Environment Agency
Advice position during exceptional weather–
Slurry and milk spreading on agricultural land

Land spreading of slurry or milk in exceptional weather conditions (see below) can present a serious risk of pollution. All efforts must be made to follow the hierarchy of options given in this document before spreading takes place.

Where land spreading is the last resort, we won't recommend enforcement of regulation where slurry or milk is spread to waterlogged, snow-covered or frozen land, unless the activity has caused or is likely to cause pollution or harm to human health, and provided that;

- existing farm storage meets the regulatory minimum and other options are **not** available;
- there are no imported materials taking up storage or being spread, and;
- we have had prior discussion with the farmer.

Background

This advice is provided to help our staff advise farmers on the safe management of slurry and milk waste in exceptional weather conditions. The advice only covers livestock slurry (which includes dirty water), and waste milk.

CoGAP[1], the relevant waste exemptions for spreading milk[2], and the NVZ Regulations[3], all advise or regulate against spreading organic manures to land that is waterlogged, snow covered, or has been frozen for 12 hours or more in the preceding 24 hours. This is because of the high risk of pollution to surface water or groundwater.

Farmers must understand the importance of having at least the minimum storage capacity requirement, as set out under NVZ[3] and SSAFO Regulations[4]. However, in times of climatic uncertainty this minimum will not cover all 'reasonably predictable' events, so farmers should be encouraged to provide an additional level of storage capacity as a contingency measure.

Exceptional weather may lead to difficulties with milk being picked up from farms due to access, and there may be limited capacity on farm to accommodate this.

Individual farm businesses have to decide what additional storage for slurry beyond the regulatory minimum is appropriate for them.

[1] Protecting our Water Soil and Air, (A code of good agricultural practice for farmers, growers and land managers) Defra 2009

[2] Spreading waste on agricultural land to confer benefit (U10)

[3] Nitrate Pollution Prevention (England) Regulations 2008 (as amended 2013)

[4] Water Resources (Control of Pollution) (Silage Slurry and Agricultural Fuel Oils) (England) Regulations 2010 as amended 2013 (SSAFO)

Our regulatory approach

In normal circumstances there is no need or justification to spread slurry or milk to land that is waterlogged, flooded or snow covered, or has been frozen for 12 hours or more in the preceding 24 hours. Where spreading occurs during exceptional weather conditions we can't guarantee not taking enforcement action, but the weather conditions can be taken into account when staff consider if spreading was unavoidable.

In NVZ areas farmers will be in breach of their Cross Compliance responsibilities. Although, we routinely report all Cross Compliance breaches to the Rural Payments Agency (RPA), we are not obliged to. Where a farmer has engaged with us to overcome the situation as described at the top of this document, we may consider it better not to report a breach to maintain a good working relationship with the farmer. The primary aim is to prevent pollution and to minimize possible pollution incidents rather than to penalize farmers.

What are exceptional weather conditions?

Exceptional weather conditions are those that surpass what is common or usual, or can be reasonably expected. For example, a 1 in 20 year event is unlikely to be considered exceptional, whereas a considerably more severe event that can't realistically be planned for can be.

It's clear that just having the regulatory minimum storage capacity requirement is not going to provide adequate capacity in all weather related circumstances. Some farms may not meet the minimum requirement because they are operating with old storage systems not required to meet the SSAFO Regulations.

For us to consider a case of mitigation for exceptional weather conditions, a farmer must in the first instance, demonstrate compliance with the minimum storage capacity requirement based on their present (rather than their historical) farming activity.

What is reasonable in respect of milk is more complex as weather or civil circumstances (such as strikes) can prevent tankers from making collections from farms. However, it is reasonable to expect a farmer to have a contingency plan in place, except for prolonged circumstances.

Enforcement

The above approach still allows us to operate within our stated approach to enforcement, please see our Enforcement and Sanctions guidance.

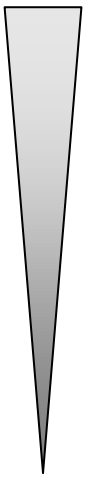
What action should farmers take?

1. Measures should be taken to reduce the amount of slurry (including dirty water) produced on a daily basis, such as:
    - Washing down a dairy parlour with a low volume hose system (0.6 cubic metres per cow per month or 20 litres per cow per day), where it would not compromise milk hygiene standards. Removing excess dung with a brush or squeegee before hosing down will help reduce the amount of wash water needed.
    - Keeping animals on straw if possible, to produce solid manure (FYM) rather than slurry.
    - Diverting uncontaminated surface water away from dirty yard areas, and;

- Keep/move livestock onto the minimum yard area necessary
- Install/maintain/repair gutters and downpipes, especially on roofs that drain onto dirty yard areas
- Consider covering exposed dirty yard areas.

2. Farmers should consider in advance contingency arrangements for their business using the following hierarchy of options:

Most favoured options



Storage***** at the place of production;

Storage***** at the place of use;

Disposal to an off-site Anaerobic Digestion[#] plant, or other effluent treatment plant (including Sewage Treatment Works);

Storage***** at a third party location;

Spreading on low run-off **risk** land**.**

***** including hire or purchase of appropriate temporary storage. *See appendix*

[#] milk can only go to 'permitted' AD sites

Least favoured options

3. Additional practical advice on storage and landspreading of slurry and milk

- **SAFETY NOTE:** Mixing milk with slurry can increase the risk of lethal or explosive gases, for example methane, carbon dioxide, ammonia, and hydrogen sulphide.
- Slurry and milk must only be spread on land with the lowest run-off risk.

  Low run-off risk land:
  - has an average slope of less than 3 degrees;
  - does not have land drains (other than sealed impermeable pipes);
  - in the last 12 months, has not been pipe drained, mole drained, or sub-soiled;
  - does not have a shallow soil (<30 cm) above fissured rock;
  - has a sufficient depth and suitable type of soil above groundwater to prevent pollution;
  - is not within a designated groundwater Source Protection Zone 1;
  - is at least 50m from surface water or a conduit leading to a surface water, and at least 50m from springs, wells and boreholes where groundwater is used for human consumption;
  - doesn't have compacted soil or a soil surface which is capped (e.g. only spread where the soil is permeable and has a good structure).

- Slurry or milk should be spread thinly and widely, at an application rate not exceeding 20 m^3/ha. A lower application rate should be used if there is a risk/evidence of run-off that could enter surface water.
- No more slurry must be spread than is absolutely necessary (e.g. to prevent a store from overflowing).
- Where slurry or milk is spread to land, the activity must be regularly monitored, including checking adjacent watercourses, to ensure pollution is not happening and is not likely to happen.
- Milk should only be landspread when a U10 waste exemption has been registered with us.

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Appendix

Advice on Temporary Slurry Storage

Introduction

Short term extra storage may be provided on a farm or group of farms. Options could include:

- Re-using/reinstating disused stores on farms, including tanks reclaimed from elsewhere;
- Installing new tanks or lagoons;

Regulatory matters

- Farmers should check with the Local Planning Authority for any planning requirements, making clear that this is a temporary arrangement.
- For temporary installations we can consider reduced requirements for slurry storage compliance with the SSAFO Regulations, as described in the guidance below.
- Farmers must de-commission all temporary facilities as soon as the current difficulties are resolved.
- If farmers intend to retain the store for long term use it must be re-assessed for full SSAFO compliance, and planning approval (if that is appropriate).
- Farmers must protect the H&S of all users. HSE sheet AIS9 provides advice on safety fencing.

Practical matters

- If a farmer needs new or additional permanent storage, then it needs careful planning, e.g. to avoid wasting money.
- We anticipate that earth bank lagoons, lined lagoons or possibly slurry bags will be the most likely installations for temporary storage.
- For shared facilities:
    - Farmers will need to consider any biosecurity risks;
    - The management arrangements, and where the ultimate responsibility lies, must be agreed between the parties and written down;
    - Farming organisations may be able to help to broker shared facilities.

Regulatory position

Facilities that store slurry must normally comply with the SSAFO Regulations. However, the full requirements can be waived for stores that will be used for less than twelve months. Temporary stores are expected to meet the requirements set out below.

Requirements

- The Environment Agency must be notified before construction.
- Temporary storage must only be considered where existing facilities are inadequate.
- Each individual location must be agreed with us (although generic designs may be used).
- Tanks, liners and slurry bags must be installed to manufacturer’s instructions.

- The base of earth bank lagoons must be above the water table – it is recommended that there is at least one metre of clay subsoil beneath the proposed base.
- A trial pit is required to confirm the depth of the clay layer; the resulting hole must be backfilled and puddled in.
- Liners must be used where there is any doubt about soil permeability.
- Lower grade liners should suffice for temporary storage (provided the site is not a high groundwater risk area). Use higher grade liners for high risk areas. (See also 'permeability and liners' below.)
- Careful initial monitoring must confirm the integrity of the store.
- Site stores at least 10 metres from watercourses and land drains, and 50 metres from groundwater sources. Temporary trial trenches are recommended if there is any doubt about the presence of land drains.

Permeability and liners

Basic soil suitability can be assessed using hand texturing or a jar settlement test (see below).

There are a wide range of liners available for lining storage lagoons. Plastic liners such as polythene or PVC are widely available and generally cheaper than the butyl rubber alternatives.

The thickness of liner used needs to be appropriate to the particular on-site conditions (site sensitivity, soil porosity and so on). Construction Industry Research and Information Association (CIRIA) recommend a minimum of 1.5 millimetre thickness for liners, but this is for liners expected to perform for several years. Liner thicknesses in the range of 0.5 to 1.0 millimetre thickness should be suitable in most cases for temporary stores.

Where sheets have to be joined to cover a large area, the supplier can advise on minimum thickness and methods to ensure that joints are properly sealed. Thin liners are more susceptible to puncturing, so they must be laid on top of approximately 50 millimetres of sand, or a geotextile membrane. Take extra care during installation of thinner liners. Treat soil with weed killer prior to installation to prevent puncturing from below.

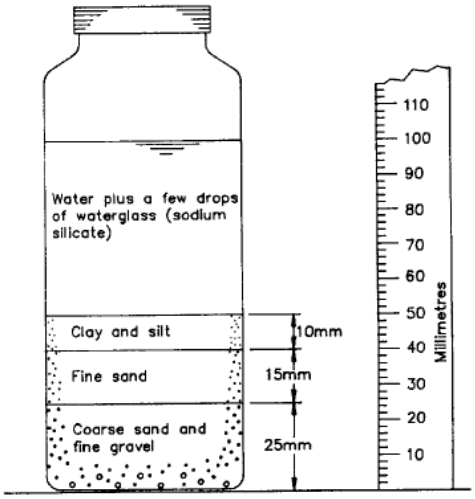
Above ground storage

Unless earth banks are fully engineered, filling earth bank stores above the original ground level is best avoided. In any case, a 750 millimetres freeboard must be maintained.

Soil clay content tests

By Mason, P A (1992) Farm waste storage: guidelines for construction, R126, CIRIA, London (ISBN: 978-0-86017-352-6). Go to: CIRIA Report 126

Box 35 *Initial assessment of soil clay content: settlement test*



The proportions of the various component materials that form a particular soil may be estimated with reasonable accuracy by making the following test. Half fill a narrow parallel-sided glass bottle and shake well to mix the soil and water thoroughly. If waterglass (sodium silicate) is available add 2 or 3 drops to water and stir the soil and water mixture vigorously. Stand the bottle on a firm surface and allow the soil to settle for 24 hours. Coarse sand will settle out immediately, fine sand within a few minutes and the silt and clay last. These will stratify into clearly visible layers from which the approximate solid proportions can be estimated by measuring the depth of each layer.

For example:

Total depth of soil = 50 mm

Proportion of clay and silt = $\frac{10\text{ mm}}{50\text{ mm}} \times 100 = 20\%$

Proportion of fine sand = $\frac{15\text{ mm}}{50\text{ mm}} \times 100 = 30\%$

Proportion of coarse sand and fine gravel = $\frac{25\text{ mm}}{50\text{ mm}} \times 100 = 50\%$

Source: MAFF Bulletin 202[58]