



## Fuel for thought

Australian vineyards use fuel for a range of purposes, including to power tractors, other vehicles, irrigation pumping and even frost fans. In this column, AWRI's Team Leader Engagement & Sustainability **Suzanne McLoughlin** and Viticulturist **Rochelle Schlank** explore some of the key questions raised with the helpdesk about storage and handling of bulk fuel on vineyards in Australia.

### *How do we define 'bulk fuel' in Australia?*

Bulk fuel in relation to dangerous goods is generally defined as any quantity exceeding 500 litres in a single container. It is often used for commercial and industrial purposes and is managed through specialised storage systems, which can be either aboveground or underground.

### *The term 'bund' is often mentioned in association with fuel or chemical storage – what does it mean?*

The Australian Standard for the storage and handling of flammable and combustible liquids (AS 1940:2017) is an important document outlining requirements and recommendations for the safe storage and handling of flammable and combustible liquids. According to AS 1940:2017, a 'bund' is defined as an embankment or wall which may form part of or all of the perimeter of an area (known as a 'compound') intended to retain spillage or leakage.

### *Is there a legal requirement for my bulk fuel tank to be banded?*

Under state-based Environmental Protection and Work Health and Safety (WHS) regulations, there is a general requirement to ensure the safe storage of bulk fuel to prevent environmental harm. Compliance with AS 1940:2017 is specifically mentioned in some state-based legislation, but it is generally recommended that businesses follow these guidelines to ensure the safe storage of bulk fuel.

Within these guidelines, AS 1940:2017 defines and differentiates between 'minor' and 'major' storage, based on the quantity of flammable and combustible liquids stored, along with the location of storage. For example, minor storage permits up to 5,000L unleaded petrol (Class 3: PG II flammable liquid) or 10,000L diesel (Class C1 combustible liquid) to be stored outdoors aboveground. Considering these minor

storage volume thresholds, it is expected that the majority of Australian vineyards would not exceed these volumes of stored fuel outdoors.

### *Are there specific requirements for bulk fuel storage for Certified Member of Sustainable Winegrowing Australia?*

The Australian Wine Industry Standard of Sustainable Practice Viticulture Code does not specify bunding requirements for fuel storage. Rather, it states that bulk fuel is to be stored to minimise environmental harm, by ensuring that bulk fuel storages are located, constructed and maintained to minimise the risk of environmental contamination and contain spillage. There is a requirement that fuel storage must comply with relevant state and federal legislation, that a current Safety Data Sheet (SDS) is kept for all bulk fuel stored on the property, and that workers are provided with appropriate protective equipment to be used in accordance with SDS requirements. ▶

*What do I need to consider if I do decide to install a compound with a bund around my tank for spill containment?*

In planning this type of storage, the priority should be the ability to contain the loss of contents of the largest fuel container (tank) kept onsite. This may include the use of an external bund to create an area around the tank (referred to as a 'compound' within AS 1940:2017), or perhaps a self-bunded tank system. Where liquid stored in above-ground tanks is above that of minor storage volumes, such tanks should be installed within a compound or have integral secondary containment (self-bunding).

These are three additional but key considerations for constructing a compound around bulk fuel tanks:

1. The compound needs to be capable of holding 110% of the volume of the largest tank inside the compound (e.g. 1,100L if the largest tank had a volume of 1,000L) or an equivalent of 25% of the total volume of all tanks within the bund, whichever is greater.
2. The compound including bund needs to be constructed from heat- and fire-resistant material.
3. The compound including bund should be designed to withstand the hydrostatic head when full.

In addition to the above, bulk fuel must be stored in tanks designed to meet safety and environmental regulations, as specified in AS 1940:2017.

*What are the siting requirements for a bulk fuel tank as per AS 1940:2017?*

For minor storage on open agricultural land in an area greater than two hectares:

- Keep all practices such as hot works, smoking and equipment that may cause ignition, away from the flammable and combustible liquid storage area.
- Keep the liquids at least one metre away from any boundary, dwelling or protected place, body of water, watercourse or environmentally sensitive area.
- Keep the ground at least three metres around the storage clear of combustible vegetation or refuse.
- Ensure all electrical equipment (computers, fridges, etc.) is kept at

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least three metres away from stored liquids.

- Consider the position of the tank in relation to natural ground slopes, diversion channels or kerbs to restrict potential flow of spillage.

*What are some handling requirements for bulk fuel I need to be aware of?*

If you have bulk fuel stored on your vineyard, you need to:

- Have a basic spill kit including absorbent material to clean up the contents of the largest tank kept, a sufficient number of sealable waste containers, portable pumps and decanting equipment, shovels, brooms, booms, drain covers and plugs.
- Have personal protective equipment (PPE) including eye protection, protective gloves, rubber boots, fire-resistant clothing and a respirator.
- Display placards for every installation in accordance with relevant state legislation, which defines the volume over which Dangerous Good signage is required.
- Ensure that quantities of flammable liquids exceeding five litres are not transferred from storage to point of use in open containers.
- Ensure all people handling flammable liquids are made fully aware of the hazards involved.

- Have safety data sheets on hand for each fuel type stored.
- Secure the storage against access by unauthorised persons at all times.
- Meet separation distances where volumes are below minor storage thresholds and if there are multiple minor storages on the same premises. In the case where this storage is outside, such minor storages should be separated by a distance of 15 metres.

### AWRI helpdesk

The AWRI helpdesk provides a free-of-charge technical advice service to Australia's grapegrowers and winemakers. For further information about fuel storage and handling, or any other technical matter, contact the helpdesk on (08) 8313 6600 or [helpdesk@awri.com.au](mailto:helpdesk@awri.com.au)

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### References and further reading

Agriculture Victoria 2022. Dangerous Goods (Storage and Handling) Regulations Exposure Draft. Available online: [www.vic.gov.au/sites/default/files/2022-09/Proposed-Dangerous-Goods-%28Storage-and-Handling%29-Regulations-2022.pdf](http://www.vic.gov.au/sites/default/files/2022-09/Proposed-Dangerous-Goods-%28Storage-and-Handling%29-Regulations-2022.pdf)

AgSafe 2023. The industry standard for the safe transport, storage and handling of AgVet chemicals. Version 1, Updated September 2023. Free to download for AgSafe members, or contact [info@agsafe.org.au](mailto:info@agsafe.org.au) to enquire about purchasing.

Australian Standard (AS) 1940:2017 The storage and handling of flammable and combustible goods. To purchase, visit [www.intertekinform.com/en-au/search/standard/?searchTerm=1940](http://www.intertekinform.com/en-au/search/standard/?searchTerm=1940).

Australian Standard (AS) 1692:2006 Steel tanks for flammable and combustible liquids. To purchase, visit [www.intertekinform.com/en-au/search/standard/?searchTerm=1692](http://www.intertekinform.com/en-au/search/standard/?searchTerm=1692).