Southern Rural Water immediately.”*

These words are comforting especially when it is stated that any breach of a trigger level is reported immediately. The impression gained is that there would be a minimum period before remediation was initiated. However, with the monitoring regime being suggested a trigger level could go undetected for 13-14 days before any remediation commences and then another 76 hours is allowed for the completion of this work. The amount of social and environmental impact that could take place during this time frame could be significant and irreversible. The monitoring regime is totally inadequate.

CONCLUSION

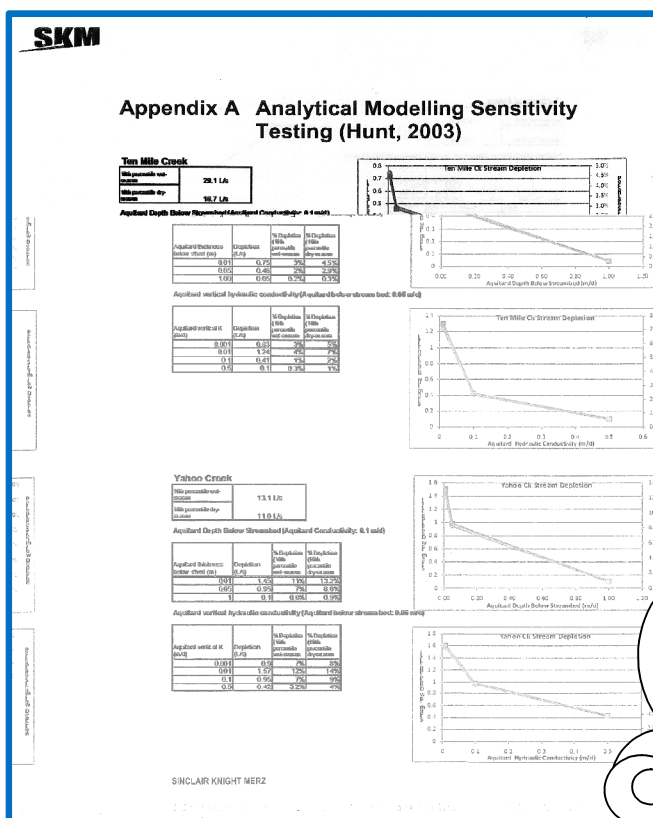
This project as outlined in the 9 September Report is ill conceived, poorly researched, based on doubtful assumptions and modelling and contains gaping data “blackholes.” All of these shortcomings, given time and research can be overcome. The environmental integrity of this area could then be assured.

Considering there now appears to be ample time to manage a thorough and competent research project before any test pumping, this would be an opportune time to put in place monitoring and investigative programs. The first part of such a project should be a desk top study collating the multitude of data and reports already conducted in the Kwarren and Gellibrand aquifer area.

In 1989 at the NREC hearings⁽³⁹⁾ held in Colac the Geelong and District Water Board (now called Barwon Water) representatives argued strongly that if Geelong was not to run out of water by the mid 1990s the water resources of the Kwarren/Gellibrand area had to be made available immediately. There was no time to conduct thorough longitudinal studies. However, in 2009, if the executive officers of Barwon Water are to be believed that there will be no need for Kwarren borefield water for at least 20 years then there is ample time to instigate appropriate investigations.

Post Script:

Barwon Water was sent a Freedom Of Information (FOI) request on 5 October 2009 asking for a copy of the **final** report of the “Newlingbrook Groundwater Investigation – Stream Trigger Levels for 90 day Pumping test.” Up to this period of time the latest available edition of this report was DRAFT 4. The reply to the FOI arrived late in November. The covering letter (Barwon Water Ref: 15/260/0007C(2)) stated, **“Report attached. Draft 4 is the latest version, no final report produced.”**



Having had no success on three previous occasions to obtain a readable copy of Appendix A in Draft 4 it was surprising to turn to the appendix in this latest version and find that it was no longer blacked out (see page 47).

Considering the amount of obfuscation experienced up to this stage it has been easy to arrive at the following thought.

What a sham!

When comparing the two inserts presented in this book, page 47 and this page 60, it is difficult to see how Appendix A could have been blacked out by accident on three different occasions; from two different sources and especially when the second copy was requested specifically asking for a readable Appendix A. Only after Barwon Water decided to withdraw its application to pump at Kwarren, is a readable copy supplied. A copy that was not even asked for.

What a sham!

A page from Appendix A supplied late November 2009.

CHAPTER 6

Issuing of a Groundwater Licence to Test Pump at Kawarren

This chapter summarises some of the events leading up to Barwon Water withdrawing its desire to test pump at Kawarren 24 hours before the second direction hearing at the Victorian Civil & Administrative Tribunal (VCAT). The reasons given for this withdrawal by Barwon Water pale into insignificance when compared with the compelling arguments that had been prepared for the VCAT hearing by the 8 appellant groups to stop this test pump.

Background.

Pumping of groundwater at the Barwon Downs borefield by Barwon Water has had catastrophic environmental and social impacts in the vicinity of Boundary Creek. Platypus colonies, blackfish and trout populations were also decimated in Dewings Creek. Prior to pumping in the 1980s, assurances were given that this would not be the case. Assertions by Barwon Water as recent as 2003 have been made that there has been little flora or fauna degradation, even though since pumping began, Boundary Creek has been dry on at least 900 occasions up to the end of May 2008.

Pre pumping environmental data was not collected. Vital local knowledge was ignored. The amount of water that could be extracted annually on a sustainable basis, called the Permissible Annual Volume or PAV (set at 4000 ML/year in 1997), was given scant observance. In 2004 the yearly extraction rates permitted by licence are now 5 times this PAV. The PAV is now called the Permissible Consumptive Volume (PCV) and is now set at 20 000 ML/year.

This state of affairs most probably arose because the groundwater developers were mainly concerned with geomorphology, hydrology and fluid mechanics to an almost total exclusion of other concerns.

The environmental and social ramifications experienced as a result must not be permitted to happen with other groundwater extraction proposals.

But unfortunately from an environmental and social perspective little appears to have been learnt from the Boundary Creek and Dewings Creek experiences. In 2007 moves were afoot to exploit the groundwater at Kawarren in a similar fashion.

If extraction of water from the Kawarren borefield followed the Boundary Creek scenario one could expect...

- A. significant social disruption,
- B. increased fire risk and intensity,
- C. depletion of historically continuous and reliable stock and domestic water supplies,
- D. decreased property values,
- E. immeasurable effects on tourism,
- F. recreational pursuits to disappear and or change dramatically,
- G. catastrophic impacts on the environment with
 - i. streams and creeks drying up,
 - ii. wetlands being seriously compromised,

- iii. flora being significantly altered, and
- iv. surface and groundwater dependent species disappearing.

The following Sections A-F contain much of the material that was to be presented at the VCAT hearings.

A. Diligent and Due Process not being followed

Following is a timeline of events that clearly demonstrate that due process and the law as outlined in the Water Act and other Government documents was not being followed.

- October 2006⁽⁵¹⁾ the Victorian Government tabled its Sustainable Water Strategy, Central Region Action to 2055. This relevance of this document is summarised in Section B below – zero groundwater extraction from Kawarren with investigations into the connectedness between groundwater and surface water would be allowed.
- 11 May 2007⁽¹⁾ Barwon Water signs off on Technical Services Panel Contract - Service Contract No. 10643. This is given to Sinclair Knight Merz to investigate the feasibility of extracting 16 000 million litres from the Kawarren borefield for urban use in the Geelong Region. The contract included the assessment of the development of infrastructure such as, another extraction borefield closer to Geelong, a water treatment plant, easement requirements, land acquisition, pumping station, delivery pipe routes, electricity supply etc.
- June 2007 Barwon Water indicates to a Kawarren farmer that it intends to conduct a small 48 hour pump in August to test the condition of the extraction bore at Kawarren. This test would also look at the properties of the deep water. It was indicated that a 90 day test pump would be commenced in December 2007 and the extracted water would be flushed into the Loves Creek water system.
- July 2007 a 48 hour short term test pump was conducted and 6 million litres of water was dumped into the Loves Creek system. Southern Rural Water did not sanction this pump and it was regarded as inconsequential. In essence it was an illegal extraction. Martin Kent of Southern Rural Water, *"I am advised that SRW did not issue an approval for the pump test. However, given the small volume of groundwater extracted, our attention is focussed on the proposed, and far more significant, three month test."*⁽²⁰⁾ **An illegal extraction such as this by anyone else, other than a water authority, would most likely have resulted in a prosecution.**
- October/November 2007 a rather clumsy effort was made to indicate that permission was given by the Department of Sustainability and Environment to proceed with the work as outlined in Service Contract No. 10643 (see Section C below).
- 1 Feb 2008 – advertisement asking for submissions re: Barwon Water extraction at Kawarren^(see page 69).
- 22 Feb 2008 – submissions closed (Mick Fennessy allowed an extra few days by request).
- 63 submissions sent to Southern Rural Water including the Victorian Farmers Federation opposing the proposed pump.
- 10 April 2008 - verbal submissions heard at hearings in Colac by Mick Fennessy of Southern Rural Water.
- 16 April 2008 – Warrnambool Standard article ^(see page 70). In this article Joe Adamski of Barwon Water was reported to say that Barwon Water would be pumping from Kawarren by July 2008. Mick **Fennessy's decision still not handed down – due process still in motion as per the Water Act.**
- 21 April 2008, the Water Minister, Tim Holding, states that the PCV will be amended to support the Barwon Water investigation program ^(see page 73). **The old provision will have to be revoked and this proposition will have to be done through the Government Gazette process.**
- 22 April 2008, Tim Holding replies to Terry Mulder MP regarding a 843 signature petition ^(see page 72). The wording of this reply is extremely similar to Tim Holding's 24 April letter.

- 24 April 2008. Tim Holding states that Barwon Water **will be given** a licence to pump and that it will be **for 13 months** (see page 74). *Fennessy's decision still not handed down – due process still in motion as per the Water Act. This letter made a mockery of DUE PROCESS and the WATER ACT.*
- 28 April 2008. The 16 April Warrnambool Standard article prompted a terse letter to the EPA and Southern Rural Water (see page 71) asking how this can be so when Mick Fennessy had not brought down a determination – will the licence to extract water at Kawarren be given as a matter of course irrespective of the process still in motion at the time.
- 29 April 2008 Mick Fennessy replies to the terse 28 April letter saying that he still **has not reached a decision** (see pages 76 & 77). Due process still in motion???? Both Mick and Malcolm were not aware of Tim Holding's 24 April letter at this stage. This letter arrived in early May. Mick Fennessy was informed and was surprised at this revelation considering he was still deliberating on the issues at hand. Tim Holding's 21 April letter was another shock, especially to Mick Fennessy when its existence became known on the 10 June 2008.
- The last sentence of Mick's letter (see page 77), when compared to Tim Holding's statement that the licence will be issued, was absolutely dumbfounding. *Fennessy's decision still not handed down – due process still in motion.*
- 22 May 2008. Mick Fennessy states that his decision will come after Barwon Water's reply to issues raised from the 10 April submissions and hearings (see page 78). *Fennessy's decision still not handed down – due process still in motion.*
- 11 June Mick Fennessy wrote to Charles Kohout still talking of due process (see page 79).
- 27 October Mick Fennessy finally handed down his decision,⁽⁴²⁾ granting Barwon Water permission to proceed with the 90 day test pump at Kawarren, 6 months after Tim Holding had already made the decision.
- Mick Fennessy's notification allowed 28 days for appeal.
- Friday 13 November 2008 Val Warner, an objector to the 1 February notice, received her notification (see page 68) of SRW's decision. Appeals had to be in by the following Monday.
- However, in the meantime 8 individual groups appealed the Southern Rural Water's decision to allow a 90 day test pump at Kawarren.
- 13 February 2009 and the first Victorian Civil & Administrative Tribunal (VCAT) hearing was delayed a week to the 20th because of a total fire ban day, the Friday following Black Saturday.
- 20 February 2009 VCAT hearing. Some of the Orders being sought at the VCAT hearing are found on pages 67-68.
- 25 June 2009 notification was given by Harwood Andrews Lawyers that Barwon Water had withdrawn its application to conduct a 90 day test pump at Kawarren. This was done at the eleventh hour, the VCAT directions hearing was due to be conducted the next day.
- 26 June 2009 VCAT Hearing went ahead and it was determined that Barwon Water's application made to Southern Rural Water to extract groundwater at Kawarren be set aside.

A 200 million dollar project dumped.

- A 200 million dollar project was stopped in its tracks. This was, "*The preliminary cost estimate for connection of the aquifer (Newlingrook),*" (Barwon Water's Water Supply Demand Strategy 2007, page 12.)
- 5 August 2009 Warrick Nelson of Harwood Andrews Lawyers provided these reasons for this withdrawal in a letter to the Senior Registrar, Planning and Environment List, Victorian Civil & Administrative Tribunal.
"In an oral submission... I indicated that Barwon Water, as a consequence of the Anglesea groundwater project and the Melbourne-Geelong interconnector pipe project, both of which would be operational within a relatively short period, no longer sought to investigate the Kawarren groundwater option. I also indicated that it was only shortly prior to the 26 June hearing that Barwon Water received confirmation from external sources interested in the application endorsing its decision not to proceed," and...

“Advice from the Minister for Water accepting that it was appropriate to no longer explore the Kawarren groundwater testing program was received by Barwon Water late on the 24 June 2009.”

How much of this explanation for pulling out of the VCAT hearing at the eleventh hour is true or not will never be known but the following things are...

- The Anglesea project was announced by the Victorian Water Minister John Thwaites of the Bracks era and was to be fast tracked to be in operation by August 2008. The Anglesea borefield development has been given the “green” light for years.
- The Melbourne to Geelong pipeline utilising desalination water has been foremost in the present Government’s thinking since the desalination plant was muted. This connection was the preferred option declared by Government in May 2007 (see page 74).
To say these two projects were the reason for withdrawing from the Kawarren borefield investigations defies logic.
- The most curious fact would be that Barwon Water “...received confirmation from external sources interested in the application endorsing its decision not to proceed.” What an unusual event that an unnamed “outside player” could have such an influence when communities the length of the Gellibrand River had been endorsing a Barwon Water decision not to proceed for 2 years.

B. The Central Water Strategy.

In Gazette 44 (02/11/2006), the same year that the Central Water Strategy was published, the Victorian Government set the groundwater extraction from the Gellibrand Groundwater Management Area (GMA) at ZERO. This was seven years after this recommendation had been made.

Under the Water Act a Water Strategy had to be developed for various regions within the State. The Central Water Strategy⁽⁵¹⁾ was one of these developed by the State Government. There is no reference in this Strategy recommending or categorising the Gellibrand Groundwater Management Area as an area to be investigated with the aim of extraction for urban use. However, the Newlingbrook Groundwater Management Area is mentioned numerous times. This Central Water Strategy states the Gellibrand GMA is an area to be preserved and looked after, NOT to be exploited.

This Central Water Strategy reiterated the Gazetted zero groundwater extraction for the Gellibrand GMA. The Strategy also stated that Barwon Water could look at two options for additional water supply:

1. A connection to Melbourne, and
2. Groundwater from the Newlingbrook Groundwater Management Area (GMA).

(It must be kept in mind that the Anglesea groundwater extraction project was well under way.)

However, the Central Water Strategy did include a footnote that said the Gellibrand Groundwater Management Area (GMA) could be investigated regarding groundwater and surface water interaction. Barwon Water and or the Department of Sustainability & Environmental officers misread this as a green light to move into the Gellibrand GMA and do what ever they wished.

This footnote in the Strategy most definitely did not include land acquisition, roading, treatment plants and several other infrastructure works as outlined in the Barwon Water Contract given to Sinclair Knight Merz. Barwon Water’s main objective when investigating the Kawarren borefield was not to determine the interaction between groundwater and surface water. Barwon Water’s main objective is demonstrated in the Service Contract 10643⁽¹⁾ where it states that SKM is to look at the

feasibility of extracting 16 000 million litres per year, piping to the Geelong system and a multitude of other infrastructure works.

This Central Water Strategy also contains this quote...

- ***“The Government will issue new entitlements or licences to extract additional groundwater only within the permissible consumptive volume after existing commitments are met and if dependent ecosystems and aquifer health are protected.”***

The intentions behind this statement were being ignored.

The 2004/05 Victorian Government State Water report has this to say...

- ***“... the PAV (now PCV) for the Gellibrand is set to zero due to the concerns... raised in studies... about groundwater pumping adversely affecting baseflow to the Gellibrand River.”*** It wasn't until 2006 that the PCV was Gazetted as ZERO.

The Central Water Strategy and the ZERO PCV for the Gellibrand GMA had been developed and signed off by the State Government for very compelling reasons.⁽¹⁸⁾ The decision was made and reiterated often that the Gellibrand Groundwater Management Area was to be left alone.

C. When was Barwon Water Given Permission by the Department of Sustainability & Environment (DSE) to Proceed with Investigations at Kawarren?

(Copies of the emails and letters referred to in this Section can be found in Otway Water – the Summaries Chapter 3.)

It would appear that Barwon Water was given permission to investigate the Kawarren borefield months after Barwon Water had let out Service Contract No. 10643 to Sinclair Knight Merz. In fact there is an extremely compelling case to say that DSE even attempted to backdate permission but made a botch of it.

The detailed 38 page Service Contract was issued 11 May 2007. Months later 25 October 2007 at a public meeting in the Gellibrand Hall, Barwon Water officials agreed to provide the documentation giving Barwon Water permission to issue Service Contract No. 10643. As confirmation of this agreement to provide documentation Barwon Water was sent an email on 31 October 2008. The reply 2 November 2007, stated that it would be accessible on the Barwon Water web site in a couple of days. This was confirmed on the 7 November by “snailmail” from Paul Northey, Managing Strategic Planning & Sustainability officer.

Other documents promised at the 25 October meeting were placed on the web by 11 November. Still no “evidence” from the Department of Sustainability and Environment (DSE) giving Barwon Water permission to develop and issue Service Contract Number 10643.

By the 24 November 2007 the ‘evidence’ had been placed on the web site, a letter written by Campbell Fitzpatrick, Executive Director, Water Entitlements and Allocation (DSE). No explanation was provided why the extensive delay putting this “evidence” on the Barwon Water web site. Curiously the letter confirming that Barwon Water had permission to investigate the Kawarren borefield was dated a few days before the July 48 hour test pump that had been conducted at Kawarren but not before Service Contract Number 10643 had been issued.

To clarify this an email was sent to Campbell Fitzpatrick asking him to confirm that his letter dated the 15 July 2007 was the actual date Barwon Water was given permission to proceed with groundwater extraction proposals at Kawarren.

“Can you confirm with me when it was first agreed with Barwon Water by DSE that Barwon Water could proceed with groundwater investigations at Kawarren with a test pump?”

Campbell asked Brett Spicer of DSE to reply. Brett’s email included, *“In the content of the current groundwater resource appraisal in the Otway region, agreement on the scope of the appraisal was reached between the two parties on 15 June 2007.”* This is a month previous to the date on Campbell’s letter but is still a month after Service Contract No. 10643 had been let. Considering that such a detailed Service Contract could not be drawn up without extensive research and consultation, it is feasible to suggest that this process may well have begun in 2006.

No evidence has been provided to show that Barwon Water had any jurisdiction to proceed with the drawing up of such a detailed investigation aimed at exploiting the groundwater resources at the Kawarren borefield.

D. Newlingrook & Gellibrand GMAs.

Barwon Water and DSE claim that the Kawarren borefield is part of the Newlingrook Groundwater Management Area. This is absolute nonsense. These two GMAs, the Gellibrand and the Newlingrook, are quite different and distinctly separated by an aquifer divide called the Gellibrand Saddle. Only in ones wildest dreams could the Kawarren borefield be regarded as part of the Newlingrook investigations. The motivating factor influencing the inclusion of Kawarren into any Newlingrook investigations may be that the Kawarren borefield is many kilometres closer to Geelong than the Newlingrook aquifer.

The closest boundary of the parish of Newlingrook is approximately 12 kilometres from the Kawarren borefield site. State Government documents also clearly indicate this separation (see page 6).

Leonard⁽³⁶⁾ found that Newlingrook and the Gellibrand borefields had their own distinct characteristics in aquifer type, depth and stream/aquifer interaction. They could not be categorised as one. In 1994 Hydro-Technology⁽³²⁾ and later GHD⁽⁵⁸⁾ in September 2006 also recognised this separation.

E. The Permissible Consumptive Volume (PCV).

On the 2 November 2006, State Government Gazette G44, stated quite clearly and irrevocably that there was to be ZERO groundwater extraction from the Gellibrand Groundwater Management Area.

It is nonsensical to even try to mount an argument that this zero determination was set because of insufficient information (see Tim Holding letter 21 April 2008, page 73). There is an insurmountable amount of evidence to support the ZERO groundwater extraction determination.⁽¹⁹⁾

The most convincing argument that put a stop to any further consideration for groundwater extraction from either the Gellibrand and or Kawarren area, became apparent as a result of Khouri and Duncan’s work in 1993.⁽¹⁹⁾

The significance of their work was that if there was a basic minimum environmental flow allocated to the Gellibrand River, then in times of drought many towns in the Western District would run out of water. Before any groundwater extraction was planned in the 1990s at Kawarren, environmental studies were implemented and included environmental flows. Flows recommended for the Gellibrand River and Loves Creek significantly conflicted with and would have jeopardised the

security of the Wannon Water system for many of the Western District towns. The Kwarren extraction was stopped in its tracks. All of the studies in the 1990s reiterated the absolute need to put the Permissible Consumptive Volume at ZERO.

For the Minister of Water to consider any change to this zero allocation indicates either the Minister's advisers are not briefing him on the considerable amount of evidence to the contrary or he has little concern for the environment and country resident's welfare. The scientific studies and data supporting the case for zero groundwater extraction from the Kwarren borefield has been generated by Government initiated research and is readily available through Government authority archives.

F. Orders Being Sought at VCAT.

The Orders being sought of the VCAT tribunal from the 8 appellants totalled well over 100. The Orders being sought were based on the Water Act 1989 and other Government documents. The basis of these orders clearly demonstrated that the appropriate and correct ways of investigation for a groundwater extraction test were not being followed. The Orders, simply put, were asking that the procedures for the Kwarren borefield investigation be carried out using State Government policy, law and best practise.

The following are a sample of those orders being sought:

- a. Refuse the licence until documentation is provided that verifies that such a small extraction compared to earlier calculations will provide the necessary data to determine accurate scenarios.
- b. Refuse the licence until Barwon Water makes available to the public data showing the sphere of influence from the Barwon Downs borefield to the point of zero impact.
- c. That Southern Rural Water's Statement of Reasons for granting this licence be rewritten with the inaccuracies corrected.
- d. That the Regulatory Reference Group be replaced with the Kwarren Groundwater Steering Committee.
- e. That the Kwarren Groundwater Steering Committee has ALL stakeholders represented as it did back in the 1990s.
- f. Refuse the licence until ALL conditions, for example provision of environmental flows, of the Environment Protection Act are satisfied as per Special Government Gazettes No. S 107 and S 160.
- g. The test pump is delayed until a method for discharging the extracted groundwater back into the streams does not return to the aquifer and or does not impact on the environment.
- h. Complete a comprehensive base-flow analysis.
- i. Before any pumping is commenced ensure Dr. Rick Evans's Response Ration be applied to the streams in the Loves Creek Catchment. (This would show that these small summer base flow streams will in fact dry up.)
- j. Conduct a comprehensive total water balance for the Loves Creek Catchment. (The local Landcare's preliminary total water balance study shows that the water resources of the Loves Creek Catchment are already fully allocated.)
- k. Order that a total water balance study includes and reviews the findings of the eight studies mentioned that have indicated the water resources of the area are already fully allocated.⁽¹⁷⁾⁽³²⁾⁽³³⁾⁽³⁵⁾⁽³⁸⁾⁽⁴³⁾⁽⁵⁵⁾⁽⁵⁸⁾
- l. That no pumping takes place until the obligations as set out in Barwon Water's Statement of Obligations are incorporated into the Kwarren investigations brief.
- m. Refuse the licence until the connectedness between the ground and surface waters is completed.

- n. That comprehensive environmental and hydrological monitoring stations be established in the head waters of Ten Mile, Yahoo and Porcupine Creeks.
- o. Identify at least 16 trigger water dependent species.
- p. State their biological requirements.
- q. Have a combination of species from surface AND groundwaters.
 - Establish trigger levels for these species.
 - State what these trigger levels are.
 - Make this material available to the public.
- r. Refuse the licence until the Yahoo Creek stream flow gauging station is reinstated.
- s. Refuse the licence until a social impact study is incorporated into the investigations.



Our ref 279600

27 October 2008

*As Australia Post Office
I witness this documentation
arrived today Friday 21st Nov 2008.
Derek G
M Kazak*

*Mail was collected on 22nd Nov 2008 (20) also.
Received 21st November 2008*

**Re: APPLICATION TO CONDUCT PUMP TEST BY BARWON WATER -
ADVICE OF DETERMINATION**



I am writing to advise you of the outcome of deliberations with respect to an application under s.51 of the Water Act 1989 (*the Act*) by Barwon Region Water Authority to conduct a 90-day test pump of a bore at Kawarren and to extract up to 640 megalitres (ML) during the course of the said test.

In the first instance, I wish to apologise for the lengthy period that has ensued since I first advised of the application and corresponded with you. Determination of matters such as this application is neither simple nor straightforward and involves wide ranging consultation and consideration of many issues both statutory and functional.

I wish to advise that after taking all matters that ought to be taken into account I have determined to approve the proposal. A "Statement of Reasons" is attached.

The original application sought to extract up to 640ML which has been reduced to a maximum of 625ML under a temporary variation to the Permissible Consumptive Volume for the area granted by the Minister for Water.

The licence shall be subject to special conditions in relation to interference to neighbouring bores, monitoring of surface water (streams and waterways) discharge of the pumped water and a range of other matters. Conduct of the test and activities relating to the test pump will be monitored and managed in accordance with parameters that have been established for the specific site.

Any future proposal to pump from the bore in question or to develop a borefield in or around the location would require a totally new application. Given that such a proposal (and I do not seek to pre-empt any decision in that regard) would be likely to seek to extract a far greater volume than that involved in this application, a vastly different and far more detailed approach would need to be applied. The outcome of any such application would not be governed or influenced by the outcome of this application.

*Witnessed. C. Kohout
C. KOHOUT
21/11/2008.*

*Witnessed that this
mail arrived today
21 FRID NOV. 2008*

PO Box 153 MAFFRA VIC 3860
Telephone: (03) 5139 3100
Facsimile: (03) 5139 3150

ABN: 70 801 473 421
Email: srw@srw.com.au 1
Website: <http://www.srw.com.au>

Colac Herald 01/02/2008

Our Water Our Community
Our Future Our Choice

SOUTHERN Rural Water

EXPRESSION OF INTEREST REGARDING PUMP TESTING OF A GROUNDWATER BORE
Parish of Yaughter

Southern Rural Water wishes to advise that it has received an expression of interest from Barwon Region Water Authority (Barwon Water) top undertake a pump test on an existing bore at Kawarren.

The purpose of the pump testing is to determine aquifer yields and potential bore extraction rates.

The bore is located at McDonald's Road, Kawarren – Lot 1, Plan 52905Y, Allotment 18M(pt) Volume 9654, Folio 213 in the Parish of Yaughter.

The bore is located in the Gellibrand Groundwater Management Area.

Southern Rural Water is committed to a consultative process so as to properly inform the community of the purpose and intent of the proposal and intent of the proposal and to be informed of the community's views.

In the first instance therefore, we seek comment from any interested person or party that considers that they are or may be affected by this proposal. Submissions, in writing, on this proposal will be accepted until **4 pm on February 18, 2008** and will be taken into account in considering any future formal application.

Please direct enquiries and submissions to:

Mick Fennessy,
Manager, Licensing Administration – West,
PO Box 153, Maffra, Vic 38560
Telephone 5564 1700

Please quote reference: MF Kawarren

Dr Martin Kent
Managing Director

88102

The one and only notice of this highly controversial issue. Note that the post code is incorrect.

Gellibrand fear

By ALEX JOHNSON

THE Gellibrand River stopped flowing as drought and rising demand took their toll on Warrnambool's key water supply.

While recent rainfall has now boosted river levels, revelations the river stopped flowing during summer caused renewed angst among the area's landholders as Barwon Water steps up its plans to take groundwater from its upper reaches.

Princetown landholder Judy Spafford told *The Standard* the Gellibrand "literally stopped flowing" late last

month after unprecedented low rainfall. "We've got Wannon Water extracting and we've also got drought," she said.

Landholders from the length of the Gellibrand gathered in Colac last week to air their concerns with Southern Rural Water over Barwon Water's application to drill test bores in the Orway Ranges.

Barwon Water plans to do test pumping in the Kawar-

ren/Gellibrand and Newling-rook aquifers to assess their ability to supply water to Geelong.

"The Gellibrand River is under extreme stress so what is pumping from the Gellibrand River going to do to it," asked Mrs Spafford, who has closely watched the river's health for more than 20 years.

Barwon Water's executive manager of strategy and technology, Joe Adamski,

said the pumping test would begin in July. It would extract about 500 megalitres or 0.05 per cent of the water held in the aquifers.

"The pumping test will be part of a two-year study on the relationship between the extensive aquifers, surface water systems, including the Gellibrand River," Mr Adamski said.

The water will be dis-

charged into nearby Loves Creek after being treated to meet EPA standards, he said.

Wannon Water acting managing director Andrew Jeffers said the amount of water extracted during summer was below the authority's entitlement.

"At Wannon Water's South Otways extraction point there were good flows all through summer.

"Currently 120 million litres is flowing at the South Otways extraction point per day and Wannon Water is only extracting 12 million litres on average per day."

Appeal victory avoids prison

By ANDREW THOMSON

A PORTLAND woman who encouraged youths to smash walls in her housing commission home, leading to it being demolished, has avoided going to jail.

Rebecca Twomey, 32, of Mitchell Crescent, was initially sentenced to serve three months in jail with one month suspended for 18 months in the Portland

Malcolm Gardiner
1805 Colac Beech Forest Road
KAWARREN
Vic 3249

28-04-2008

Mick Fennessy
Manager, Licensing Administration – West
Southern Rural Water
132 Fairy Street
WARRNAMBOOL
Vic 3280

Dear Mick,

From the article I have included from the Standard 16 April 2008, it would appear that Joe Adamski has been given the impression from someone that Barwon Water has permission to do their test pump in July 2008. I assume that Joe believes he has both Southern Rural Water and EPA approval. But perhaps he doesn't require such permission.

I find it most disturbing on many fronts that Joe can be quoted as saying "...the pumping test (at Kawarren) would begin in July."

- The Kawarren/Gellibrand community still has not been informed of **anything** from Barwon Water, since October 2007. This is in complete disregard of the Statement of Obligations that Barwon Water is obliged to follow.
- What is happening about the proposed 24 hour test pump? Has approval been given by SRW or EPA at a local and or State level?
- Has approval been given over the heads of the relevant local authorities allowing them to go through a consultative process to give the impression that the decision hasn't been already made? – when it has.

Are the rules, policies, objectives and laws of this Government being changed or being modified and tweaked so that this test pump can go ahead?

Something is terribly wrong here , Mick, and to convince me otherwise will require just a little bit more than a few words of assurance.

In anticipation,

Malcolm Gardiner.



Minister for Water

22 April 2008

Ref: DSE049212
File: CS/03/0527

121 Exhibition Street
Melbourne, Victoria 3000
GPO Box 4509
Melbourne, Victoria 3001
Telephone: (03) 8684 8000
Facsimile: (03) 8684 8014

Mr Terry Mulder MLA
Member for Polwarth
115A Bromfield Street
COLAC VIC 3250

22 APR 2008

Dear Mr Mulder

PETITION - KAWARREN BOREFIELD TEST PUMPING

I refer to your letter of 4 December 2007 to which you attached a petition from concerned residents in relation to the proposed test pumping to be undertaken at Kawarren by Barwon Water.

As you would be aware, in October 2006 the Government released the *Central Region Sustainable Water Strategy* (the Strategy). Through actions outlined in the Strategy, the Government is acting to secure water supplies for homes, farms, businesses, industry and the environment in the Victorian central region for the next 50 years.

The Strategy details two options to support Geelong's future growth: connection to Melbourne's water supply or the development of the Newlingrook aquifer. The Newlingrook study area covers the Gellibrand Groundwater Management Area, where the existing bore in Kawarren will be used.

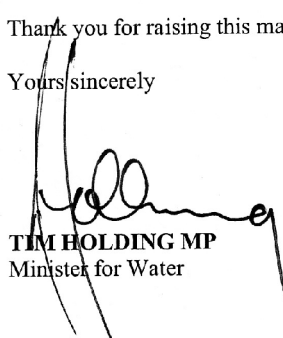
As you would be aware, in May 2007 the Government announced plans for a Melbourne-Geelong interconnector, which will connect Geelong to Melbourne's water supply to support future growth.

Work on the Newlingrook resource appraisal program is nevertheless continuing, and it will improve our knowledge of the extent, quality and properties of the groundwater in the area. Extensive field surveys and investigations are now being undertaken, including pumping tests to determine the aquifer's basic characteristics, including flow rates, draw down rates and recovery rates. The impact of the test pumping on the local environment will also be studied.

I am aware that this resource appraisal program has raised some concern in the local community. However, the appraisal program is comprehensive and the knowledge gained from these studies will assist with the proper management of this resource into the future.

Thank you for raising this matter with me.

Yours sincerely


TIM HOLDING MP
Minister for Water

Privacy Statement

Any personal information about you or a third party in your correspondence will be protected under the provisions of the *Information Privacy Act 2000*. It will only be used or disclosed to appropriate Ministerial, Statutory Authority, or departmental staff in regard to the purpose for which it was provided, unless required or authorised by law. Enquiries about access to information about you held by the Department should be directed to the Manager Privacy, Department of Sustainability & Environment, PO Box 500, East Melbourne, 3002.





Minister for Water

Ref: DSE047344
File: CS/03/0527

121 Exhibition Street
Melbourne, Victoria 3000
GPO Box 4509
Melbourne, Victoria 3001
Telephone: (03) 8684 8000
Facsimile: (03) 8684 8014

Mr Michael Maxwell
1640 Colac - Lavers Hill Road
KAWARREN VIC 3249

21 APR 2008

Dear Mr Maxwell

BARWON WATER - PUMPING OF GROUND WATER IN GELLIBRAND

Thank you for your email of 9 October 2007 regarding test pumping of groundwater into Love Creek at Gellibrand.

In October 2006 the Victorian Government published the *Central Region Sustainable Water Strategy (CRSWS)* which outlines actions to secure water supplies for homes, farms, business, industry and the environment in Victoria's central region for the next 50 years. These actions will help improve the health of rivers and secure water supplies for Melbourne, Geelong, and Ballarat.

As you may be aware, in May 2007 the Government announced that building a pipeline to connect Geelong to Melbourne was the preferred option to secure Geelong's water supplies. However, the Newlingbrook resource appraisal program is continuing to improve our knowledge of the extent, quality and properties of groundwater in the area.

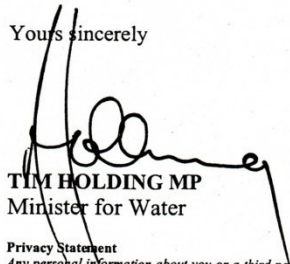
The Newlingbrook study incorporates the Gellibrand Groundwater Management Area and utilises an existing bore in Kawarren. As is normally the case, extensive field surveys and investigations are being undertaken, including test pumping to determine the aquifer's basic characteristics including flow, draw down and recovery rates.

The Permissible Consumptive Volume (PCV) for the Gellibrand GMA was set at zero in the CRSWS because there was insufficient information about how much groundwater could be safely extracted, although a significant groundwater resource is thought to exist. Setting the PCV at zero effectively reserves the groundwater resource until such time as a detailed investigation can be undertaken and a decision made to issue licences. This investigation is now underway and the PCV will be amended to support the investigation program.

If you would like more information please contact Barwon Water directly or visit their website, www.barwonwater.vic.gov.au.

Thank you for raising this matter with me.

Yours sincerely


TIM HOLDING MP
Minister for Water

Privacy Statement
Any personal information about you or a third party in your correspondence will be protected under the provisions of the *Information Privacy Act 2000*. It will only be used or disclosed to appropriate Ministerial, Statutory Authority, or departmental staff in regard to the purpose for which it was provided, unless required or authorised by law. Enquiries about access to information about you held by the Department should be directed to the Manager Privacy, Department of Sustainability & Environment, PO Box 500, East Melbourne, 3002.





Minister for Water

Ref: DSE048544
File: CS/030527

121 Exhibition Street
Melbourne, Victoria 3000
GPO Box 4509
Melbourne, Victoria 3001
Telephone: (03) 8684 8000
Facsimile: (03) 8684 8014

Mr Charles Kohout
125 Carlisle Gellibrand Road
GELLIBRAND VIC 3239

24 APR 2008

Dear Mr Kohout

TEST PUMPING OF GROUNDWATER

I refer to your letter received on 27 November 2007, to the Premier, the Hon. John Brumby MP, regarding the test pumping of groundwater at Love Creek by Barwon Water. As the issue falls within my responsibility as the Minister for Water, your correspondence has been forwarded to me for response.

In October 2006, the Victorian Government published *The Central Region Sustainable Water Strategy*, which outlines actions to secure water supplies for homes, farms, businesses, industry and the environment for the next 50 years. These actions will help improve the health of rivers and secure supplies for Melbourne, Geelong, Ballarat and the State's inner west.

The Strategy identified two options for Geelong's future water supplies: a pipeline connection to Melbourne or utilisation of groundwater resources from the Newlingrook aquifer system. In May 2007 the Government announced that connection to Melbourne was the preferred option. However, the Newlingrook resource appraisal program will continue, to improve our knowledge of the extent, quality and properties of groundwater in the area.

The study into the Newlingrook aquifer system is occurring at several sites, including an existing bore in Kawarren. As is normally the case, extensive field surveys and investigations are being undertaken, and test pumping will assist in determining the aquifer's basic characteristics, including flow rates, draw down rates and recovery rates.

As you may be aware, Southern Rural Water held a meeting on 10 April 2008 with those people who lodged submissions following the advertising of Barwon Water's Section 51 licence application. This licence will be issued for 13 months and will allow Barwon Water to pump groundwater from an existing bore in Karaween. The water will be treated and discharged into Love Creek. Subsequent to the testing period, any long-term licence application from Barwon Water will be subject to public consultation.

Privacy Statement

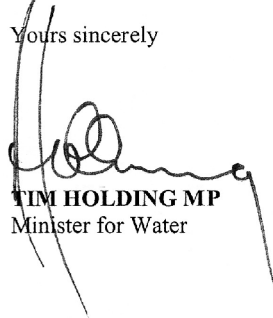
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You may wish to contact to the Licensing Manager at Southern Rural Water on 5564 1700 to suggest any additional studies.

Thank you for raising this matter with me.

Yours sincerely

A handwritten signature in black ink, appearing to read 'Tim Holding', written over a horizontal line.

TIM HOLDING MP
Minister for Water

S

G



29 April 2008

Malcolm Gardiner
1805 Colac Beech Forest Road
KAWARREN Vic 3249

Dear Mr Gardiner,

I refer to your letter of 28 April 2008 and the accompanying extract from the Warrnambool Standard of 16 April 2008.

I wish to state that I have not had any discussion with Mr Adamski of Barwon Water regarding the Kawarren Bore Pump Test and any disclosure he has made to the media does not reflect the situation so far as Southern Rural Water is concerned.

On Thursday last, 24 April, 2008, I met at length with Peter Morgan of Barwon Water and Mike Dudding of SKM to discuss the situation as it stands.

In essence, I have indicated to Barwon Water that I would be prepared to receive a response from them to address the issues raised in the meetings held on 10 April 2008 (at which they were present) and that no decision would be made until such time as I had the proper opportunity to digest all matters before me.

Any presumption on the part of Mr Adamski is indeed that – a presumption and is certainly not based upon factual information.

I am mindful however that the comment attributed to Mr Adamski is not shown as a quotation as other comments have been and may well not necessarily reflect the context or intent of his overall statement.

I wish to emphasise that no approval has been given by SRW or any other agency for any pumping activity to take place.

Your question "*Are the rules, policies objectives and laws of this Government being changed or being modified and tweaked so that this pump test can go ahead?*" is based solely on a comment reported in the newspaper and is unsupported by any other evidence that would sustain your proposition that "*Something is terribly wrong here*".


PO Box 153 MAFFRA VIC 3860
Telephone: (03) 5139 3100
Facsimile: (03) 5139 3150

ABN: 70 801 473 421
Email: srw@srw.com.au
Website: <http://www.srw.com.au>

My comments to the meetings on 10 April 2008 that the process of determination of this matter would be in accordance with the prescribed criteria laid down in the Water Act 1989 can be taken on face value unlike an unsupported statement in a newspaper article.

I can provide no better assurance than my word.

Yours faithfully

A handwritten signature in black ink, appearing to read 'Mick Fennessy', written in a cursive style.

MICK FENNESSY
Manager, Licensing Administration – West
Warrnambool

22 May 2008



22 May 2008

KAWARREN PUMP TEST PROPOSAL

At the meetings held in Colac on 10 April 2008 regarding the proposed test pump of a bore at Kawarren, I indicated that I hoped to conclude the decision making process by the end of May or shortly thereafter.

It has taken quite some time to review the material provided and referred to during the presentations at those meetings and to then distil the information into statement of issues.

In accordance with the principles of fairness, I have also engaged in discussion with Barwon Water to determine their responses to the issues raised and have directed a written request to them a little over two weeks ago.

As at the time of writing, I have been advised that they do not expect to have completed their response to the matters raised until late June 2008.

In terms of following due process and allowing Barwon Water to address those matters, I regard it as fair and proper to wait until I have received their responses before I conclude my decision making. I also regard it is preferable to do so rather than to make a decision in the absence of *all* available information.

I thank you for your patience and will correspond with you as soon as the matter is resolved.

If you have any further questions, please contact me at the Warrnambool office on 5564 1700.

Yours Faithfully

MICK FENNESSY
Manager, Licensing Administration
Warrnambool

PO Box 153 MAFFRA VIC 3860
Telephone: (03) 5139 3100
Facsimile: (03) 5139 3150

ABN: 70 801 473 421
Email: srw@srw.com.au
Website: <http://www.srw.com.au>

From: Marilyn and Charles Kohout (kohouts@bigpond.com)
To: Mick Fennessy
Date: Wednesday, 11 June, 2008 5:29:13 PM
Cc: Mal Gardiner
Subject: Re: RE THE LETTER FROM THE MINISTER

sorry about misunderstanding
i have no problems with right of response
i do have a problem with not being able to see the responses and
gague their validity
i am quite happy to stay within the law

yes - i should not be trying to cloud your judgement with opinions i have
formed through my dealings - and i do apologise for this

however given my experiences you may understand that I have
VERIFYABLE EVIDENCE THAT MAKES IT REASONABLE TO NOT
TRUST Barwon Waters stated opinions

I sincerely wish you good luck with your duties

Charles Kohout
President LAWROC inc (Land and Water Resources Otway Catchments
Incorporated)

----- Original Message -----

From: Mick Fennessy
To: Marilyn and Charles Kohout
Sent: Wednesday, June 11, 2008 4:30 PM
Subject: RE: RE THE LETTER FROM THE MINISTER

Thanks for the response.

Whilst I understand that you are "a little peeved" I have to point out what is referred to as the principle of due process which put simply, requires that in any consideration of a set of facts or a proposition put forward, that both parties ought to have the opportunity to respond to matters raised and that fairness in decision making is paramount

In the adversarial system this is best demonstrated when the court receives evidence in chief then cross examination and finally re-examination.

Accordingly, in making this determination, I have received Barwon Water's application, allowed the opportunity for people to speak to the proposition and now allow Barwon Water the chance to respond.

If I chose not to do so, I can assure you that my process would be roundly criticised by any review of the decision.

I am also aware of your views of Barwon Water and whilst they may have merit, I must be careful not to allow opinion to cloud the decision making process.

I appreciate your understanding in this matter and trust that DSE will expedite their response to clarify the letter which created some ambiguity around the decision making process.

Thanks you also for passing my message to Malcolm - I will note his email address.

Mick Fennessy
Manager, Licensing Administration - West

<http://au.mg2.mail.yahoo.com/dc/launch?.rand=3bne779jon2ar>

11/06/2008

CHAPTER 7

Outcomes of the Kawarren Borefield Test Pump Studies

As discussed in earlier Chapters and Otway Water books, Sinclair Knight Merz (SKM) was given Service Contract Number 10643 to conduct a “Newlingrook & Gellibrand Groundwater Management Areas Detailed Investigations.” Before this project was shelved in June 2009 SKM had spent months conducting preliminary work. Even though there was negligible public consultation the following tasks were observed to have taken place.

- Additional observation bores drilled.
- Some spring surveying and test analysis data and observations collected.
- Two stream flow management stations re-instated.
- A 48 hour test pump conducted and at least three reports on this event prepared.
- Four editions of the Stream Trigger Levels report prepared.
- Extensive testing of which of the many observations bores located in the area would be utilised.

These activities alone would have cost a considerable amount of money.

In Barwon Water’s Water Supply Demand Strategy 2007, page 12 it stated that this project needed an initial injection of \$200 million. An extensive amount of data, observation and other material would have been compiled. Whether this material was accurate, relevant or appropriate, it was anticipated that there would be a final report prepared up to June 2009 when Barwon Water terminated the investigations. As a consequence of these thoughts Barwon Water was asked by way of a Freedom Of Information request for SKM’s final report on the “Newlingrook Groundwater Investigations.”

The reply late November 2009 stated (Barwon Water’s Ref: 15/260/0007C(2)),

“There is no such report. The investigation was stopped before completion.”

When paying out millions of dollars to have an investigation conducted no matter whether it was completed as per the contract, surely a comprehensive final report of the work completed would be expected. Perhaps the reply meant to say a final report has not as yet been prepared. However, that is probably being too considerate when reflecting on the outcome of the identical investigation that was terminated in the mid 1990s. A final report of the 1990 investigations could not be obtained.

In 2007 when groundwater extraction from the Kawarren borefield was once again being investigated, attempts were unsuccessfully made to gain a final report regarding the cessation of similar investigations made in the 1990s. All that could be found were statements saying that all investigations had been terminated due to funding being withdrawn. No official documents or reasons could be unearthed as to why the funding had been withdrawn. No final report.

The strong and convincing arguments that the Kawarren/Gellibrand community presented in both the 1990s and the early 2000s to have these Kawarren borefield investigations terminated are not dissimilar. If a final report had been prepared in the 1990s this report would have shown beyond any doubt that any groundwater extraction from the Kawarren borefield would have monumental detrimental impacts on...

- the environment ,
- the social well being of the residents in the area,
- farming practices, and
- the water security of many towns in the Western District.

The omission of a final 2009 report ensures that history will most likely repeat itself.

CHAPTER 8

Alternative Sources of Water for Geelong

This chapter presents alternatives to the exploitation of groundwater from the Otways.

Many of these suggestions have been proposed to Southern Rural Water, Corangamite Catchment Authority, the Environment Protection Authority, the Department of Sustainability and Environment, Barwon Water and Parks Victoria - to no avail.

These alternatives would allow time for:

- groundwater research to be conducted at a multidisciplinary level rather than from a narrow focused hydrological stand point. Barwon Water has indicated on numerous occasions that the need to extract groundwater from Kawarren is at least 20 years off;
- for quality research to be conducted, and
- years to prepare other alternatives based on thorough research. Alternatives that can be started NOW, not quick fix band-aid type remedies thought up at the last moment.

Alternatives.

1. Fully pipe the 55 kilometres of antiquated open earthen Wurdee Boluc Inlet Channel (WBIC). The Wurdee Boluc Channel carries water from the Barwon River catchment to Geelong's Wurdee Boluc Reservoir.
(In 1990 the **fully piped** water system servicing the Western District, that is now run by Wannon Water, lost between 8 and 13%. One can only wonder at the losses in the Wurdee Boluc Inlet Channel)
2. Reduce evaporation from the Wurdee Boluc Reservoir and the West Barwon Dam using latest technology such as Nylex caps. These caps save 80% evaporation and can stand 120 km hour winds. The Wurdee Boluc Reservoir being shallow and expansive loses incredible amounts of water to evaporation.
3. Capture storm water from city buildings. If a drizzle of half a millimetre of rain could be capture off the Elders building in Geelong this would fill a 30 000 litre tank. The potential to capture rainfall from Geelong and district buildings is enormous.
4. Legislate the following...
 - All new homes to install a water tank.
 - As part of all future house sales the installation of a water tank be mandatory.
 - All homes without a water tank be given 5, 10, 15 ??? years to install a water tank.
5. Divert winter flush from streams south of the Otway Ridge through the mountains to the West Barwon Dam and or Wurdee Boluc Reservoir, similar to the weirs found in the headwaters of Arkins Creek that supplies water to the Wannon Water reticulation system. These water collection points could be engineered to gravity feed into the West Barwon Dam by tunnelling through the Otway Ridge. Setting up of mini hydro electricity stations in

this scheme is a feasible option.



One of the Arkins Creek diversions high in the catchment that gravity feeds water to Warrnambool.

6. Divert winter flush from the Upper Gellibrand River system.
7. Take fresh water from the ocean at...
 - the Torquay Embayment, and
 - other freshwater sources as identified on the 3D imaging being conducted along the Otway coast.
8. Extract water from streams during extreme weather occurrences as was witnessed in November 2007 when the Barwon River valley was in flood. Geelong was also awash with flood water. Collect these flood waters from the Barwon River catchment and pump it into any depleted storage such as the Wurdee Boluc Reservoir and or the West Barwon Dam
9. Enforce water restrictions.
10. Place at least 5 pipes into the infrastructure when developing a new housing estate.
 - One for potable water to the house.
 - One for sewerage from the house.
 - One for recycled water to the house.
 - One to take excess water from the house catchment tank back to storage, and
 - a spare for future eventualities.
11. Process waste water to drinking standard and begin an immediate education program promoting the safety and virtues of such a venture.
12. Treat the water in the Wensley Dale open cut mine to a potable standard, then gravity feed this into the Wurdee Boluc Reservoir.
13. Investigate the feasibility of harnessing the huge volume of fresh water that flows from springs into Lake Corangamite.
14. Install a bypass around the Wurdee Boluc Reservoir from the West Barwon Reservoir direct to Geelong. The smaller surface area and depth of the West Barwon Reservoir is less prone to evaporation than the Wurdee Boluc Reservoir. This could be used on numerous occasions and would avoid storing water in the shallow expansive evaporative prone Wurdee Boluc Reservoir.

CHAPTER 9

Mapping Wetlands, Flora & Fauna Studies

Before any thought can be given to additional extraction of groundwater from the Otways for urban use, practices used in the past must be reviewed and up-to-date management and practise principles implemented. This Chapter begins this discussion. Chapters 10 and 11 will continue with specific examples.

Field and “desk top” information gathering on wetlands, springs, flora, birds, mammals, reptiles, amphibians, fish and freshwater macro invertebrates from the terrestrial ecosystems and the flora and fauna from the groundwater ecosystems should be comprehensive. Too often the sampling of species present in the impact area dominates data gathering to the exclusion and detriment of the biological needs of the biota present. The biological needs of the biota cannot be assessed without having a thorough knowledge of the environment in which the biota exists. To thoroughly assess these needs a multidisciplinary approach is required and should include:

- a. A sociologist, zoologist, botanist, microbiologist, geomorphologist, chemist, anthropologist, economist, hydrologist and hydrogeologist.
- b. The inclusion and engagement of local residents as a high priority.
- c. Two distinct areas that may be affected by groundwater extraction should be defined and monitored:
 - i. One being the area expected to be directly impacted, and
 - ii. the other an area outside this anticipated sphere of influence allowing for a degree of error.
- d. Accurate comprehensive maps that clearly mark the areas of investigation.
- e. A total water balance for the area under consideration (see Chapter 11).
- f. Maps with the creeks, springs, soaks, wetlands and peat areas clearly defined.
- g. Stream flow gauging stations on the major streams.
- h. Springs and wetlands that are directly connected to the aquifer being exploited.
- i. The lowest Australian Height Datum (AHD) level that the water table can be lowered to before the wetland(s) begin to dry out and the stream(s) stop flowing.
- j. The setting of cessation of pumping trigger levels at least one metre above this AHD level.
- k. An observation bore network that monitors all aquifer within the area of influence.
- l. Monitoring on a regular basis water levels, salinity, chemical and physical properties of the water in this observation bore network.
- m. Indication of the creeks, springs, soaks, wetlands and peat areas being monitored.
- n. Interim environmental flows for surface waters if none are currently allocated.
- o. The determination of an environmental flow regime based on at least sixteen terrestrial indicator species that includes a mix of 4 fish, 4 water invertebrates, 4 flora species and 4 benthic algae that are groundwater dependent. The knowledge gathered under point “t” would be an important component when determining an environmental flow for any of the streams, creeks or rivers.
- p. The identification, as indicators, of at least five fauna species that are found in the aquifer.
- q. Information on the occurrence and abundance of these species including their conservation status.
- r. An inventory of the habitat and biological needs of these species required to ensure their ecological survival.

- s. A plan for verification of the environmental flow five years after groundwater extraction commences.
- t. Inventories of all other species in the study area.
- u. Assessment of their status.
- v. Information on the occurrence and abundance of rare, threatened and endangered species.
- w. Lists of introduced species.
- x. An ecological monitoring program to be undertaken before, during and after any water extraction.
- y. Flora and fauna trigger indicator species that would be noticed early enough so that extraction rates could be modified to prevent any long-term environmental degradation.
- z. Clearly defined species studied that are partially and totally dependent on groundwater.
 - aa. Species most susceptible to change in the water regime of the area.
 - bb. Those species living with connectedness to water tables, springs, soaks and wetlands.
 - cc. A bore and ecological monitoring network specifically designed to monitor sites that have groundwater dependent species.
 - dd. Include seasonal and yearly fluctuations that have been collected over at least three years.
 - ee. All species described by scientific and common name(s).
 - ff. An investigate into the notion that small streams act as breeding grounds for biota that in turn are flushed into and replenish depleted stocks in larger creeks and rivers.

There is adequate time to put these practices into motion for any new groundwater extraction proposal.

The Barwon Downs groundwater extraction licence should not be left another 10 years before its antiquated conditions are reviewed in light of the suggestions above.

CHAPTER 10

Groundwater Dependent Ecosystems

This chapter discusses the ecosystems in the Boundary Creek and Loves Creek catchments that rely upon groundwater, with a particular emphasis on subterranean systems. Previous discussion on groundwater species can be found in “Otway Water” books.⁽¹⁸⁾⁽²³⁾⁽²⁵⁾ Some of the content from these books is repeated in this chapter.

Combined, the Boundary and Loves Creek catchments contain perched, sedimentary, limestone karst and volcanic karst aquifers. The depths of these aquifers range from shallow to hundreds of metres below the surface. Mentioning the range of aquifer types found in the area has been done to emphasise the complexity of the geology in the region and to highlight the diversity of species that could be associated with these aquifers .

Taken from a Humphreys article - Hydrogeology Journal 2008.⁽²⁹⁾

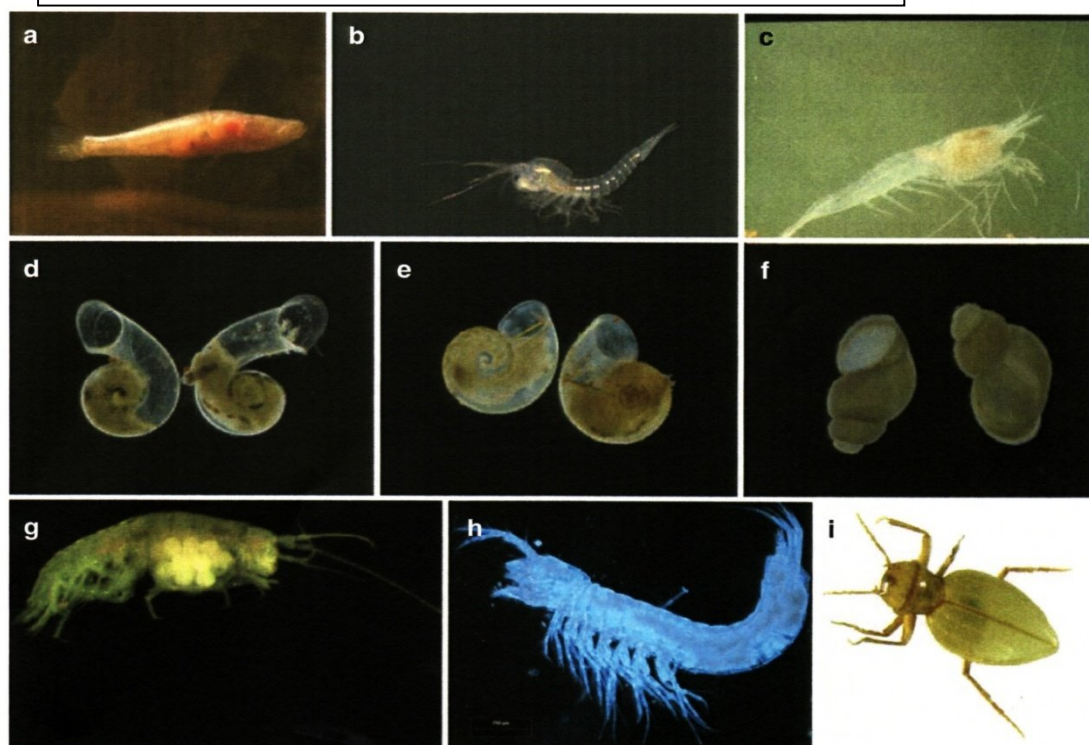


Fig. 2 Images of groundwater animals from Australia—indicative length mm—showing pale translucent bodies and absence of eyes, convergent characters in subterranean animals irrespective of taxonomic group. **a** Blind gudgeon, *Milyeringa veritas* (Eleotridae) - indicative lengths, 50 mm; **b** *Halosbaena tulki* (Thermosbaenacea), 3 mm; **c** *Stygiocaris stylifera* (Atyidae), 5 mm; **d-f** undescribed gastropods (Hydrobiidae), ca. 4 mm; **g** undescribed amphipod with eggs, 6 mm; **h** undescribed Bathynellacea, 1 mm; **i** *Nirripiri arachnoides* (Dytiscidae), 2.3 mm. Photos: **a-b** D. Elford, Western Australia (WA) Museum; **c-f** W. Humphreys, WA Museum; **g** E. Volschenk, WA Museum; **h** P. Hancock; **i** C. Watts

Lake⁽³¹⁾ 2003, makes the point that virtually all permanent residents in surface streams are dependent on groundwater, especially during drought when thermal and hydrological refuges typically are entirely sustained by groundwater.

Humphreys⁽²⁹⁾ also maintains that surface waters are the ultimate groundwater dependent ecosystems. These are an extremely important statements as they clearly demonstrates the notions that without groundwater flow, especially over summer in the Otways, surface water ecosystems

will be dramatically compromised and most likely disappear. Boundary Creek⁽¹⁵⁾⁽²⁵⁾ being a classic example of this happening.

It is very apparent that little to no consideration has been given to the subterranean ecosystems when developing and managing the Barwon Downs borefield. The same situation appeared to be taking place with the investigations planned to be conducted at the Kwarren borefield. In this day and age and considering the enormous leaps of knowledge made in regard to groundwater species, the fact that no provision has been made to determine the state of ecological systems in these aquifers is quite alarming.

Under the Statement of Obligations⁽⁵³⁾ as set down by the Victorian Government under the Water Act for Barwon Region Water Authority, this level of management and concern is no longer acceptable.

Implementing sustainable management practices as defined in this Statement of Obligations indicates that a great deal more care of the groundwater dependent ecosystems must be taken into consideration.

For example:

1. Comprehensive studies researching the species found in the groundwater – most definitely before groundwater is extracted.
2. Sensitive and practical triggers must be established. If such a trigger point is reached during pumping the operation must undergo specific changes.
3. Environmental flows must be established and legislated giving them legal standing to protect the surface and groundwater species.
4. Terrestrial indicator species that rely on groundwater flow into wetlands, springs or creeks should be identified e.g. platypus, fish, water invertebrates, flora and benthic algae.
5. Identify fauna indicator species found underground in the aquifer.
6. The status, occurrence, abundance and biological needs of these species to be identified.
7. A comprehensive analysis of the connectedness and dependence of these species to groundwater.
8. The importance of permanently saturated springs, soaks and wetlands to the survival of these species.
9. Trigger points of stress that would be exhibited by these species, trigger points that should not be exceeded.

Maintaining the integrity of the groundwater dependent ecosystems must be a major priority when determining if groundwater extraction is sustainable. Until it is accepted that aquifers are in fact ecosystems there will be little change to the recognition of their ecological importance.

Life forms may occur several kilometres below the earth's surface. Specialised invertebrates, and the occasional vertebrate, aquatic species occur to depths of at least 1000 m (Essafi et al.⁽¹⁴⁾ - Morocco and Longley⁽³⁷⁾ - Texas). In 2008 Humphreys⁽³⁰⁾ talks about the Australian subterranean aquatic life that continues to surprise through its diversity, composition, age and types of habitats and water quality in which it occurs. Australian stygofauna (groundwater animals) comprise amphipods, isopods, copepods, ostracods, bathynellaceans, gastropods, water mites, insects, fish and diverse microbial communities. Boulton et al.⁽⁴⁾ (2008) states that by analogy with surface ecosystems this fauna has numerous potential functional roles in groundwater systems. Recently these groundwater ecosystems have been recognised as dynamic systems comparable in complexity to surface

ecosystems. However, in most cases the stygofauna typically lack resting stages, are slow moving, have few young, are long lived when compared to surface water relatives, often have sparse populations; require low levels of energy, dissolved oxygen and organic matter; are vulnerable to change and are a significant issue for biodiversity conservation.

Following are quotes that water managers need to seriously consider when planning exploitation of water resources.

“... the species inhabiting subterranean ecosystems are often considered intrinsically vulnerable to anthropogenic (human) effects...” (Humphreys⁽³⁰⁾).

“Knowledge of stygofauna of Australia is increasing at such a rate that any estimate of the biodiversity it contains is premature.” (Humphreys⁽³⁰⁾).

“However, it is already apparent that Australia contains a stygofauna of global significance.” (Humphreys⁽³⁰⁾).

“At a very conservative estimate at least 750 species have been recorded from Australia, mostly in the last 10 years.” (Humphreys⁽³⁰⁾).

What is surprising is that very few regional areas in Australia have been surveyed for stygofauna and most definitely no work has been conducted in the region of the Otway Ranges being discussed in this chapter. Humphreys argues that there needs to be research into the wealth of biodiversity, the ecological processes involved and the benefits these processes provide.

In 2008 Boulton et al.⁽⁴⁾ discusses the human appropriation of Earth’s natural resources and the detrimental impacts this can have on biodiversity. Boulton et al. also emphasises that...

- Humans cannot afford to lose this biodiversity that forms part of essential resources that provide the stability of our life-support system: organic matter decomposition, water purification, providing food, toxin and waste material breakdown, oxygen, medical products and other fundamental human requirements.
- The role groundwater ecosystems play in this process is poorly understood and still has relatively little research being conducted.
- Our understanding of how groundwater invertebrates influence ecosystem services is almost non-existent.
- Previously regarded as lifeless, aquifer water is now being recognised to support diverse assemblages of stygofauna.
- Any change to an aquifer system has the potential to bring about complex changes in the interaction and functional characteristics of the aquifer in relation to the stygofauna.

Humphreys⁽³¹⁾ draws an analogy with surface ecosystems whereby invertebrates also have numerous potential functional roles in the groundwater systems.

Some of these roles include:

- the maintenance of voids
- enhancing the release of organic carbon
- the cycling of nutrients
- promotion of biofilm activity
- improved hydraulic flow paths
- the provision of favourable sites for microbial activity, and
- movement and mass transfer of energy and materials through the sediments.

The most obvious effect of groundwater extraction is the lowering of the groundwater table levels. The implications from lowering the water table may seem obvious but Boulton et al.⁽⁵⁾ state that this is not as simple as saying the groundwater species die out. In the Barwon Downs borefield scenario the drawdown of the groundwater is further complicated by the production of acid and the production of toxic levels of heavy metals as the wetlands dry out and re-wet. This mix is then sucked into the depleted aquifer causing untold damage.

In an article written up in the same Hydrogeological Journal Humphreys⁽²⁹⁾ makes these very interesting comment...

- The relationship between ecology and hydrology is well recognised and much explored and has even been defined as “ecohydrology.”
- Even with this recognition and the realisation that groundwater ecosystems may provide significant environmental benefits there has been sparse consideration of the effect of withdrawals on groundwater ecosystems.
- This is partly because those people utilising the groundwater are largely unaware of the ecological complexity, biodiversity and local endemism of the groundwater ecosystems.
- Little recognition is given to the relationship between environmental flows and groundwater ecosystems.
- Groundwater species are increasingly recognised as being under threat of extinction.
- In the Kolbental Valley, Germany, changes in groundwater fauna were found to be the best indicators of the effects of groundwater pumping on the surface groundwater dependent ecosystems.
- Groundwater fauna is commonly white, lack eyes, and are often worm shaped.
- Groundwater fauna have three fundamental requirements – a place to live, energy and oxygen or other electron acceptor.
- Hydrogeologists often have control over these fundamentals and therefore their management practices have implications for groundwater ecosystems.
- Groundwater fauna are mostly restricted to the upper parts of subterranean ecosystems.
- There has been almost no study of the impacts of water extraction on aquifer ecosystems.
- There are indications from surface studies that suggest that pumping effects are likely to be profound and complex.
- *“It is hoped that this article will help overcome the general lack of knowledge amongst Hydrogeologists of the presence, ubiquity and nature of groundwater ecosystems in a broader context.”*

CONCLUSION

There has been little explicit recognition of the way groundwater influences riverine biota or processes; how ecological dependency varies and as a result, how management practices can be inappropriate, Boulton et al.⁽⁵⁾ A sound understanding of the flora and fauna present, the ecological processes taking place, what the triggers and requirements of these processes are, is essential for effective management of sustainable use of any water resource. On a catchment scale the hydrological, physical, chemical and biological attributes of the groundwater can influence the biota and ecosystem processes in diverse and complex ways. Sensitive high quality planning, design and management of groundwater extraction must involve a holistic multi discipline approach. Such an approach would include a total water balance plan (see Chapter 11), a sociologist, zoologist, botanist, microbiologist, geomorphologist, chemist, anthropologist, economist, hydrologist, Hydrogeologist, landholders and as this chapter amply points out a specialist in stygofauna.

CHAPTER 11

Loves Creek Catchment Total Water Balance Plan & Social Studies

The Landcare Group, LAWROC, prepared a draft Total Water Balance Plan for the Loves Creek Catchment.

The remainder of this Chapter except the conclusion on page 95, contains direct extracts from various sections of this plan.

Why Have A Plan?

A quality total catchment water balance has never been done on the Loves Creek Catchment. This is critical as a water balance encompasses all of the factors influencing the water regime and goes some way to determining the availability of any free resource. These factors would include rainfall, runoff, stream flow, groundwater recharge, groundwater extraction, loss of groundwater to other catchments, stock, domestic, urban and licensed use of water, evapotranspiration (*“water lost through the combined effects of evaporation from the ground surface and transpiration from the vegetation”* – Evans⁽¹⁵⁾), farm dams, effluent from homes and agriculture, climate change and any other factor influencing the water resource within the Catchment. It is extremely difficult to sustainably manage a resource if the contributing factors influencing the resource are only partly understood. Many of these factors are canvassed when compiling a total catchment water balance. To compile a total catchment water balance requires a start being made. This Plan is that start.

In 2007, Evans⁽¹⁵⁾ in a technical report “The Impact of Groundwater Use on Australia’s Rivers” refers to total catchment water balance. He points out that *“...frequently the water balance is almost never ‘closed’ (i.e. all things considered) and major assumptions are made about key components of it.”* In most cases the complete or ‘closed’ data is not collected. Evans calls for *“...quality total catchment water balances.”* As previously stated this Plan does not pretend to be such a quality study but is a start which is far and beyond any other study attempted in this Catchment.

In any form of management critical decisions and successful outcomes can only be made if the managers have an adequate data base on which to make informed decisions. In regard to water allocation and use, the development and compiling of a quality total catchment water balance is crucial.

AIM of the PLAN

This plan aims at maintaining a sustainable use of the groundwater and surface water resources of the Loves Creek Catchment.

SUSTAINABILITY

The definition of sustainability used in this document is as follows...

“Surface and groundwater resource utilisation that protects, social, economic and environmental values.”

The principles on which this definition has been based can be found in the Statement of Obligations set down for Barwon Water, by the State Government in 2007.

In this Statement of Obligations⁽⁵³⁾ “Sustainable Management Principles” include the following...

- ❑ The need to ensure that water resources are conserved and properly managed for sustainable use and for the benefit of present and future generations, and
- ❑ The need to encourage and facilitate community involvement in the making and implementation of arrangements relating to the use, conservation and management of water resources; and
- ❑ The need to integrate both long-term and short-term economic, environmental, social and equitable considerations; and
- ❑ The need for the conservation of biological diversity and ecological integrity to be a fundamental consideration; and
- ❑ If there are threats of serious or irreversible environmental damage, lack of full scientific certainty as to measures to address the threat should not be used as a reason for postponing such measures.

This Total Catchment Water Balance Plan has been developed with State Government policy foremost in the minds of the stakeholders of the Loves Creek Catchment. These policies include...

- the Government’s recognition that the environment has often been overlooked and not given adequate consideration,
- preservation of wetlands,
- maintenance of healthy streams,
- improving of degraded waterways,
- protection of groundwater from over exploitation,
- precautionary principles where there are threats of serious or irreversible environmental damage,

- intergenerational equity where the present generation ensures that the health, diversity and productivity of the environment is maintained or enhanced for the benefit of future generations,
- that obligation that groundwater managers must ensure that their activities do not pose an environmental risk to surface water beneficial uses (Vic. Gov. Gazette S107 June 2003),
- the obligation that catchment activities should not pose an environmental risk to groundwater beneficial uses (Vic. Gov. Gazette S107 June 2003),
- the management of water to be based on an understanding that a healthy economic society is dependent on a healthy environment,
- the water sector will be capable, innovative and accountable to the Victorian community,
- the requirement that surface and groundwater resources are not over allocated,
- the requirement for review and adjustment in the event any over allocation of resources.

BENEFICIAL USES

The following list of Beneficial Uses has been determined by the State Government.

- Potable Water
- Potable Mineral Water
- Irrigation
- Stock Water
- Domestic Water
- Industry
- Agriculture
- Buildings and Structures
- Primary Contact Recreation
- Ecosystem Protection – both surface and subterranean

ENVIRONMENTAL FLOWS

The definition of an environmental flow used in this document is,

“... a flow that will maintain and where possible enhance species diversity and populations of aquatic life.”

TOTAL CATCHMENT WATER BALANCE

The following breakdown of a total catchment water balance has been adopted from Evans.⁽¹⁵⁾

Water stored in the catchment

- Farm dams off stream
- Dams on-stream
- Aquifer(s)
- Saturated soils
- Soils in the unsaturated zone

- Stream channels

Inflow into the catchment

- Rainfall
- Returns from consumptive users (homes/agriculture etc.)

Internal Interchange

- Rainfall to surface water
- Surface water to soil – unsaturated zone
- Rainfall to soil
- Extraction for consumptive use-household/agricultural
- Return from consumptive use

Outflow

- Evapotranspiration from soils and aquifers
- Evapotranspiration from surface waters
- Transpiration from vegetation
- Consumptive use within the catchment
- Consumptive use outside the catchment
- Surface flow out of the catchment
- Aquifer flow out of the catchment.

CONCLUSION

There can be little doubt that on the data so far collected, both the surface and ground waters are at the very best fully allocated and at the worst over allocated. Water use within the Catchment is considerably higher than ascertained in this Plan, given the conservative nature by which the consumption figures were calculated. The only possibility for any additional licence is for winter extraction from streams during high flow periods. And then the water must be stored in off stream storages. However, this will impact on Beneficial Uses downstream of the Loves Creek Catchment and appropriate considerations made. Loss to adjoining catchments through groundwater borefields outside the Loves Creek Catchment is a serious threat to the security of the flows in the Loves Creek Catchment streams. This insidious draining from aquifers within this Catchment requires close scrutiny.

Considering the reliance on groundwater flows to maintain **wetland integrity** and **summer stream flow** there is an extremely compelling case for no groundwater extraction within the Catchment **OR** from adjoining catchment borefields that impact on this Catchment.

There are numerous tasks that require attention to ensure that the integrity of the Loves Creek Catchment is maintained and where possible improved. If implemented, the following recommendations would be a step in this direction.

Recommendations for Future Action

1. Allow no further allocation of surface or groundwater in the Loves Creek Catchment.
2. Continue with the data collecting through personal visits with the intention of involving as many residents in the Loves Creek Catchment as is practical.

3. Investigate the feasibility and desirability to involve Beneficial Uses recipients from outside the catchment.
4. Continue attempts to involve Government authorities with catchment and natural water resource responsibilities.
5. While facilitating a better working relationship with regulatory bodies that influence matters within the Catchment, aim at creating *“a necessary reality check and knowledge base so that relevant ministers and other department officials can have confidence in its advice.”* (Bobbie Brazil – Chairman Landcare Council 2008)
6. Lobby the “authorities” to instigate a government funded Total Water Balance audit of the Loves Creek Catchment.
7. Conduct detailed long term studies to include both field and “desk top” information gathering on flora, birds, mammals, reptiles, amphibians, fish and freshwater macro invertebrates from the terrestrial ecosystems and the flora and fauna from the both the surface and groundwater ecosystems.

Include the following studies...

- A. Determine an environmental flow regime for at least sixteen terrestrial indicator species that includes a mix of 4 fish, 4 water invertebrates, 4 flora species and 4 benthic algae that are groundwater dependent.
- B. Identify at least 5 fauna species that are found in the aquifer as indicators of the aquifer health.
- C. Determine the occurrence and abundance of these species including their conservation status.
- D. Compile an inventory of the habitat and biological needs of these species required to ensure their ecological survival.
- E. Plan for verification of the environmental flow requirements of these species 5 years hence.
- F. Collect inventories of all other species in the study area.
- G. Assess the status of all species.
- H. Compile detailed information on the occurrence and abundance of rare, threatened and endangered species.
- I. record introduced species found in the wild.
- J. A report on the effects of human extraction of water resources from the catchment that has an influence on the environmental values of the area.
- K. Define those species studied that are partially and totally dependent on groundwater.
- L. Note the species most susceptible to change in the water regime of the area.
- M. Determine and note those species living with connectedness to water tables, springs, soaks and wetlands
- N. Set up a bore monitoring network specifically designed to monitor sites that have groundwater dependent species.
- O. Develop and provide accurate comprehensive maps that clearly mark the areas of investigation.

- P. Note on these maps the creeks, springs, soaks, wetlands and peat areas.
- Q. Indicate the creeks, springs, soaks, wetlands and peat areas being monitored.
- R. Collect data that includes seasonal and yearly fluctuations.
- S. Describe all species by scientific and common name(s).
- T. Investigate the notion that small streams act as breeding grounds for biota that in turn are flushed into and replenish depleted stocks in larger creeks and rivers.
- U. Investigate the relevance to the Loves Creek catchment of this statement made by Evans⁽¹⁵⁾ that *“...most river systems in Australia are nitrogen limited, i.e. their ecological health is controlled by the availability of nutrients. Surface water is typically nutrient poor while groundwater may often be nutrient rich. Hence, the discharge of groundwater into rivers is often controlling the health of their ecology.”*

An attempt to begin some of this work as outlined in point 7, has already been initiated. However, the need for closer scrutiny, scientific vigour and thoroughness will need to be applied.

- 8. Provide fish ladders at the Ten Mile, Porcupine and the Yahoo Creek stream flow gauging stations.
- 9. Survey the catchment for Potential Acid Sulfate Soils. This could be done when completing a comprehensive audit of springs and wetlands in the catchment as in point 7.P above.
- 10. Continue the work of fencing off stream frontages.
- 11. Endeavour to replace exotic species of vegetation in these stream side frontages with native species.
- 12. Facilitate environmentally friendly stock access to water resources.
- 13. Instigate a study aimed at ascertaining the influence and effects on the Loves Creek Catchment from drawdown influences by the Barwon Downs borefield extractions.
- 14. Develop a framework of accountability that is equitable to all Beneficial Uses. Up to this point the local landholder is easily held accountable for actions taken. There are sufficient regulations and authorities to enforce best practice. However, the same cannot be said for the authorities themselves. For example 6 megalitres of toxic polluted water was illegally extracted from the Kawarren borefield and released into the Loves Creek Catchment and the authority involved was not held accountable. If this same breach of the law had been done by a landholder the consequences would have been handled differently. Authorities and individuals have to be held accountable, abide by the law of the land and suffer the same retribution when the law is breached.
- 15. FUTURE PLANS to include LOCAL CONSULTATION. Any persons or authority making application to vary the water resource management within the Loves Creek Catchment is to consult with LAWROC or at the very least a significant number of residents in the Catchment. This would include such catchment management issues as riparian vegetation, river frontage management, fish stocking, salinity, weed control, spraying, willow removal and water resource allocation.

16. STREAM FLOW GAUGING STATIONS. Stations on Ten Mile Creek (235239), Porcupine Creek (235241), Yahoo Creek (235240) and Loves Creek (235234) should be maintained and kept in commission. The Porcupine, Ten Mile and Yahoo Creek stations were decommissioned in the mid 1990s. The Ten Mile and Porcupine Creek stations were recommissioned in 2008 in an ad hoc fashion. These stream flow measuring stations are vital data collecting points and must be calibrated and maintained, especially if accurate data is required in the future. Because of the low flow rates in these streams it is not adequate to “infill” missing data through extrapolation.
17. TRIGGER LEVELS. The above mentioned stream flow gauging stations should have trigger levels established. When reached landholders above the station should be notified and every possible attempt should be made to restrict water extraction to an absolute minimum. The only extraction past this point would be judicious use for stock and domestic.
18. DISPUTE RESOLUTION. Any disputes will be resolved in accordance with the Water Act 1989, Southern Rural Water policy and any other relevant Government policy.
19. REPORTING. Southern Rural Water to provide a yearly report on...
 - a. The full record of compliance to issued licences.
 - b. The annual amount of water diverted from the Loves creek catchment by entitled licence holders.
 - c. Any failures to comply with any licence conditions.
 - d. Actions taken with failures to comply with licence conditions.
 - e. Any significant amendments to any licence condition.
 - f. Any transfer of water from the Catchment including the place of origin and the destination.
 - g. Any water sales made from or within the Catchment.

Conclusion.

This total water balance document prepared by the LAWROC Lancare Group is the first known study to be conducted in Victoria. Even though it has been prepared without Government Authorities’ assistance it clearly demonstrates that a total water balance is critical to appropriate and sustainable management of ground and surface water resources.

The heading for this Chapter includes the words social studies and the reader will correctly note that there has been no mention of this anywhere in this entire book. The reason for this is quite simple. There are no reports or studies to comment on. The fact that there has never been any social study mentioned, suggested, let alone conducted on this subject in relation to ground and or surface water exploitation, highlights the emphasis placed on the hydrology to the exclusion of other important areas of investigation. Hopefully future water extraction investigations will include impact implications for communities.

CHAPTER 12

Efforts to Gain a Daily Summer Environmental Flow Allocated to Streams in the Loves creek Catchment.

One can only conclude that up to this stage all efforts to gain a meaningful environmental flow for any river or stream in the Gellibrand Catchment has been met with obfuscation- that is, attempts to bewilder, to confuse, to darken, to obscure and to stupefy efforts in the hope that demands being made on the State Government to implement Government policy will eventually dwindle and cease to be made. Despite decades of recommendations State Governments of Victoria have failed to legalise sufficient environmental water to be let flow in the Gellibrand River or any of its catchment creeks.

This Chapter comments on and presents a brief summary of efforts to provide a legally binding environmental flow component to daily summer flows in the Gellibrand River Catchment but more specifically the Loves Creek Catchment.

Rivers and streams of the Otway Ranges that continue to flow through the driest of summers and longest of droughts gain the bulk of their flows by way of discharge from aquifers. To protect the flows in rivers and streams the aquifers supplying them have to be protected as well. Over exploit the groundwater and or surface water resources and the catchments begin to dry out.

The Gellibrand River system as a whole is a major recreational and tourist destination; a constant supplier of stock and domestic water for rural landholders and a reliable supplier of urban water needs for much of the Western District of Victoria. The Loves Creek Catchment, one of many tributary catchments of the Gellibrand River system, is a vital sanctuary, nursery and breeding ground for a multitude of biota playing an important role replenishing Gellibrand River stocks. The importance of healthy rivers and creeks cannot be over emphasised and is recognised in numerous State Government authority documents and policy. Unfortunately words and “motherhood” statements are a poor substitute for implemented actualities.

Recommendations made for the implementation of Environmental flows.

- 1988 Tunbridge, B. R., Environmental Flows & Fish Populations of Water in the South-Western Region of Victoria. Technical Report Series Number 65. Arthur Rylah Institute For Environmental Research.
- 1988 Tunbridge, B. R., Glenane, T. J. A Study of Environmental Flows Necessary to Maintain Fish populations in the Gellibrand River and Estuary. Technical report Series Number 25 – Arthur Rylah Institute For Environmental Research.
- 1989 Natural Resources and Environment Committee(NREC), Parliament of Victoria. November 1989. Inquiry into Water Resources Management in Victoria South-Western Region Water Management Strategy. No. 83. Government Printer, Melbourne.
- 1994 Richards K., Rankin T. A., Butcher R. J., Sept. 1994: Biological Monitoring of the Gellibrand River Catchment. Interim Report. State Water Lab of Vic.

- 1995 Zampatti B. and McGuckin J. 1995: Fish Populations and Environmental Flows in the Gellibrand River. Water Ecoscience Pty. Ltd., Mt. Waverley, Victoria. WES Report No.:42/95
- 1996 Zampatti B., Bradshaw E. and Lewis K. 1996: Fish Populations and Environmental Flows in the Gellibrand River and Love Creek South Western Victoria. Water Ecoscience Pty. Ltd., Mt. Waverley, Victoria. WES Report No. 100/96
- 1997 Tunbridge, B. Environmental Flow Recommendations for the Gellibrand River South-Western Victoria. Ecosystem Conservation Program. Flora and Fauna. Department of Natural Resources and Environment, Victoria.
- 1998 Cameron A., and Vertessy D., February 1998: Biological Monitoring in the Gellibrand River Catchment. Report Prepared for Department of Natural Resources and Environment and Southern Rural Water. Water Ecoscience Pty. Ltd., Mt. Waverley, Victoria. WES Report No, 195/98.
- 2005 Corangamite Catchment Management Authority, August 2005 Assessment of Environmental Flow Requirements for the Gellibrand River. Site Paper, Revision C. Earth Tech Natural Resources Group – Melbourne, Victoria.
- 2006 Corangamite Catchment Management Authority, February 2006: Assessment of Environmental Flow Requirements for the Gellibrand River. Issues Paper, Revision F. Earth Tech Natural Resources Group – Melbourne, Victoria.
- Corangamite Catchment Management Authority, July 2006: Assessment of Environmental Flow Requirements for the Gellibrand River. Recommendations, Revision E. Earth Tech Natural Resources Group – Melbourne, Victoria.
- 2006-07 The Corangamite Catchment Authority had been approached on at least two occasions in an attempt to establish whether any of the environmental flow recommendations had been allocated to the Gellibrand River or any of its feeder creeks.

After much discussion and probing none of the statutory authorities responsible for the environment seemed to be able to determine whether any environmental flow had ever been allocated to the Gellibrand River or any of its feeder creeks. On 4 February 2007 in an attempt to find an answer to the environmental flow status and other questions that were difficult to obtain an answer to, local Member for Polwarth, Terry Mulder, was asked to assist. As there had been no reply by September a copy of the February letter was hand delivered to Terry Mulder's Colac office (see below).

*Mr. Terry Mulder (MLA)
Member for Polwarth
115A Bromfield Street
Colac
Vic 3250*

*From:
Malcolm Gardiner
1805 Colac Beech Forest Road
Kawarren
Vic 3249
Email otwaywater@yahoo.com.au
4-02-2007 (Copy dropped into Terry's office-Colac 11-09-2007)*

*Dear Terry,
I would really appreciate the following information if you could see your way to asking Mr. Thwaites for it.*

A. In regard to

Bulk Entitlement (Colac) Amendment Order 2003

Gazette No. G45

Gazette Page 2814

Gazette Date 11-06-2003, as signed off by John Thwaites on the 10th of Oct. 2003.

Request the following information:

- 1. Under point 4 who is the "Resource Manager" or managers.*
- 2. Under point 10, a copy of the program or programs that have been proposed by the Authority, that sets out the program to manage the environmental effects.*
- 3. Under points 6 and 7 records of the passing flows for the Olangolah Weir and the West Gellibrand Dam when the flows have been 1 ML/day(Weir) and 5 ML/day(Dam) or below during the summer of 2005-2006.*

B. In regard to the provision of environmental flows that have actually been gazetted, granted, or provided for:

- 1. the Barwon River and any of its tributaries west of the Wurdee Boluc Reservoir,*
- 2. the Gellibrand River and any of its tributaries above the confluence of the Carlise River, and*
- 3. the Barongarook Creek and any of its tributaries.*

(Not recommendations - actual environmental flows)

C. In regard to the above mentioned river and creek systems and localities, the titles of any management plans for the wetlands, water bodies or river frontages as referred to in the Natural Resource and Environment Committee's 1989 Recommendation Number 4.

When Minister Thwaites resigned and Tim Holding took over the Water portfolio, rather than pursue answers through a second party, a direct approach to Minister Holding was made in the slim hope

that such a letter to the Minister may prompt a speedier reply. A registered letter was sent to Minister Holding specifically targeting environmental flows.

*Mr. Tim Holding (MP)
Minister For Water
Level 26
121 Exhibition Street
Melbourne 3000*

Registered Post RD 49128108

Dear Sir,

RE: Environmental Water Reserves.

As you may be aware from numerous studies completed over the last 20 odd years there have been a variety of recommendations for environmental flows for the Gellibrand River in the Otways.

Interestingly enough not one of these environmental flows has been allocated. In fact it would appear doubtful that there will ever be a time when finalisation of the environmental requirements for the Gellibrand River or any other creek east of the Gellibrand township will be achieved and an appropriate environmental water allocation made.

The Corangamite Catchment Management Authority have just completed another study (2006) and in this very same document it states "... it is recommended that additional and more comprehensive analysis of the system be undertaken prior to finalisation of the environmental water requirements for the Gellibrand River."

For the last 25 years Victorian Governments have been advocating a legal share of water for the environment to safeguard the health of Victoria's river and groundwater systems. The Gellibrand carries the best fish populations of River Blackfish of any river in Victoria. The percentage of large River Blackfish are by far the best in the State. Loves Creek has comparable River Blackfish status and also has significant fish assemblages and is unique to the Otways. The river and streams in this location have a high diversity of macro invertebrates

The Water Bill of 1989 and its amendments include the means to achieve the goal and vision of safeguarding these waterways in the Otways.

To maintain the integrity of the stream and river ecosystems and environment in the Kawarren and Gellibrand township areas, I request that you Government Gazette the following Environmental Water Reserves (EWR).

- 1. A minimum EWR flow of groundwater discharge from the Gellibrand Groundwater Management Area aquifer of one mega litre a day into the Ten*

- Mile Creek as a discharge stream flow at the decommissioned stream flow gauging station Number 235239.*
- 2. A minimum EWR flow of groundwater discharge from the Gellibrand Groundwater Management Area aquifer of eight tenths of a mega litres a day into the Yahoo Creek as a discharge stream flow at the decommissioned stream flow gauging station Number 235240.*
 - 3. A minimum EWR flow of groundwater discharge from the Gellibrand Groundwater Management Area aquifer that ensures a two mega litres a day flow past the Loves Creek stream flow gauging station Number 235234.*
 - 4. A minimum EWR flow of groundwater discharge from the Gellibrand Groundwater Management Area aquifer of two tenths of a mega litres a day into the Porcupine Creek as a discharge stream flow at the decommissioned stream flow gauging station Number 235241.*
 - 5. A minimum EWR flow that ensures a twenty five mega litres a day flow past the Bunkers Hill stream flow gauging station Number 235227.*

Over two years have passed and there has been no reply to this particular letter. However, 12 months after asking Terry Mulder to approach the Minister, Terry received a reply (see next page).



Minister for Water

Our Ref: DSE045750
File: CS/21/0366

121 Exhibition Street
Melbourne, Victoria 3000
GPO Box 4509
Melbourne, Victoria 3001
Telephone: (03) 8684 8000
Facsimile: (03) 8684 8014

Mr Terry Mulder MLA
Member for Polwarth
115A Bromfield Street
COLAC VIC 3250

01 FEB 2008

Dear Mr Mulder

BULK ENTITLEMENT (COLAC) AMENDMENT ORDER 2003 AND GAZETTE NO. G45

I refer to your letter of 13 September 2007 on behalf of your constituent, Mr Malcolm Gardiner regarding the Bulk Entitlement (Colac) Amendment Order 2003.

In response to his questions, the 'resource manager' in point 4 is the Department of Sustainability and Environment, and the proposed program to manage environmental effects under point 10 is attached.

With regard to records of passing flows for the Olangolah Weir and the West Gellibrand Dam during the summer of 2005/06, monitoring stations were only established in the 2006/07 financial year. As such, no physical records exist for the period of Mr Gardiner's request.

With regard to the provision of environmental flows that have been gazetted, granted or provided, Barwon Water has reported compliance with all the passing flow obligations for the Barwon River and its tributaries in 2005/06, except for some minor non-compliance events experienced infrequently at Pennyroyal Creek and Mathews Creek.

As for the Gellibrand River and its tributaries, Barwon Water and Wannon Water reported that all passing flow requirements under their bulk entitlements in the Otway Basin were met in 2005/06. Further, there are no passing flow requirements on Barongarook Creek.



Details on compliance with environmental flow requirements in 2005/06 are contained in the *State Water Report*, which is available on the Department's website, www.dse.vic.gov.au.

Finally, the *Corangamite Regional River Health Strategy* is the management plan for the wetlands, water bodies or river frontages referred to in the Natural Resources and Environment Committee's 1989 Recommendation no 4.

Yours sincerely

TIM HOLDING MP
Minister for Water



Privacy Statement
Any personal information about you or a third party in your correspondence will be protected under the provisions of the *Information Privacy Act 2000*. It will only be used or disclosed to appropriate Ministerial, Statutory Authority, or departmental staff in regard to the purpose for which it was provided, unless required or authorised by law. Enquiries about access to information about you held by the Department should be directed to the Manager Privacy, Department of Sustainability & Environment, PO Box 500, East Melbourne, 3002.

Passing flows are not environmental flows and Wannon Water can, if need be pump the Gellibrand River dry at both the North and South extraction points. When the Gellibrand River flow drops below 12 ML/day passing flows do not have to be allowed to pass. In short, Mr. Holding's letter confirms that there have not been any gazetted, granted or provided environmental flows for the Gellibrand River or any of its feeder creeks.

Not to be deterred by the years of inaction by those statutory authorities given the responsibility to look after, maintain and if at all possible improve the health of our river and creek systems, another avenue of endeavour was pursued.

On the 25-03-2008 the following letter was sent .

*Mick Fennessy
Manager ,Licensing Administration – West
Southern Rural Water
132 Fairy Street
Warrnambool
Vic 3280*

Sender Number CV7234498

*Dear Mick,
This document is an application for a take and use licence for the allocation of a daily environmental water reserve from aquifer sources for the creeks of Yahoo, Ten Mile and the Porcupine.*

The water applied for under this application will be taken from the aquifer that feeds the creeks Ten Mile, Yahoo and Procupine, (should be spelt Porcupine) and used to supply them with a summer environmental flow.

The daily groundwater allocation for each of these creeks being applied for are as follows:

- A minimum EWR flow of groundwater discharge from the Gellibrand Groundwater Management Area aquifer of one mega litre a day into Ten Mile Creek as a discharge stream flow at the decommissioned stream flow gauging station Number 235239.*
- A minimum EWR flow of groundwater discharge from the Gellibrand Groundwater Management Area aquifer of 500 000 litres a day into Yahoo Creek as a discharge stream flow at the decommissioned stream flow gauging station Number 235240.*
- A minimum EWR flow of groundwater discharge from the Gellibrand Groundwater Management Area aquifer of 130 000 litres a day into Porcupine Creek as a discharge stream flow at the decommissioned stream flow gauging station Number 235241.*

I would like to point out that the Water Bill of 1989 has referred to the importance of allocating environmental water for over 17 years and none of the Responsible Agencies have ensured that any allocations have been made for these creeks. This is also the case for the Gellibrand River. I believe there has been more than ample time for these allocations to be made. Considering there have been numerous recommendations for environmental flows BUT no allocations made, is deplorable.

It may be argued by some that the Environment Water Reserve (EWR) for the Gellibrand has made such a provision. However, an EWR that flows into the sea during the winter months and none of it being available during the period of most need, the summer, is absolute nonsense. To pursue this argument and try to maintain that it is indeed a Reserve of water to maintain the summer integrity of the Gellibrand River would be beyond belief.

The Water Bill is explicit when it states that the objective of an EWR is a reserve of water that will maintain and preserve the environmental values and health of water ecosystems, including their biodiversity, ecological functioning and quality of water and other uses that depend on environmental condition.⁽²⁾

(The number in the brackets denote the page reference used from the Water (Resource Management) Act 2005. 551317B.12-6/10/2005 Bill La Circulation 6/10/2005.)

The reason for this application is embodied in the Water Act of 1989. The ERWs being applied for are an attempt to protect Ten Mile, Yahoo and the Porcupine Creeks and their supply of continuous water from the aquifer(s). Needless to say it is also designed to protect the environment in the area, including the riverine and riparian environment. The Victorian State Government maintains a proactive stance of preserving healthy water dependent ecosystems and enhancing degraded ones. This application is in complete harmony with State Government Policy.

I implore you to accept this application and grant the above mentioned take and use licence for Environmental Water Reserves.

A reminder was sent to Mick 30 May 2008. A letter arrived in due course dated the 15 July 2008 and the section relating to the Environmental Water Reserve application of this letter, had the following comments.

“With respect to your enquiry regarding the Environmental water Reserve for the waterways in the Kawarren area in particular the Yahoo Creek, 10 Mile Creek and Porcupine Creek.

I have determined that this is not a matter that is regulated or applied by Southern Rural Water and that it is a matter best dealt with by the Corangamite Catchment Management Authority.

I have referred the matter o (assume this is meant to be “to”) them for a response and suggested that they communicate direct to you rather than via SRW.”

An email including a copy of the application sent to Mick Fennessy dated 25 March 2008, was sent to the Corangamite Catchment Management Authority (CCMA) on the 18 July 2008. This letter pointed out that Mick Fennessy of Southern Rural Water had determined that this application would best be dealt with by the CCMA.

A reply by email from the CCMA arrived dated 1 August 2008 and had this to say:

*“Thank you for your email dated Friday 18 July 2008 regarding setting a daily environmental water reserve (EWR) for Yahoo, Ten Mile and Porcupine Creeks. I have discussed your letter with staff, however we are somewhat confused in respect to the points made and what outcomes you are seeking. In order to clarify the above could I ask that you arrange a visit to the office... at your convenience. I will ensure that the appropriate staff are present.
Regards,
Don Forsythyh.”*

A meeting was arranged for 19 August 2008 at the CCMA offices in Colac. A “blurb” was prepared as a handout at this meeting. Boundary Creek was used as an example of what can happen when no environmental flow is allocated. At this stage the development of a borefield at Kawarren was a

distinct possibility and was the primary reason to see that environmental flows were in place before exploitation took hold of the project. If past experience was any indication outcomes would state that the environment had been considered but unfortunately that is as far as it would go – no environmental flows would be allocated. The following pages 104-106 contain an exert from this “blurb.”

ALLOCATION OF A DAILY ENVIRONMENTAL FLOW

or

A DAILY ENVIRONMENTAL WATER RESERVE.

19-08-2008

Discussion With CCMA.

(Ron Anstis & Mal Gardiner.)

Introduction

The daily summer environmental flows required to maintain the ecosystems in the Loves Creek catchment amounts to a figure between 1.2 ML/day to zero in Loves Creek at the Loves Creek stream flow gauging station. The requirements are miniscule in the overall scheme of water that flows in the Otways. Considering that it has already been established that pumping groundwater from the Kawarren aquifer can dry up these creeks/wetlands (see crit sent for CCMA comment 12-12-2007), and with extended pumping it has been calculated that the flow in the Gellibrand River can be reduced from between 10 and 28%, it seems unbelievable that any thought of pumping from Kawarren would be entertained. For Barwon Water to be looking at the feasibility of extracting 16 GL/year (see crit sent for CCMA comment 20-12-2007) when early reports state that the estimated aquifer flow through into the Gellibrand River is only 2000 ML/year, further compounds the astonishment that any pumping could even be contemplated.

Because of the requirement of such a small amount of daily summer environmental water needed in the creeks of the Loves Creek catchment, the delicate balance can easily be upset by the smallest amount of groundwater extraction at Kawarren.

Barwon Water’s motivation to pump at Kawarren is the extraction of potable groundwater. The lack of environmental consideration by Barwon Water is most apparent when the circumstances of the illegal 48 hour test pump in July 2007 at the Kawarren borefield, are taken into consideration. Not to mention the poor environmental record of Barwon Water activities in the Boundary Creek catchment.

It would appear that there is a convincing case of Actual Acid Sulfate Soils occurring along Boundary Creek.

Some regulatory body, protection agency or the Corangamite Catchment Management Authority has to make a stand on the Kawarren groundwater extraction investigation on behalf of the catchment. This stand needs to be taken without fear nor favour.

- **Recommendation 4, 1989 NREC –establish environmental flows.**
- **Recommendation 47, 1989 NREC –minimum environmental flows be allocated.**

CCMA WORDS IN 2002

October 2002 the CCMA submitted a paper on the Renewal of the Barwon Water Groundwater Licence. In the introduction this was stated “The CCMA’s core responsibility is to ensure the protection and sustainable development of land, vegetation and water resources within the Corangamite region. This submission will reflect the CCMA’s responsibility to represent a regional overview of sustainable resource management.”

The submission also had these things to say...

1. *The CCMA stated it understood that a licence renewal should not impact on existing rights to groundwater for private domestic and stock purposes.(It has.)*
2. *SKM have indicated that modelling suggests private bores will experience drawdown associated with an increase in pumping.(This has happened.)*
3. *Boundary Creek has been impacted.(Now locally know as Dead Creek.)*
4. *That adverse impacts associated with increased pumping be identified and ameliorated.(Not done on both counts.)*
5. *An annual increase to 20 000 ML is five times the PAV. The CCMA believed this level of extraction to be an excessive threat to the ability of the aquifer to recover and consequently the sustainability being in doubt.(There is absolutely no doubt now. 2008.)*
6. *Issuing a licence for 15 years should have a review process put in place allowing for significant new information and appropriate amendments.(Not done and significant new information suggests a review is long overdue.)*
7. *The CCMA asked for accurate monitoring and assessment of impacts on flora and fauna dependent on Boundary Creek and wetlands.(Not possible using the sites chosen as controls.)*

The Barwon Downs borefield experience is nothing short of environmental degradation in the extreme. Kawarren borefield must not be allowed to follow this path.

State Environment Protection Policy Groundwaters of Victoria
makes it quite clear that:

1. *The protection of groundwater aquifers is fundamental to the protection of environmental quality of surface waters.*

2. *groundwater managers must not pose an environmental risk to surface water beneficial uses including the prevention of surface water environmental flows (Vic Gov Gazette special No. 107, 2003).*

On the DPI web site under the heading Groundwater Beneficial Use it states that the Beneficial Use “maintenance of ecosystems” must be protected.

There have been numerous studies done on the Gellibrand River and the environmental flows recommendations from these studies go back decades. From these multiple environmental flows recommendations made over the last 20 odd years no allocation has ever been made. It seems doubtful that there will ever be a time when finalisation of the environmental requirements for the Gellibrand or any other creek or river in the Kawarren of Gellibrand valleys of the Otways will be achieved.

However, when bulk entitlements and water allocation decisions are being made for human use environmental flow recommendations are no doubt considered. But, these environmental flow recommendations are not binding, poorly represented, most often given the minimum of consideration and then ignored.

While more environmental studies are being called for and no environmental flows are being allocated, water extraction for human consumption takes priority and is continually being increased.

It would appear that the fear of incorrectly allocating the appropriate water requirement for an ecosystem is one of the reasons an allocation is never made.

In the Corangamite Catchment Management Authority’s Assessment of the Environmental Flow requirements for the Gellibrand River-Recommendations 2006, it states “...it is recommended that additional and more comprehensive analysis of the system be undertaken prior to finalisation of the environmental water requirements for the Gellibrand River.”

However, the availability of water for human consumption does not suffer the same restriction. As the circumstances change, the water allocation for humans is altered accordingly and invariably is increased. The same principle should apply to the environment; allocate environmental water and as new research becomes available then environmental water allocations can be altered. But once an environmental flow is allocated it should not, at some later date, be compromised because of man’s inability to plan ahead. Future water demands should be anticipated, planned for and development strategies implemented to meet these demands. Any environmental flow, once allocated, should only be modified after extensive and comprehensive scientific scrutiny.

The REQUEST of the CCMA

The request is to implement a legally binding daily flow of water as suggested below, to flow in the Loves Creek catchment.

To be bold would be to implement a legally binding daily environmental flow for the Gellibrand River as well.

There was much discussion at this meeting. The outcome being that under State Government policy at the time, there could be no more surface water extraction from the Loves Creek Catchment

except during winter flushes and this water had to be for off stream storage. Unfortunately this makes no allowance for the fact that the majority of the summer flows into the Loves Creek Catchment is from an overflow out of the aquifers into the headwaters of the permanent running creeks and streams. If extensive groundwater extraction is permitted this aquifer overflow will cease to provide the summer flows in the creeks at the surface. The thrust of this request to allocate an Environmental Water Reserve was to maintain this overflow from the aquifers as environmental flows for the Yahoo, Ten Mile and Porcupine Creeks at the surface. Despite the multitude of recommendations this has never been done.

Getting across the idea that this was a quest to have water put aside for no other reason than for the environment, seemed to be falling on deaf ears. Considering the volume of State Government policy and legislation promoting environmental sensitivities this seemed incomprehensible.

Having gained little satisfaction from the Corangamite Catchment Management Authority it was decided to approach Southern Rural Water again taking a slightly different approach to the request for environmental water. On 5 April 2009 Mick Fennessy was sent a copy of the earlier request with the following inclusion.

Mick, your reply arrived dated the 15 July 2008.

You determined the following:

"I have determined that this is not a matter that is regulated or applied by Southern Rural Water and that it is a matter best dealt with by the Corangamite Catchment Management Authority.

I have referred the matter o (assume this meant "to") them for a response and suggested that they communicate direct to you rather than via SRW."

To help the process along I contacted the CCMA and a meeting between Don Forsyth, Trent Wallis, Simone Wilkie, Greg Williams, and Ron Anstis and myself took place middle of August 2008.

We discussed the Water Act 1989, Securing Our Water Future Together documents and concluded that the surfaces waters of the Loves Creek catchment could have no further extraction by licence except during the period July-October and it be granted as off storage winter fill when there was extensive freshes.

Williams makes the point in documentation that the Gellibrand River surface waters are already fully allocated. This clearly indicates that the tributaries found in the Loves Creek catchment are similarly allocated.

Consequently the CCMA could not and did not deal with my application to take and use groundwater from the Eastern View Formation as a summer environmental flow, entitlement, or better put, as a groundwater Environmental Water Reserve.

I would like you to review your decision and note that I am asking for a licence to be issued to me as an environmental entitlement. If the amounts of water asked for as daily summer flow in the named creeks creates a problem, I am prepared to change it and ask that the only groundwater allocation to be made will be for environmental entitlements. In effect this would be the same as ZERO Permissible Consumptive

Volumes for groundwater extraction in the Gellibrand Groundwater Management Area.

Failing this I am applying for a Bulk Water Entitlement of all groundwaters in the Loves Creek catchment to be held in reserve for over flow to surface water dependent ecosystems.

Failing this I would ask you to approach the Minister for Environment and clarify the process needed to be followed to have him assign me an allocation of water under the environmental entitlement to achieve the aim of preserving the water dependent ecosystems in the Loves Creek catchment.

Mick's 3 page reply arrived in due course (see the next 3 pages). It is interesting to note on page 2 of Mick's letter that if the Permissible Consumptive Volume (PCV) for groundwater extraction in the area is set at zero, an application for groundwater for the environment, would fail. In 1999 it was recommended that there be zero groundwater extraction from the Gellibrand Groundwater Management Area that includes the Loves Creek Catchment. In November 2006 minister for Water John Thwaites Gazetted zero groundwater in the Gellibrand Groundwater Management Area. However, when Barwon Water wanted to look at the feasibility of extracting 16 000 million litres a year for urban consumption from the borefield in the Loves Creek Catchment at Kawarren, Water Minister Tim Holding gazetted a change from zero to 625 ML July 2008 so that a test pump could be conducted by Barwon Water. The multitude of reasons that the annual groundwater extraction was set at zero was being completely ignored by the Water Minister and his advisors.

Barwon Water was seeking 16 000 million litres of water a year whilst the water being requested for environmental purposes is 0.0000009% of this amount.

Further down page 2 Mick has this to say, "*You will note that the process is more that a simple request and a stroke of the Ministerial pen.*" For environmental water this would appear to be the case. However, for urban water use it is an entirely different matter. In July 2007 Barwon Water conducted a 48 hour test pump from the Kawarren borefield without permission – this was an illegal pump. Then in February 2008 one advertisement in the Colac Herald gave notice that Barwon Water had applied for a licence to extract groundwater from Kawarren. An application by Barwon Water is not dismissed out of hand like an application for environmental water is.

Sixty three objections were submitted to Southern Rural Water in reply to Barwon Water's application. On 10 April 2008 verbal presentations were heard as part of a community consultation process. Six months later Southern Rural Water announced that the community consultation process and its extensive investigations into the objections had ended. On the 27 October 2008 Barwon Water had been granted permission to go ahead with the test pump – the licence was approved pending appeals. However, back in April, months earlier, Minister Tim Holding wrote that, "*...this licence will be issued for 13 months and will allow Barwon Water to pump groundwater from an existing bore in Kawarren.*" (see page 112) When the Minister penned this letter Southern Rural Water had only just begun its deliberations and investigation into the multitude and complexities of the communities' objections made 13 days earlier. To finalise its work took Southern Rural Water another six months. The fact that the Minister could write such a letter does suggest that a simple stroke of the pen is possible when there is a political will.

On page 2 of Mick's letter he writes about the considerations needed for the constructions of bores to extract this environmental water. At no stage has there been any thought or need to construct extraction bores. The request has always been the preservation of natural flows to maintain the

water dependent ecosystems in the Loves Creek Catchment. The critical component being the maintenance of the groundwater overflow from the aquifers in the area.



17 April 2009

Malcolm Gardiner
1805 Colac Beech Forest Road
KAWARREN Vic 3249

Dear Mr Gardiner

Thank you for your letter of 5 April 2009.

I note your earlier correspondence of 25 March 2008 in which you sought to establish an environmental water reserve for the Porcupine, Yahoo and Ten Mile Creeks.

The means you proposed to do so was by extraction of groundwater from what you describe as the Eastern View Formation. You proposed daily extraction of 0.13ML, 0.5ML and 1.0ML respectively to be added to the described waterways.

In my reply to your original correspondence in July 2008, I suggested that the matter of environmental flow regimes was best dealt with by the Corangamite Catchment Management Authority ("CCMA").

I note that your meeting with the CCMA in August 2008 established that the Gellibrand Catchment of which the three aforesaid waterways are part, is fully allocated for surface water extraction thus eliminating the prospect of winter fill harvesting.

You now wish the original proposition relating to groundwater extraction for establishment of an environmental reserve to be reconsidered and in the alternative seek the granting of a Bulk Entitlement to yourself for that purpose.

As I see it, by virtue of the provisions of the Water Act 198 ("the Act") your propositions are problematic. I shall deal with each as succinctly as I can.

In terms of the groundwater extraction proposition, the delivery of water to the respective streams from groundwater in the Gellibrand Groundwater Management Area ("GMA") would require a volume per annum (based on a 90 day summer period) of 11.7ML, 45.0 ML and 90ML respectively totaling 146.7ML.

In consideration of any application to take and use water, the first question to be considered must be "*Is the area from which the extraction is proposed regulated by the Water Act 1989?*" In this case the answer is in the affirmative as the area is clearly described as the Gellibrand GMA.

PO Box 153 MAFFRA VIC 3860
Telephone: (03) 5139 3100
Facsimile: (03) 5139 3150

ABN: 70 801 473 421
Email: srw@srw.com.au
Website: <http://www.srw.com.au>

The next issue to be dealt with relates to the availability of entitlement within the regulated area. The situation with Gellibrand GMA is that the Permissible Consumptive Volume (“PCV”) for the area has been declared at 625ML for the purposes described in the application by Barwon Region Water Corporation and its proposed test pump at Kawarren. This PCV expires in August 2009 and it is my understanding that the volume will return to zero.

On that basis any application would fail given that there is no available water.

Other issues that I have not touched upon but would need to be considered in any such application would include (but not be limited to) the construction of bores for the extraction, the location of those bores and any potential hydrogeological issues that their construction and proposed extraction volumes may present.

Your next proposition relates to the allocation of a Bulk Entitlement for the same purpose.

Section 36 of the Act prescribes that “*An Authority may apply to the Minister for the grant of a bulk entitlement....*”

An authority is defined under the Act as:

“Any person empowered to carry out any function under this Act in relation to –

- a) floodplain management; or*
- b) irrigation; or*
- c) regional drainage; or*
- d) sewerage; or*
- e) waterway management; or*
- f) water supply –*

And includes the Authorities listed in column 1 of Schedule 12, a council appointed under section 98(1)(a) and a Catchment Management Authority under section 98(1)(ab).”

You not being one of those abovementioned categories means that you are not entitled to be granted a bulk entitlement.

Accordingly, this proposition would also fail.

The Water Act does deal with the subject of Environmental Entitlements at Division 1A.

In the sections 48A to 48Q the process for granting such entitlements is described.

I have reproduced those sections and append them herewith.

You will note that the process is more than a simple request and a stroke of the Ministerial pen.

I commend those parts of the Act for your further consideration and action should you wish. Any proposition to consider such a grant would require adherence to the process set out in the Act.

I would regard the matters as falling within the purview of the Department of Sustainability and Environment rather than Southern Rural Water.

I trust that this response has been of assistance in directing you efforts.

Please feel free to contact me at the Warrnambool office on 5564 1700 to discuss any of the matters I have I have dealt with in this letter.

Yours faithfully



MICK FENNESSY
Manager, Administration – West
Groundwater & Rivers
Warrnambool



Minister for Water

Ref: DSE048544
File: CS/030527

121 Exhibition Street
Melbourne, Victoria 3000
GPO Box 4509
Melbourne, Victoria 3001
Telephone: (03) 8684 8000
Facsimile: (03) 8684 8014

Mr Charles Kohout
125 Carlisle Gellibrand Road
GELLIBRAND VIC 3239

24 APR 2008

Dear Mr Kohout

TEST PUMPING OF GROUNDWATER

I refer to your letter received on 27 November 2007, to the Premier, the Hon. John Brumby MP, regarding the test pumping of groundwater at Love Creek by Barwon Water. As the issue falls within my responsibility as the Minister for Water, your correspondence has been forwarded to me for response.

In October 2006, the Victorian Government published *The Central Region Sustainable Water Strategy*, which outlines actions to secure water supplies for homes, farms, businesses, industry and the environment for the next 50 years. These actions will help improve the health of rivers and secure supplies for Melbourne, Geelong, Ballarat and the State's inner west.

The Strategy identified two options for Geelong's future water supplies: a pipeline connection to Melbourne or utilisation of groundwater resources from the Newlingbrook aquifer system. In May 2007 the Government announced that connection to Melbourne was the preferred option. However, the Newlingbrook resource appraisal program will continue, to improve our knowledge of the extent, quality and properties of groundwater in the area.

The study into the Newlingbrook aquifer system is occurring at several sites, including an existing bore in Kawarren. As is normally the case, extensive field surveys and investigations are being undertaken, and test pumping will assist in determining the aquifer's basic characteristics, including flow rates, draw down rates and recovery rates.

As you may be aware, Southern Rural Water held a meeting on 10 April 2008 with those people who lodged submissions following the advertising of Barwon Water's Section 51 licence application. This licence will be issued for 13 months and will allow Barwon Water to pump groundwater from an existing bore in Karaween. The water will be treated and discharged into Love Creek. Subsequent to the testing period, any long-term licence application from Barwon Water will be subject to public consultation.

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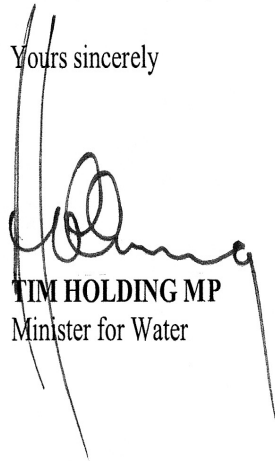


Considering that the licence mentioned in this letter says, "*This licence will be issued...*" and the public consultation process did not conclude for another six months, no confidence can be gained when the Minister writes, "... *any long term licence application from Barwon Water will be subject to public consultation.*" All the Minister has to do is take out his pen again and autocratically sign a new licence off before, during or after any token public consultation.

You may wish to contact to the Licensing Manager at Southern Rural Water on 5564 1700 to suggest any additional studies.

Thank you for raising this matter with me.

Yours sincerely



TIM HOLDING MP
Minister for Water

All things considered and after reading Mick's appended extracts from the Water Act 1989, another approach to establish an environmental flow for streams in the Loves Creek Catchment, seemed a possibility. Minister Holding had the powers within his area of responsibility as stated in the Water Act to set in motion the appropriate process to provide the environmental flows as requested.

Consequently another letter was sent to Mr. Holding.

21-04-2009

***Water Minister Tim Holding
121 Exhibition Street
GPO Box 4509
Melbourne
Victoria 3000.***

Dear Mr. Holding,

Re: Environmental Groundwater Reserve.

I have spoken with and corresponded with Mick Fennessy of Southern Rural Water and had discussions with officers at the Corangamite Catchment Management Authority in regard to summer surface water flows in the Loves Creek Catchment - a tributary catchment in the upper reaches of the Gellibrand Catchment.

The purpose of these discussions has been to investigate the provision of an Environmental Groundwater Reserve for the Loves Creek Catchment. It would

appear that the appropriate way of achieving this would be for you to set in motion the process under Section 48 of the Water Act 1989. Consequently I am writing to you requesting that you set this action in motion so that an Environmental Groundwater Reserve entitlement is granted by you under 48 B.

If you appoint a panel as part of the process I urge you to consider having me on this panel, 48 E (1).

The Minister was able to grasp the general ideal of this request and replied some months later (see page 115)).

Needless to say the reply was extremely disappointing – the Minister was adopting the stance that the Loves Creek Catchment was so inconsequential he wasn't prepared to initiate any action to preserve the Catchment. It would appear that the Water Minister can allow "corners to be cut" and can personally "cut corners" himself to satisfy a dubious attempt to exploit a groundwater resource for a Government water body, but can't see his way to implement State Government policy protecting a healthy creek catchment. As Mick Fennessy writes, an environmental flow component would mean allocating a miniscule 146 ML flow for a 90 day period over the summer. As stated earlier this is 0.0000009% of the amount Mr. Holding was so accommodating and willing to allow Barwon Water to look at extracting for urban use.

It is reasonable to conclude that Southern Rural Water, the Corangamite Catchment Management Authority and the State Government Water Minister do not have the political will or desire to provide an environmental allocation to the Loves Creek Catchment. The preference appears to be, leave the option open for future urban use and exploitation of the water resource in this area irrespective of the environment and rural community requirements. The exploitation of the Otway Ranges ground and surface water resources for urban use continues unabated.

The recognition that the water resources of the Loves Creek Catchment are fully allocated⁽³⁵⁾ falls on deaf ears. Groundwater that maintains summer flows is part of the water resource and must not be extracted before it reaches the surface streams. The maintenance of the status quo in the Loves Creek Catchment may be sustainable, however, the extraction of 16 000 million litres a year would be catastrophic. The Minister can readily entertain and accommodate such happenings whilst dismissing out of hand a proposal that would ensure that the integrity of a magical part of the Otway Ranges would be preserved.

Considering the revelations of this Chapter it is easy to understand why the Environment and Protection Authority (EPA), the Corangamite Catchment Management Authority (CCMA), Southern Rural Water (SRW), the Department of Sustainability & Environment (DSE) and the Colac Otway Shire (CoS) are so reluctant to carry out their statutory responsibilities.



Minister for Water

Ref: DSE062321
File: CS/03/3003

121 Exhibition Street
Melbourne Victoria 3000
GPO Box 4509
Melbourne Victoria 3001
Telephone: (03) 8684 8000
Facsimile: (03) 8684 8014

Mr Malcolm Gardiner
1805 Colac Beech Forest Road
KAWARREN VIC 3249

21 AUG 2009

Dear Mr Gardiner

ENVIRONMENTAL GROUNDWATER RESERVE

Thank you for your letter dated 21 April 2009 proposing an Environmental Water Reserve (EWR) for groundwater be set for the Love Creek catchment.

Section 48B is not the appropriate mechanism to manage summer water flows in the Love Creek catchment.

Division 3 of Part 3 of the *Water Act 1989* provides a process for preparing management plans that take into account the water needs of licence holders and the environment. It involves declaring a Water Supply Protection Area, setting up a consultative committee and preparing a management plan. A management plan can cover both surface water and groundwater resources in the declared area.

However, given the small volume of licensed extractions from Love Creek, I am not prepared to initiate the process to declare a Water Supply Protection Area to manage the summer flows in Love Creek.

Thank you for raising this matter with me.

Yours sincerely

TIM HOLDING MP
Minister for Water

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