Recycle pits – BRIA

FARMACIST

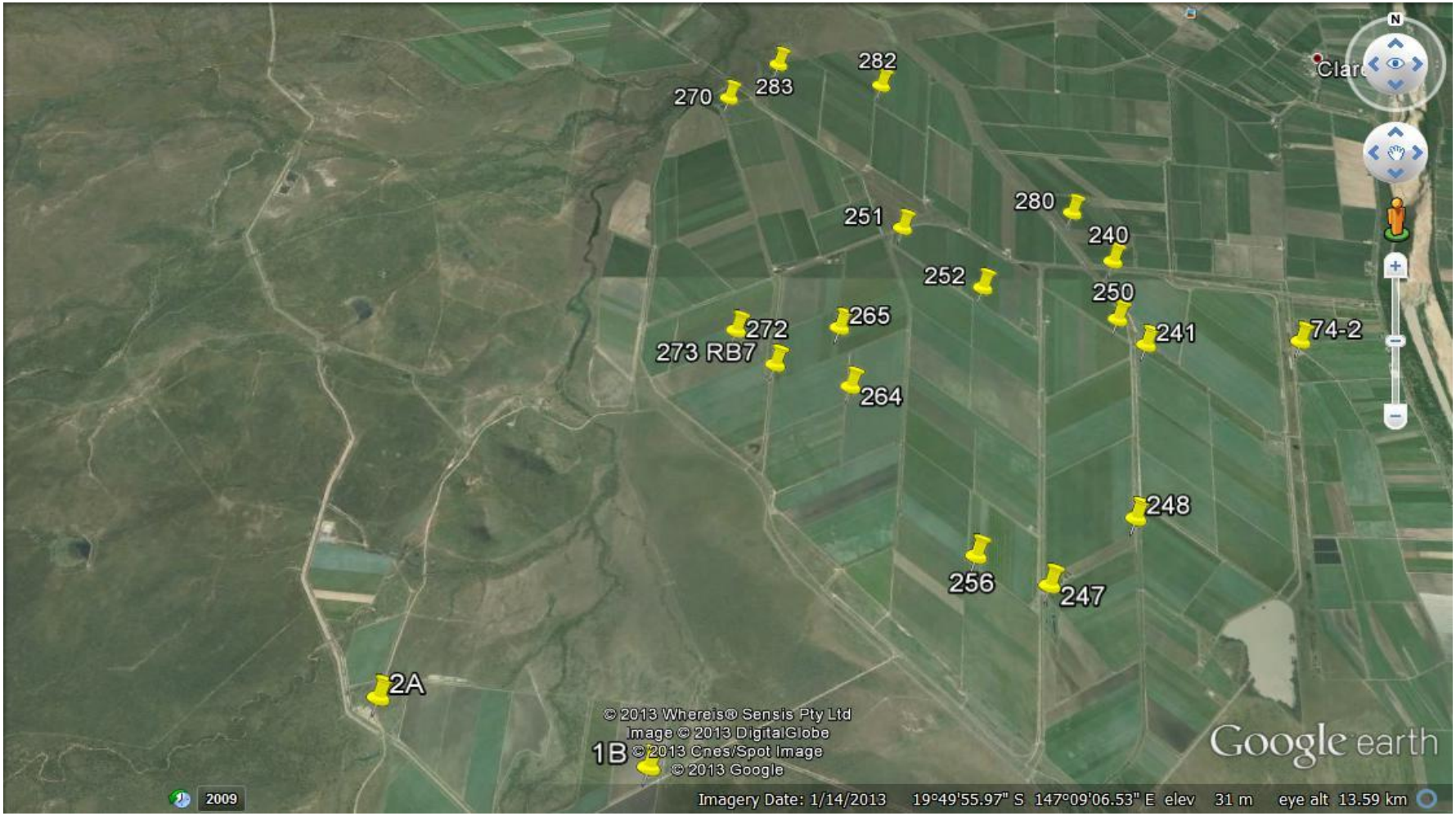
Burdekin River Irrigation Area (BRIA)

- Govt scheme 1988-1998
- 35,000ha developed initially rice then sugarcane from 1990
- Initial recycle pits were from non local growers
- Not encouraged by QWRC

Recycle pit capacity (2013)

BRIA region	Net irrigated area (ha)	recapture capacity (%)
Mulgrave	3973	88
Woodhouse	553	86
Upper Haughton	4796	60
Northcote	4113	75
Jardine	3659	60
Selkirk	3431	60
Leichhardt	2650	57

Recycle pits – Mulgrave



FARMACIST

What is the benefit of recycling ?

- Capture irrigation and rainfall runoff – 15% to 25% of irrigation applied
- Helps in times of channel maintenance, restrictions and after rainfall
- Less nutrients going off farm
- Less herbicides – Diuron, Atrazine, Metolachlor
- Of most benefit in the dry season
- Valuable resource returned to the farm

FARMACIST

BRIA gravity system

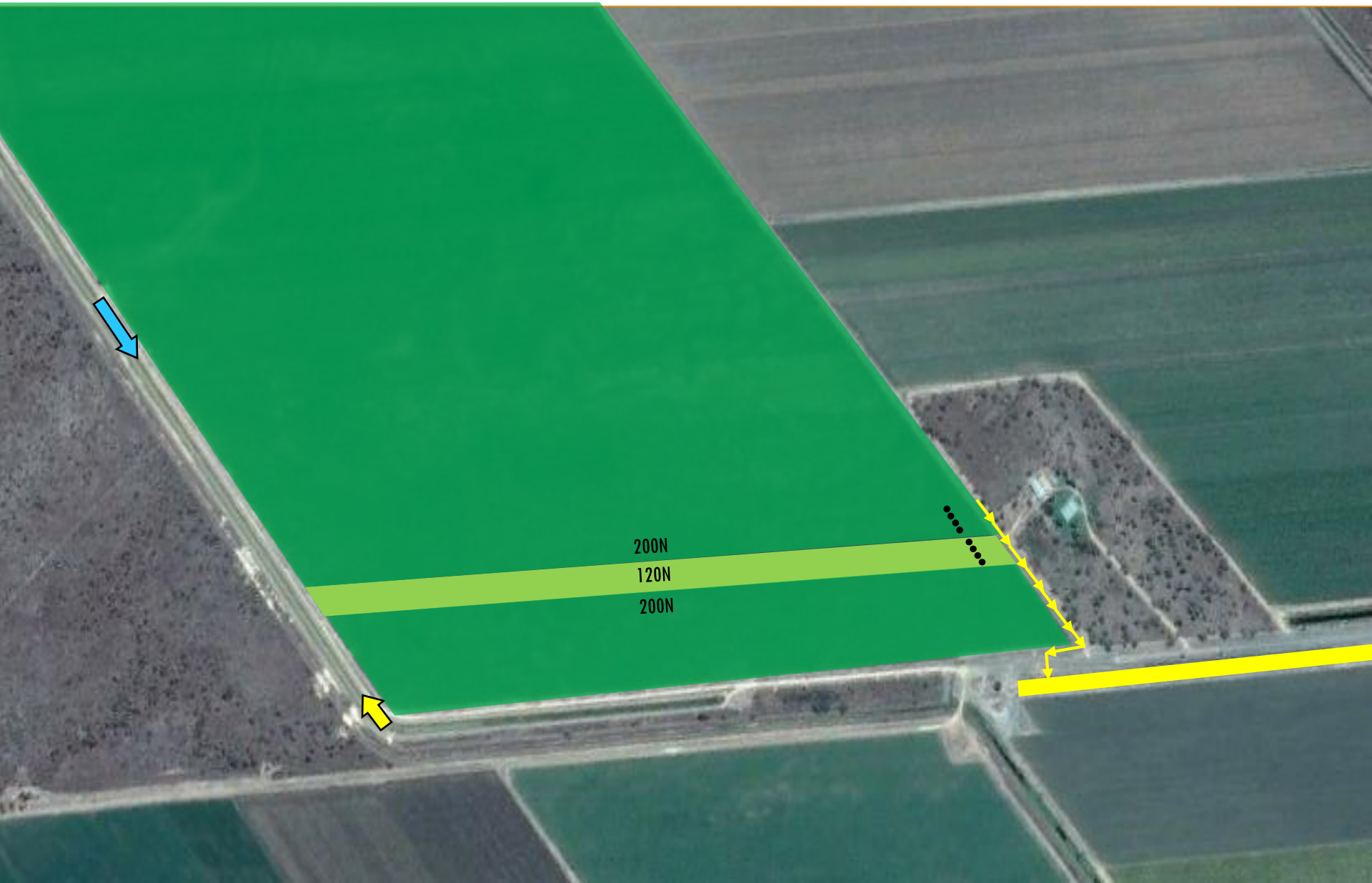
1.6 l/sec
(depends on
channel water level)

Recycle pit efficiencies

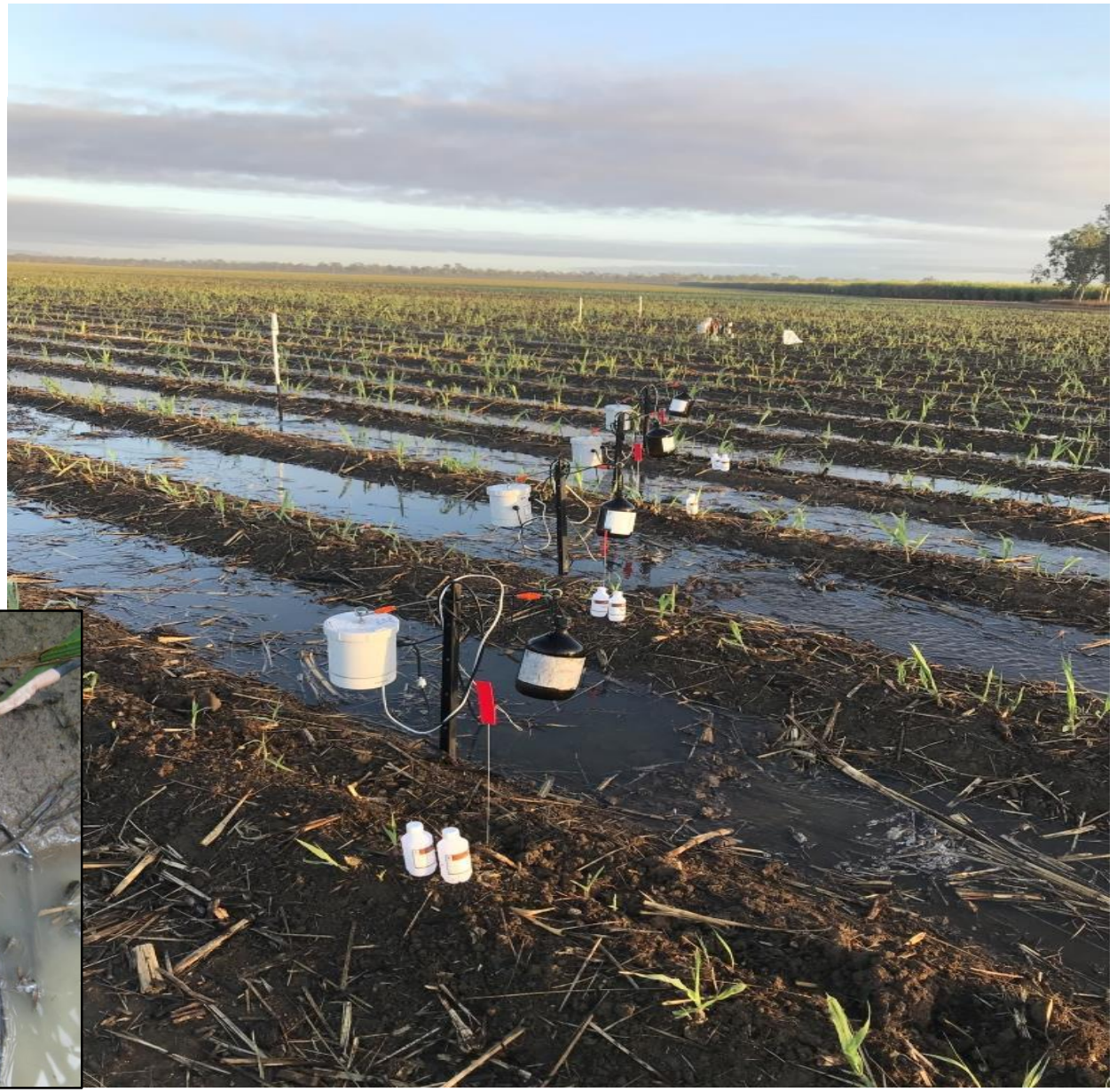
Location	Storage capacity (ML)	Losses mm/day	Volume recycled per week (ML)
Lot 266	12	10.1	2.2
Lot 252	15	3.5	8.2
Lot 248	25	6.8	3.2
Lot 28	4	8.0	1.3
Lot 31	15	7.2	2.2

FARMACIST

wilmar



BBIFMAC Kp event sampler



Mean total N losses (mg/l)

Treatment	1st 6 July 18	2nd 8 Aug 18	3rd 5 Sept 18	4th 4 Oct 18
T1 mean 200kgN/ha	2.8	17.0	7.7	2.0

Mean total N losses (mg/l)

Treatment	1st 6 July 18	2nd 8 Aug 18	3rd 5 Sept 18	4th 4 Oct 18
T1 mean 200kgN/ha	2.8	17.0	7.7	2.0
T2 mean 120kgN/ha	2.0	14.8	6.3	1.7

Mean total N losses (mg/l)

Treatment	1st 6 July 18	2nd 8 Aug 18	3rd 5 Sept 18	4th 4 Oct 18
T1 mean 200kgN/ha	2.8	17.0	7.7	2.0
T2 mean 120kgN/ha	2.0	14.8	6.3	1.7
Mixed inflow mean	0.27	10.7	5.5	1.7

How much N has been captured by the recycle pit ?

- 4 irrigations to date
- Av 1.1ML/ha per irrigation * 4 * 105ha = 462ML

- Assume 25% runoff; all captured = 116ML

- Average N losses 7.4mg/l or 7.4kg/ML
- 116ML * 7.4Kg/ML= 858 kgN
- Or 8kgN/ha captured

- **No N has left the farm as surface runoff**

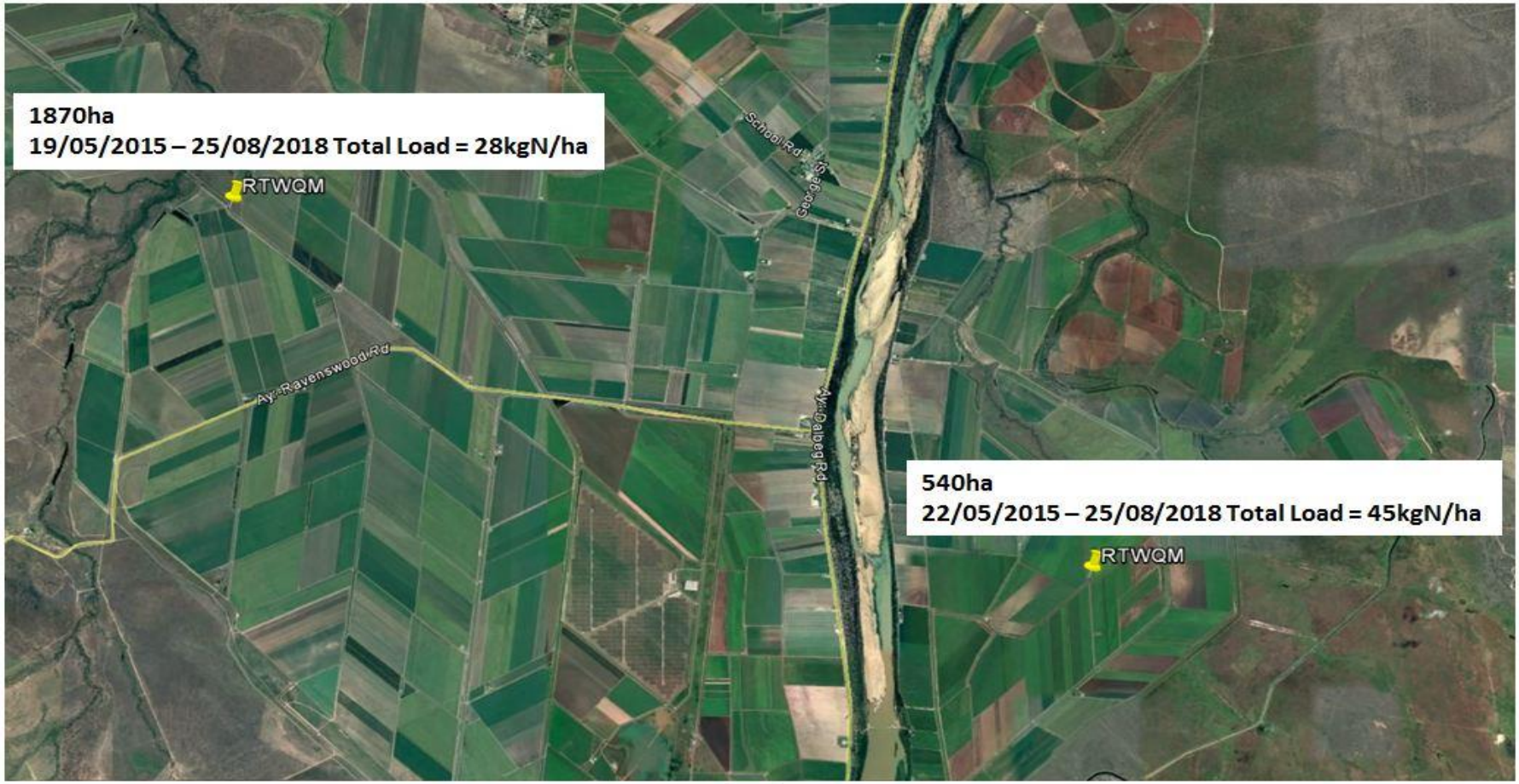
FARMACIST

Burdekin Productivity Services

PRODUCTIVITY PROFITABILITY SUSTAINABILITY

Real Time Water Quality Monitoring Trailer

Project NEMO: Burdekin Real Time Water Quality Monitoring Project Site



Queensland Government

Department of Natural Resources and Mines

Burdekin Productivity Services

PRODUCTIVITY PROFITABILITY SUSTAINABILITY

Australian Government

National Landcare Programme

FARMACIST

The future for recycle pits !

- 70% of BRIA have tailwater capture potential
- Need to have all farms capturing tailwater
- Costs $1500-2500/irrigated ha
- Over emphasis on reducing N applied
- (reverse tenders etc)
- Growers see enhancing tailwater capture as an obvious benefit to the environment and the farm

FARMACIST

Evan Shannon

evans@farmacist.com.au

0428779882