Measure to Monitor

(a sub-project of Smarter Irrigation in SA)
South East, South Australia

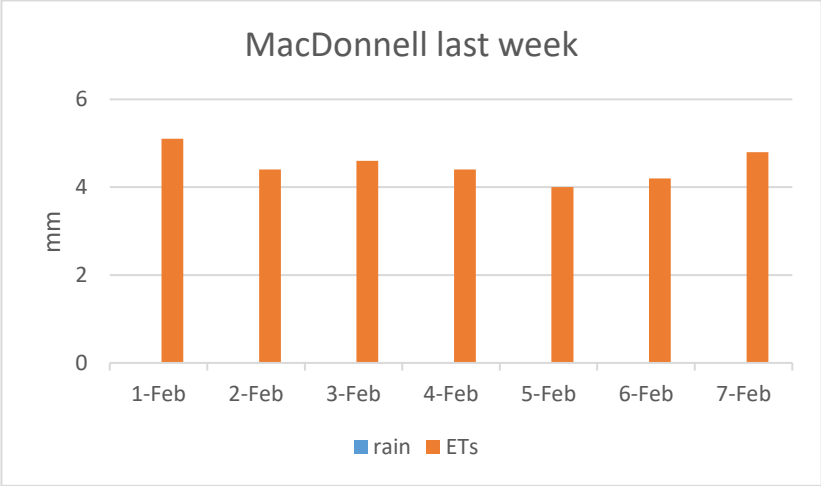
A weekly review of irrigation sensor and pasture growth data to improve irrigation scheduling throughout the year.

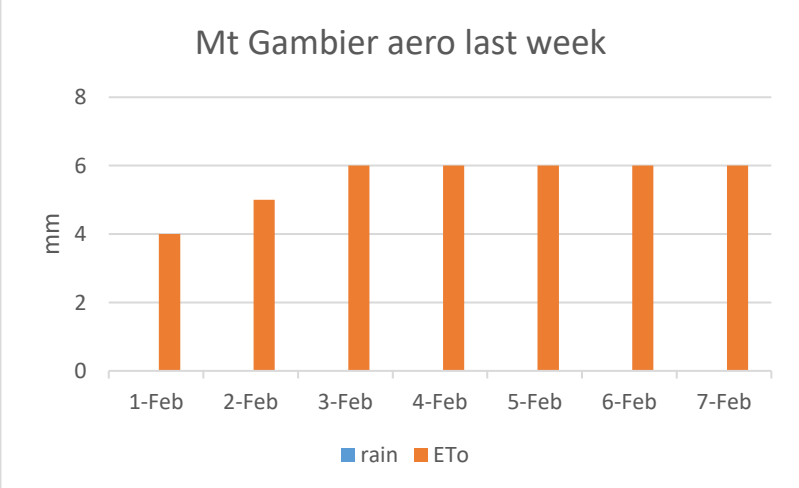
8th February 2018

Brought to you by Nigel Fleming, SARDI, ph (0401) 122 136

Previous 7 days ~ average Evapotranspiration & Rainfall

	ETo's (mm/day)	Rainfall (mm)
MacDonnell	4.5	0
Mt Gambier aero	5.6	0



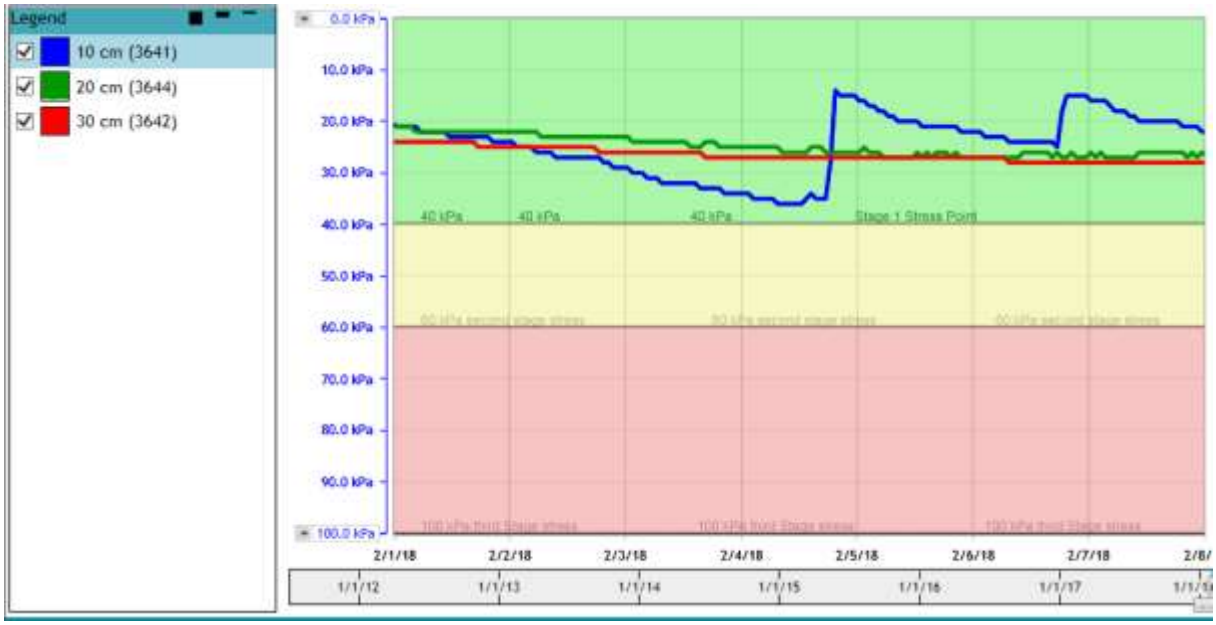


No rain last week. ETo fairly consistent during the week. Average ET of 5.6mm/day at Mt Gambier which was slightly higher than MacDonnell at 4.5mm/day.

What are the irrigation sensors telling us:

Allendale East:

Sensors are tracking nicely - all within the desired moisture range.



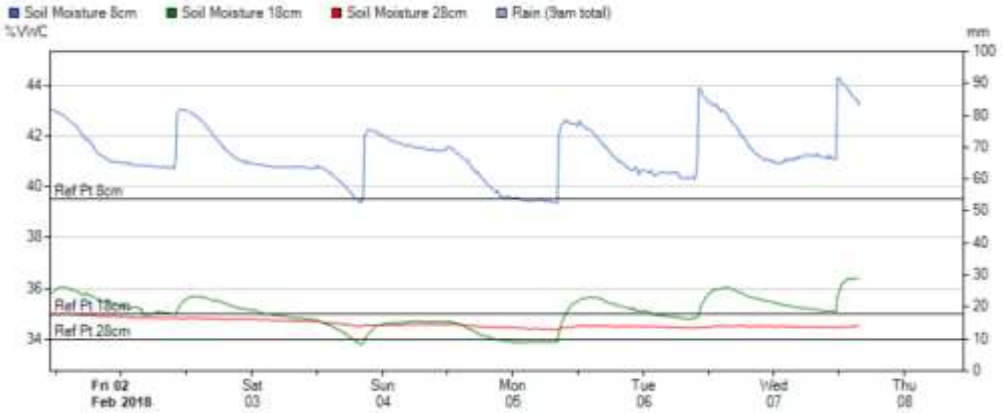
Mt Schank

The sensors are tracking as per usual.

Eight Mile Creek (pivot 6)

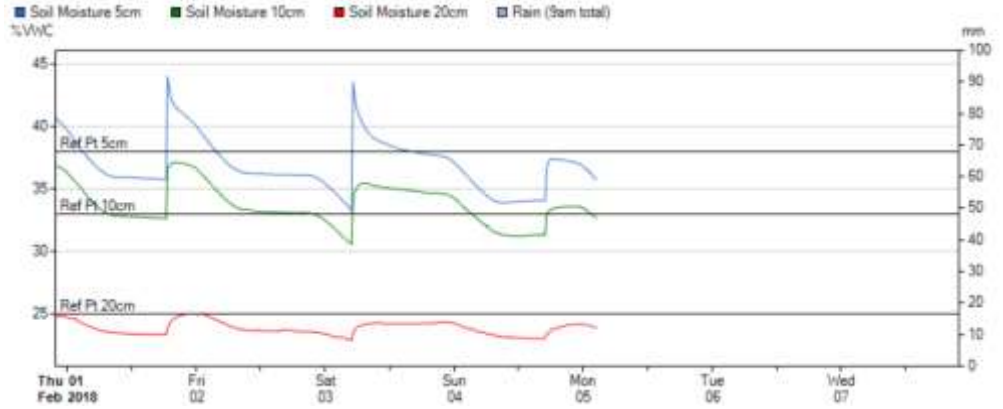
Dry Area

Data looks good. Consistently maintaining soil moisture in the root zone without leaching from excessive irrigation. This is successfully walking a fine line between under- and over-watering.



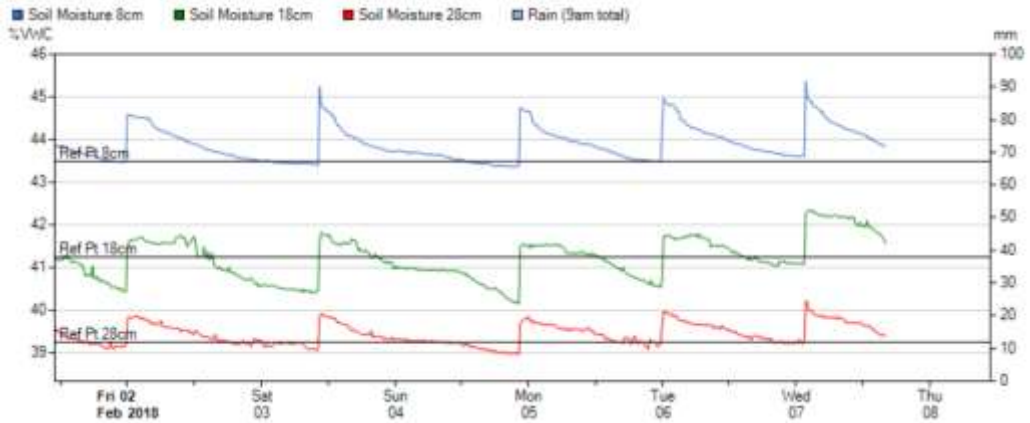
Normal Area

Similar trend to the Dry area, but with a data gap from Monday. Phone reception problems maybe?



Wet Area

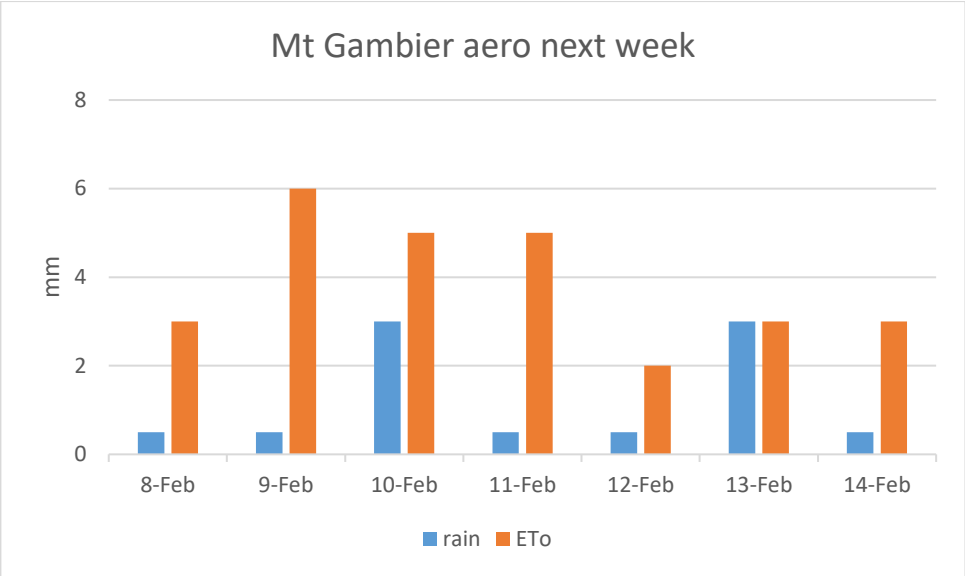
Tracking the same as last week.



Next 7 days ~ average Evapotranspiration & Rainfall

	ETo (mm/day)	Rainfall (mm)
Mt Gambier aero	3.9	8.5

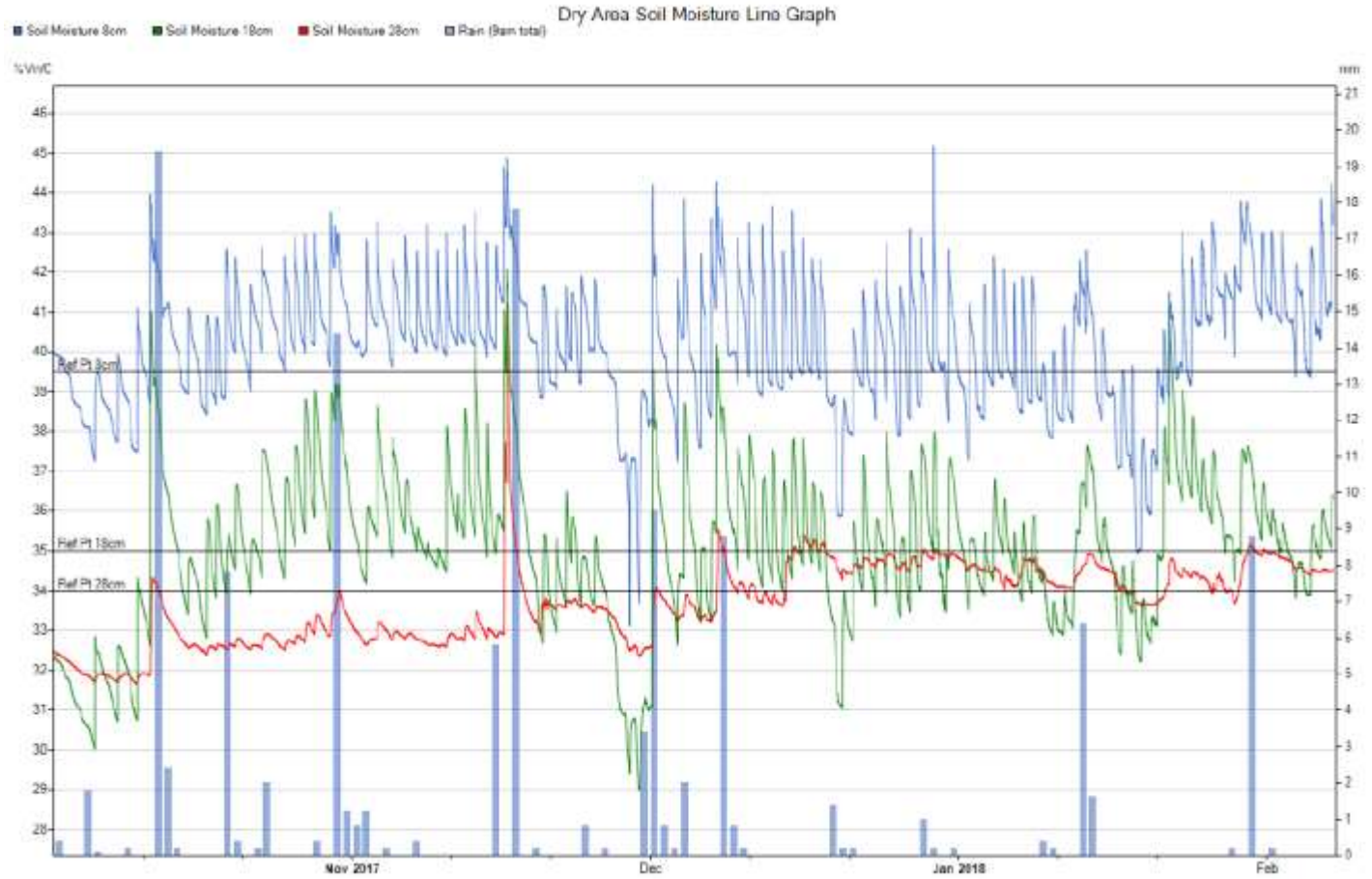
Traces of rain predicted for the coming week. Temperatures in low 30's for next few days, then low 20's next week. Predicted ET starting at 4 to 6mm/day, then 2 to 3mm/day next week.



Seasonal review of Pivot 6 soil moisture data

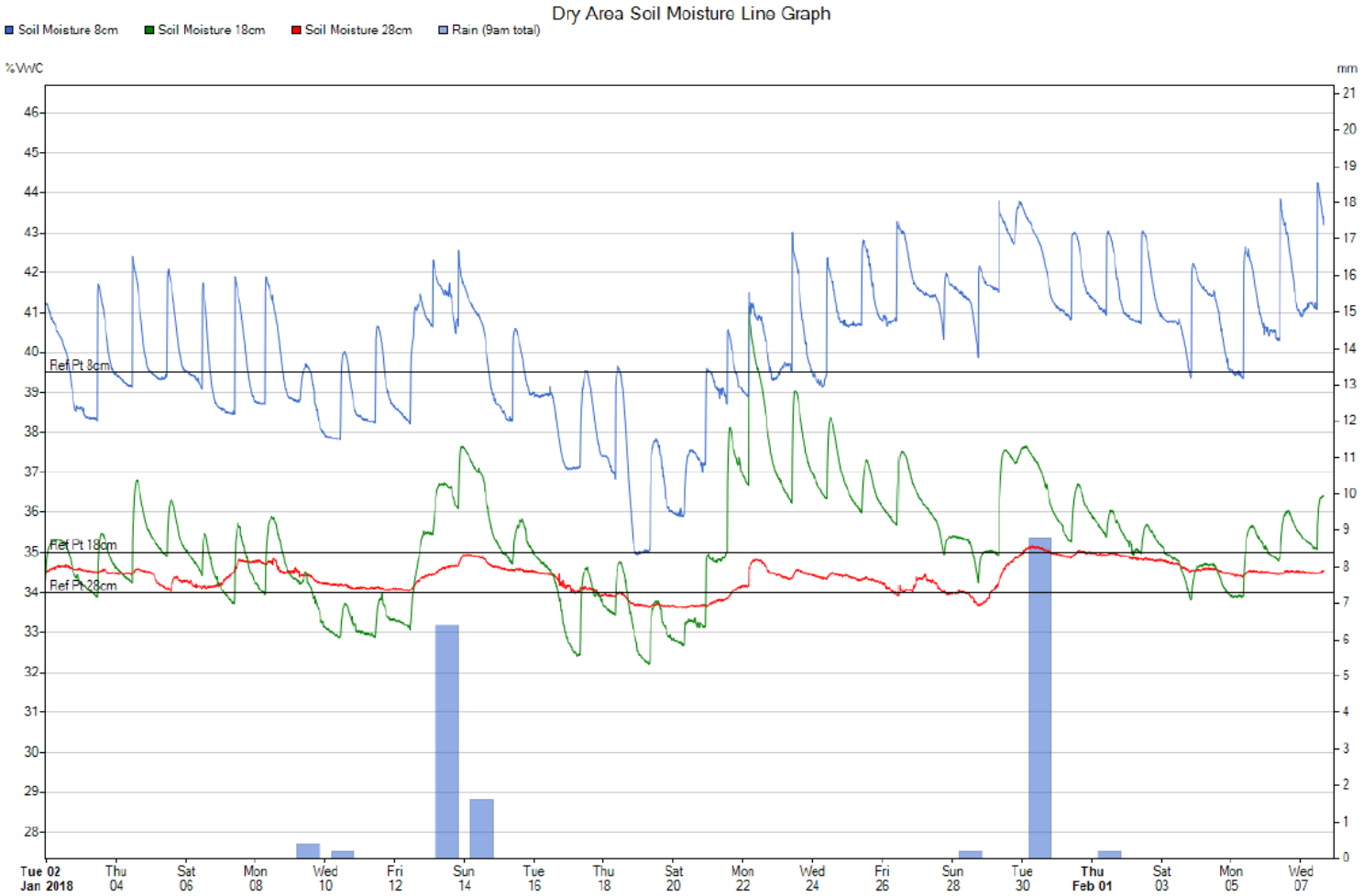
Kylie has put together soil moisture charts for each of the 3 sites at Pivot 6. For each site there is a chart covering October to February, and another covering January alone.

Dry Area October to February



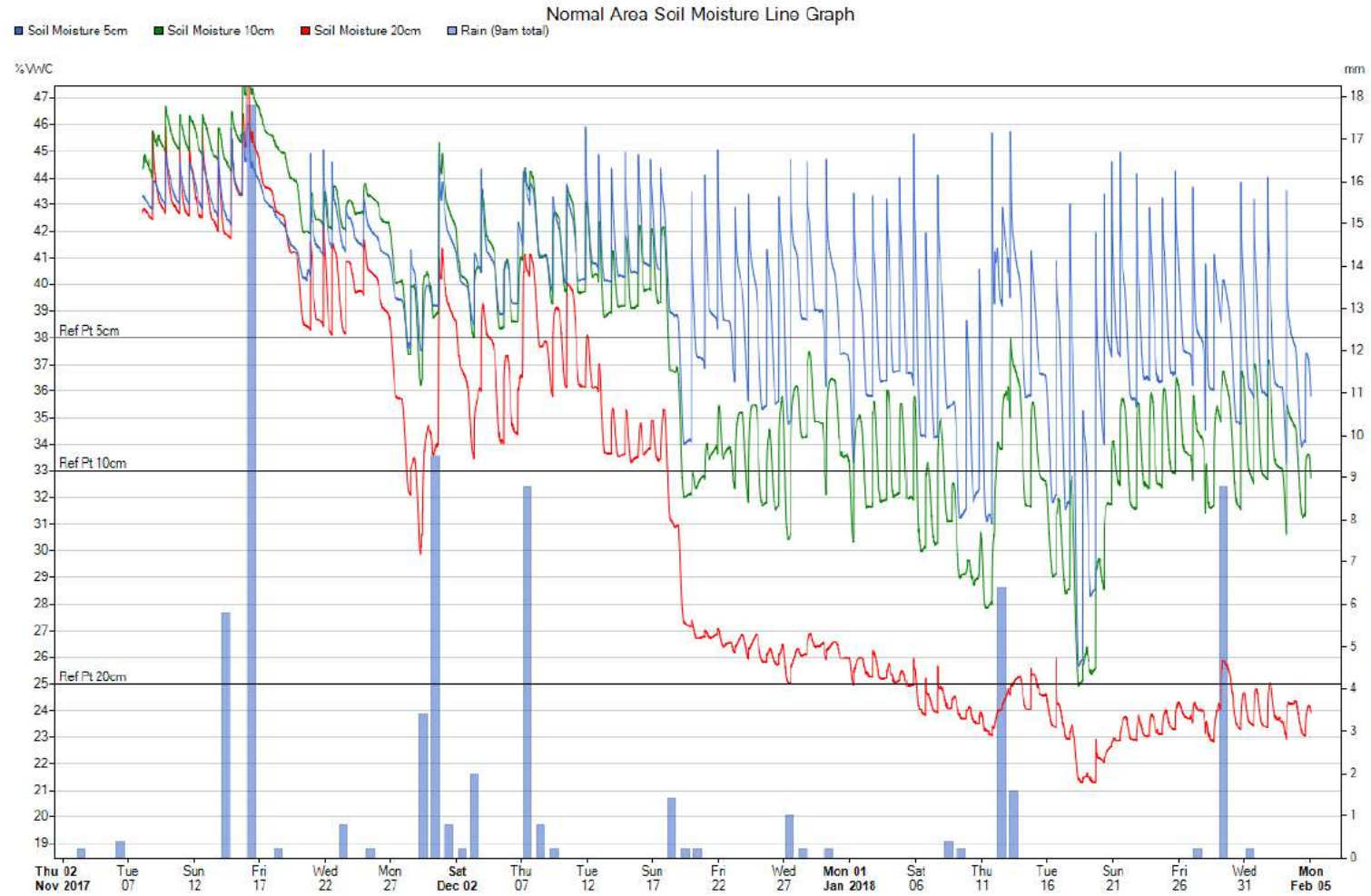
From October last year to February this year, overall moisture levels have been maintained consistently after an initial adjustment period in October/November, when some rainfall events lifted soil moisture levels at the deepest sensor. The ongoing stability seems to reflect both consistent irrigation management and effective soil moisture sensors which are giving quite stable readings

Dry Area January 2018



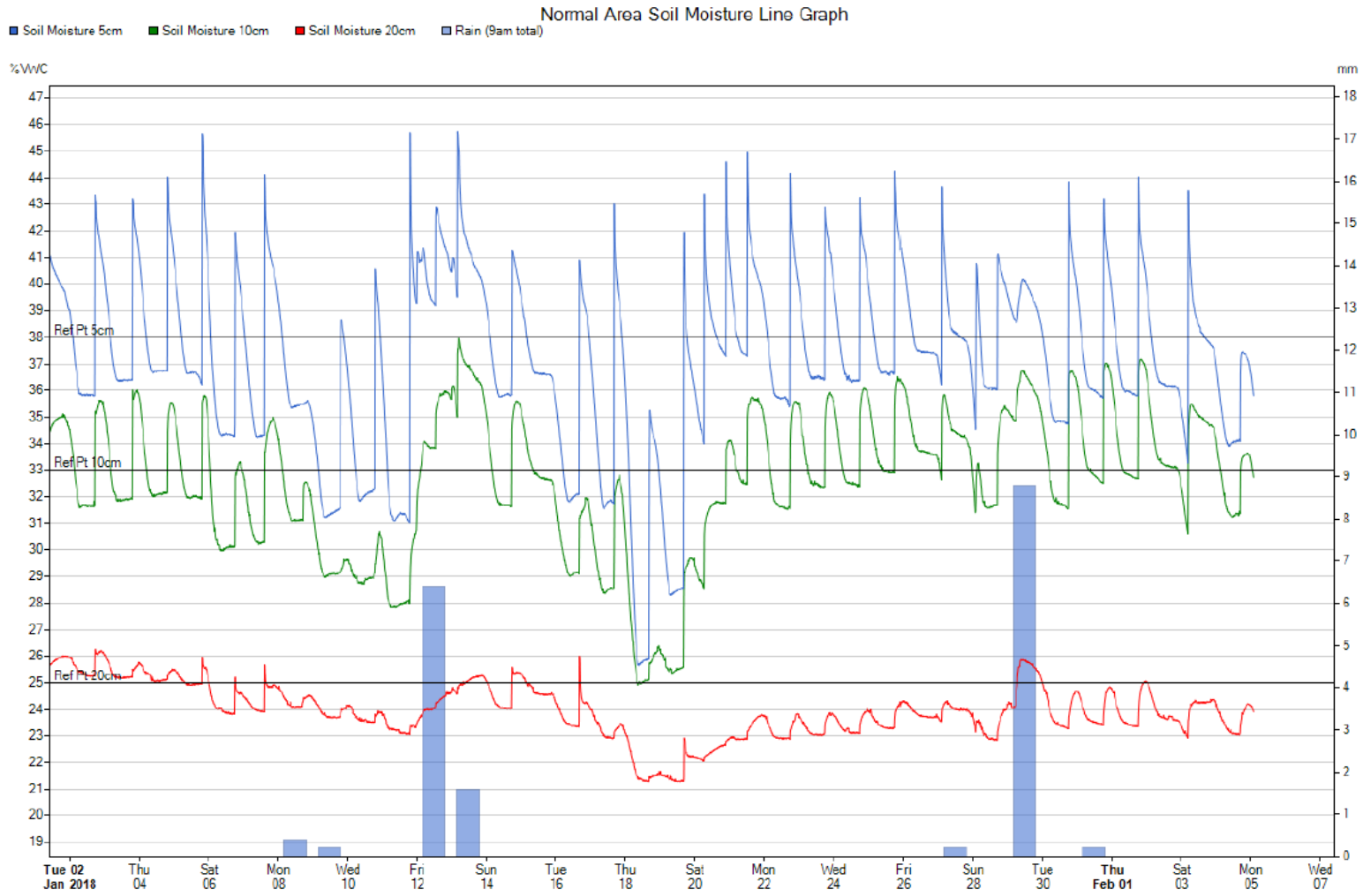
Very little irrigation water has gotten past the rootzone. The only times the deepest sensor has registered leaching are following rainfall events. A slightly drier period around 18-20 January can be seen (from hot spell).

Normal Area October to February



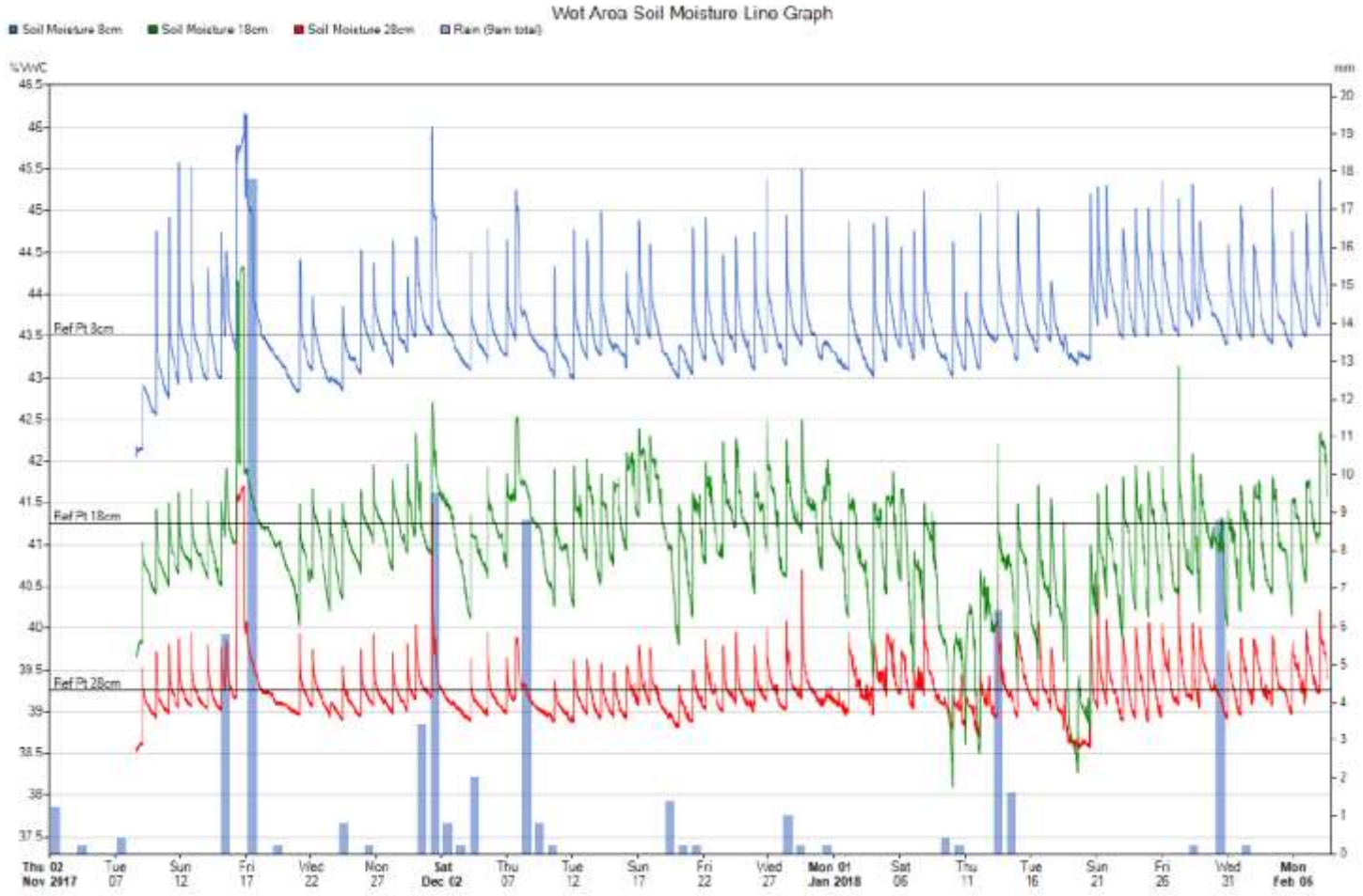
The Normal Area appears to have been a lot wetter early in the season. Following a curious drop in soil moisture mid-December, the soil moisture readings have been quite consistent. There is some leaching from irrigation at this site, typical of it being wetter than the Dry Area.

Normal Area January 2018



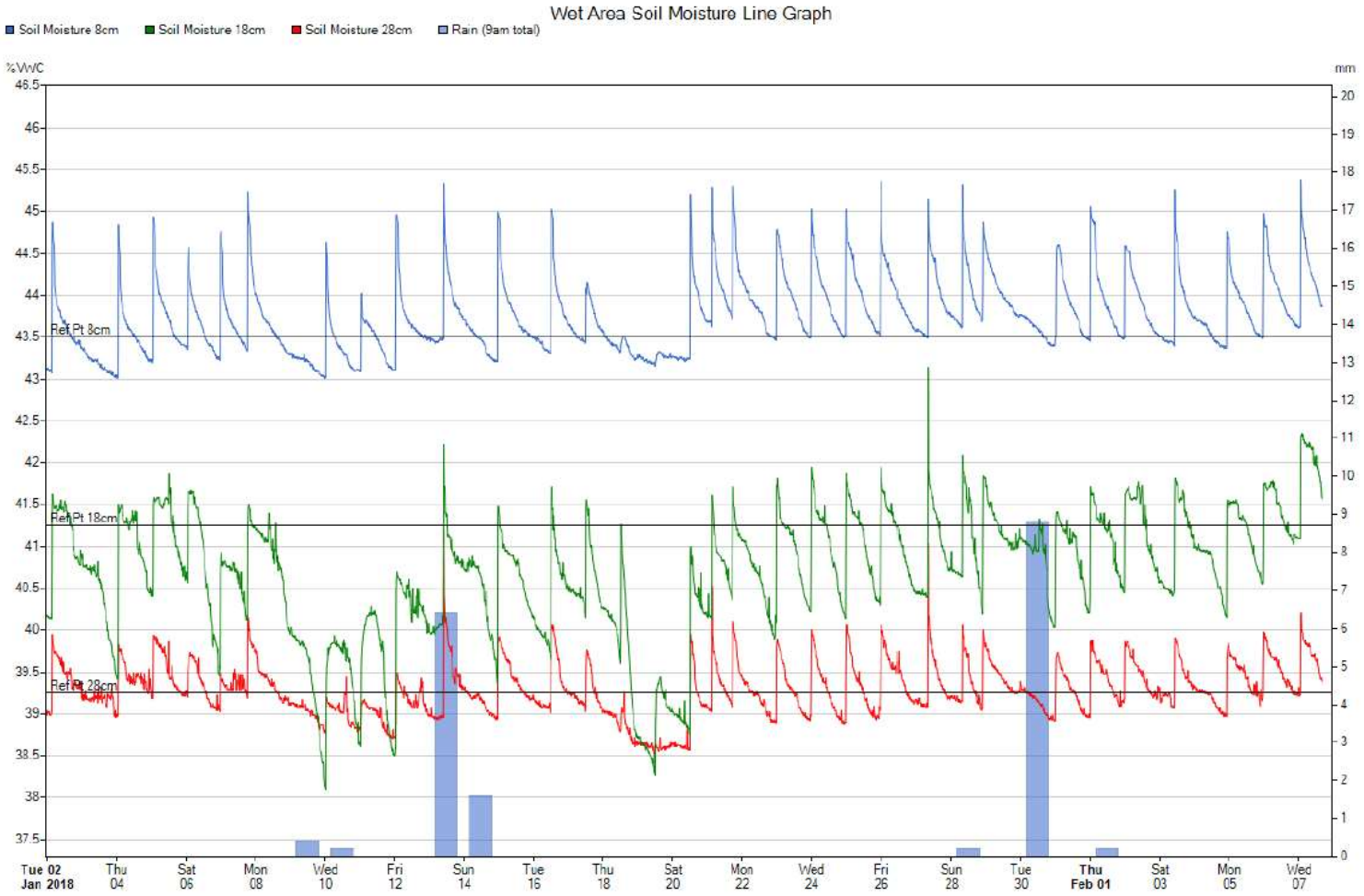
Sensor readings have been consistent and stable during January. The two moderate rainfall events did not make the soil overly wet as irrigation timing was adjusted to account for the rain.

Wet Area October to February



Despite the “scratchy” appearance of lines on this chart, the readings have been quite consistent and stable from October to February. All irrigations are moving some water past the rootzone, consistent with this being a wet area.

Wet Area January 2018



Again, the readings here are consistent through January. There is also less change in soil moisture at this site than at the others. For instance, in the last week of January the surface soil moisture at the Wet Area ranged from 43.5% to around 45.5%, a change of 2%. Surface soil at the Normal Area at the same time ranged from 36% to 44% (difference of 8%), while the Dry Area ranged from 39% to 43% (a difference of 4%). This is consistent with the Wet Area getting ongoing seepage from other parts of the centre pivot.

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Summary for the coming week

Temperatures cooling next week, traces of rain forecast.

Irrigators needed to have applied on average 39mm of irrigation water for last week.
The predicted weekly pasture water use (ET minus rainfall) for the Mt Gambier area in the next week is 27mm

* These figures are approximate and do not take into account rainfall on farm*

The intention of this service is not for the information to be used in isolation when making decisions about irrigation scheduling. ETo provides a relatively objective estimate of plant water use and provides another handy 'tool in the irrigation scheduling tool box.' Information in this email is only a guide and should only be used in conjunction with other tools including updated weather information.
For improved accuracy, the collection and use of individual farm rainfall measurements is advised.

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DairySA | Dairy Australia | Government of South Australia, Primary Industries and Regions SA | SARDI Research and Development