



Information sheet July 2012.

A variety of communications have recently been made with the various organisations responsible for the sustainable use of water in the wider Gingin area. The following comments contain extracts taken from communications made.

Check the website for other submissions.

### **Airborne electromagnetic geophysical survey of Gingin**

The Gingin Water Group has just been informed of the upcoming aerial electromagnetic geophysical survey being undertaken by the Department of Water to investigate the soil types of, primarily, the superficial aquifer region of sub area 3 and part of sub area 6 of the Gingin Groundwater area and further south.

The published helicopter tight grid survey suggests that some good data will be collected across the area west of Brand highway covering that area of the Gingin and Quinn brooks which once used to be swamps but is now drained, at least in the northern parts, to allow farming. These areas were previously watered by freshwater streams, which presumably were perennial prior to farming, and later climate change. This flow, which the Tuff Report identifies as Mirrabooka aquifer water in the case of Gingin Brook, could be a major (the major ??) source of recharge to the superficial aquifer in this region. Is it reasonable to assume that the unexplored Moondah, Wowra and Lennard Brooks also arise out of the Mirrabooka? This water also serves to recharge the area you are surveying. Historically these swamps would have given rise to the system of perched aquifers across this region, which are now drying out and causing so much concern to the local residents and ecologies.

It is understood that this survey and the larger fixed wing data is not designed to focus on the Brook hydrology as such. However any opportunity to gather reliable data which sheds science on how these Brooks carry groundwater from one region and uses it to recharge ecologies and aquifers (both unconfined and confined(perched)) must be used to the maximum advantage.



Considering that the Gingin Brook in particular , and the other freshwater brooks and streams in the survey area , carry the highest social value and support ecologies which also have very high environmental values , it is fundamental to understand fully the recharge mechanisms of all the Brooks and streams mentioned. With this in mind it is noted that the survey area outlined shows that the helicopter data stops well short of the head of the Gingin Brook and the others. The fixed wing data should prove just as useful in identifying any connection between the Mirrabooka and surficial aquifers at the source of these Brooks. Unfortunately the outline shows that , even though the Wowra and Moondah brook headwaters are overflown , the Gingin Brook and Lennard Brook forks are just missed.

The Gingin Water Group would ask that , considering the importance of the data source and the closeness of the flyover , arrangement should be made to collect that data and complete the loop of understanding that could be achieved even though it may not be a primary aim of the project.

Any future hydrological event which compromises the winter contribution of groundwater carried by these Brooks would directly effect recharge of the Gngangara mound.

### **Gingin Regional Landfill at Fernview farm by Veolia**

Very recently my attention has been drawn to the progress of the Gingin regional landfill proposal at Fernview by Veolia.

Because of our recent history and focus the Gingin Water Group has not followed the process of this project. I sense that there is enough public interest amongst the local community we seek to represent that it would be appropriate for GWG Inc. to declare an interest in this project going forward. To this end I am attempting to catch up on the background of the project. I would much appreciate if you could arrange to e mail me any appropriate information you have.

I note that the summary log for bore RG2A shows the surface 63m as being various Greensand and Chalk layers (generally understood to collectively be known to as the Mirrabooka aquifer) which are pervious



and generally hold water. Whether the six boreholes logged in Appendix B (Coffey Environments 2008) showed water I do not know.

What is known is that the mound springs feeding the headwaters of the Gingin Brook are described as being 4-5 Kms southwest of the proposed site.

The Tuff report (DOW Report number HG54 December 2010) has identified that these headwaters arise out of the Mirrabooka Aquifer (page 28, Groundwater-Surface water Interaction Along the Gingin Brook Western Australia (Tuff Report)).

The same soil layers as identified under the proposed landfill site.

The Tuff report states that these sands are predominantly recharged by rainfall and describes differences in their structure observed locally between the headwaters of the Gingin and Moondah Brooks.

The DoW admits it does not have an adequate understanding of the structure and hydrology of the Mirrabooka Aquifer, and is currently planning an investigative program of around ten boreholes, though the exact location I do not know.

Any description by the landfill proponents of the hydrology of this local area will be based on historical data and theoretical extrapolation. This may or may not be an accurate description of the water connectivity between this site and the perennial freshwater streams to the south west and south which are so fundamentally important to the existence of Gingin.

Notwithstanding the relatively benign nature of the refuse to be deposited (Class II type) and the sophisticated design of the confining layers, the proposed 20 year lifespan will inevitably be extended (plenty of space) if there are still materials to be deposited, as will maybe the nature of the deposits.

To this end the Gingin Water Group would submit that the monitoring process will need to be rigorous and completely transparent.

The public must have access to the process.

The number of monitoring holes, their position, depth and sampling regime must be such that the community will have faith in the process to protect its precious waters for generations to come.

Such baseline data and the dynamics of the water flow around and through the site connecting to the streams will not be gathered from 3 or 4 bores.

Thirty or forty may be more realistic!



Independent expert advice would appear to be needed to verify the proponent's program.

This may well have happened. I have not seen evidence of it and would appreciate your assistance with the matter. Perhaps a briefing with your planning people would be appropriate or direct communication with Veolia or their agents, maybe Aurora Environmental.

### **Submission to the Gingin Groundwater Allocation Plan**

The Gingin Water Group is holding a \$15,000 grant, supplied through the Natural Resource Management (NRM) funding structure via the Northern Agricultural Catchment Council (NACC) and its subsidiary Moore Catchment Council (MCC). The contract has been finalised for this process and we are still awaiting the release for comment of the Report. The funding included the establishment of the Website ([www.ginginwater.org.au](http://www.ginginwater.org.au)) and will cover the reporting of the submission to the local community. Please visit the website and communicate your concerns and comments.

### **Application for funding to bring airborne geotech data to landholders**

Gingin Water Group did its best to inform its e-list of the airborne electromagnetic geotechnical survey being conducted across the region for the Department of Water. Your Group has been in continued contact with the DOW regarding the process of which the helicopter component is only part. Now that this part is completed it is the view of Gingin Water Group that individual landholders should have access to the data collected.

The information is very precise and of the most technically advanced ever collected across the area. Its actual use to an individual landholder is yet to be established and the form that it can be suitably presented to an individual investigated.

To this end the Gingin Water Group has had discussions with the Perth NRM group through committee member Sandy Pate, who already has responsibilities in the Gingin area regarding sustainable farming practices. A possible funding package is being proposed in order to access the geotech data and bring it in a useful form to landholders. It is



the view of the GWG that this data , paid for by the public, may well end up being archived forever after use by the DOW, who have no plans to take it to individuals. If community support was sufficient then it may be possible to access the data in a form that was landholder private. The cost of individual access and analysis may well be prohibitive.

Without the evidence of individual support , through membership and contact, a proven community interest is difficult to establish. Without this a chance to access data ,which may be of great collective or individual significance , might pass by.

### **Lack of Gingin Brook flow to Golf Club**

Recently it was brought to my attention that the water has stopped flowing through the Gingin Golf course. The Edmund House Cup was held in the absence of an actively bubbling stream and presumably the lack of natures marvels that go with that water course , notwithstanding the occasional frustration to strokeplay!

The seriousness of this historical first should not be understated. Could we see the new water wheel in a dry stream bed?

The Department of Water and Gingin Shire have both been informed , and urged to response , by your Gingin Water Group.

Thank you to a concerned citizen who reported this.