

The value of storage surveys

By Peter Smith and David Wigginton, NSW DPI,
Cotton Catchment Communities CRC

SECTION 5 WATER MATTERS

This section brought to you in association with



Everyone knows that you often make decisions that rely on knowing the amount of water your storage can hold. Whether you need to determine how much irrigated crop to plant, you have to make the hard decision of ploughing a crop in or you are benchmarking your irrigation performance at the end of the season — it is frequently the amount of water in your storage that you refer to.

So what if your storage has more or less water in it than you think?

Breeza Plains

Phil and Fleur Morgan own an irrigation farm on the Breeza plain, near Gunnedah.

As a response to water entitlement reductions, Phil decided to construct a storage and purchase a licence to extract from the unregulated Mooki River.

With severely limited irrigation entitlement, Phil was keen to know precisely just how much water he had on the farm at any given time so, in June 2002 while the storage was empty, he had it professionally

surveyed. The storage volume calculated from this survey was 304.6 megalitres – 22 per cent more than the design estimate!

How did such a large difference occur? Phil's understanding is:

- All storage designs are based on a particular cut-to-fill ratio which is 'only an assumption based on an educated guess'; ...76▷



Some storages hold much more or less than thought.

Pivot

Irrigation & Pumping



44 CONADILLY STREET
GUNNEDAH NSW 2380

Centre Pivot & Lateral Move Specialists
Sales & Service
AUTHORISED VALLEY DEALER
No 1 in pivot technology world wide

Centre Pivots
Towable Pivots
Universal Linear
Linear
Monitoring Systems
GPS Surveys
Servicing all Brands of Pivots & Laterals

Mark Schmitt
m: 0408089036
p: 02 6742 6501
f: 02 6742 7629

Richard Gower
m: 0408089319

e: mark@pivotirrigation.com.au
www.pivotirrigation.com.au



Precision Irrigation Made Easy®

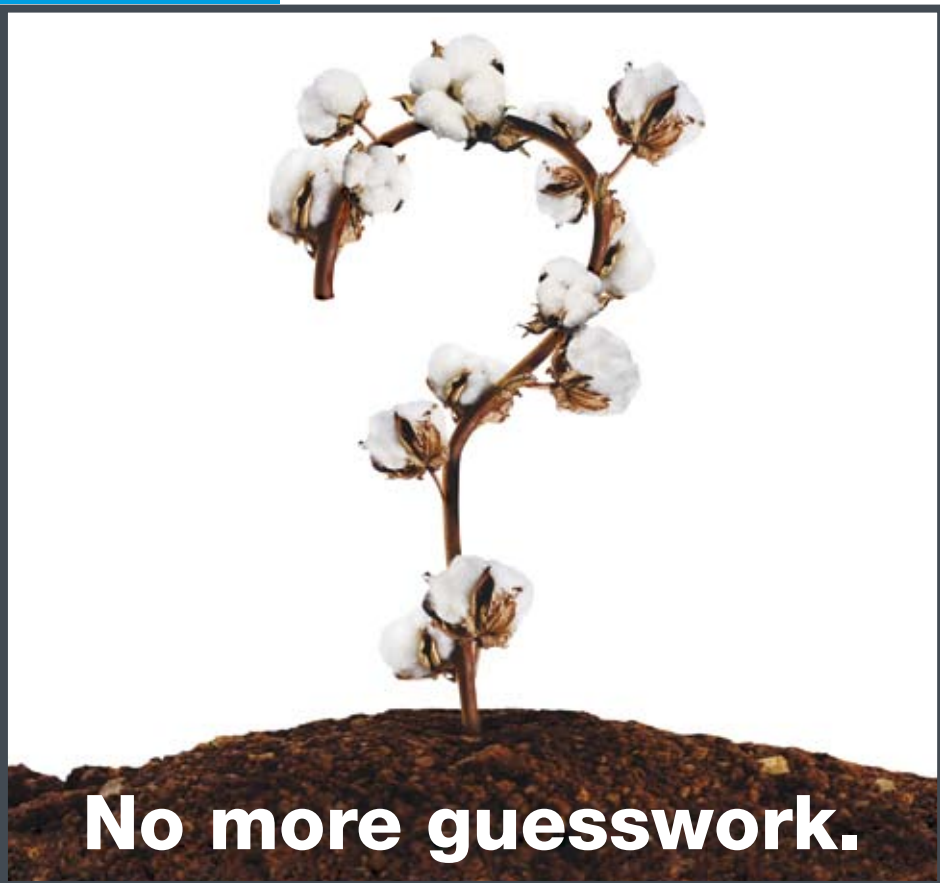


SECTION 5
WATER MATTERS

This section brought to you in association with



Happiness is a full storage. (Photo Dave Anthony)



No more guesswork.

Cotton growers are using the world's most advanced soil moisture technology to understand water dynamics across their crop, improve yields and maximise water efficiency.

The new generation of AquaSpy water management systems provide a complete understanding of the environment right through the soil profile.

No other soil moisture probe provides data at every 100mm about soil moisture and temperature levels.

A durable, no maintenance modular design and an open and common platform enables plug and play connectivity.

Manual, radio or cellular download options are available for delivering data online or to PC based software.

A growing distributor network means there are AquaSpy dealers located across Australia – and support is just a phone call away.

AquaSpy - Intelligence in every drop.

For more information go to: www.aquaspy.com or call (08) 8416 9900



<75...VALUE OF STORAGE SURVEYS

- In his storage, higher than usual compaction may have occurred due to the soil being very wet;
- This meant more soil had to be cut from the borrowed areas to have sufficient to construct the walls; and,
- This extra soil removal from the borrow areas meant more water could be stored than originally planned.

Darling Downs

On the Darling Downs, Murray Boshammer from Total Ag Services has performed a number of storage surveys for local growers. He says that many of the storages that he has investigated have held less water than the grower believed — the opposite of Phil Morgan's situation!

In one example, a storage was believed to hold 1400 megalitres. But following a complete survey, it was discovered that the storage actually held 1270 megalitres — almost 10 per cent less!

Murray has also surveyed storages that have held over 20 per cent less water than originally thought — a significant issue for any manager.

Ultimately, this means that you can't make any assumptions about the amount of water your storage can hold until you have had a storage survey performed. It is also quite possible that depth-volume curves based on design specifications may be incorrect. If this is the case you may not have an accurate estimate of the amount of water in your storage at any time.

There are a number of companies that can undertake storage surveys, and they are generally cost effective. Furthermore, many water use efficiency incentive programs will help to fund storage surveys. For more information on survey providers, incentives or just general information, your local Water Team member is more than willing to help.

