

CODE OF PRACTICE FOR THE PREVENTION OF WATER POLLUTION FROM THE STORAGE AND HANDLING OF FLUID FERTILISERS

PART 3 - USERS

2021



PRODUCED IN CONSULTATION WITH



PART 3 – USERS

This Code of Practice for the Prevention of Water Pollution from the Storage and Handling of Fluid Fertilisers (hereafter referred to as the 'Code') is in three parts:

PART 1 – SUPPLIERS

PART 2 – TANKER DRIVERS

PART 3 – USERS

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PREFACE

As a user of fluid fertilisers, you are handling materials which, if spilled in quantity, can be very damaging to the water environment. This Code of Practice has been drawn up to help you to reduce the risk of causing water pollution as a result of losing fluid fertiliser during storage or handling at the farm.

There is clear economic benefit to the user in reducing losses of nutrients to the wider environment, whether from accidental spillage, poor management practices or vandalism. Any of these could result in water pollution which could have serious consequences, both legal and financial. The costs of pollution clean-up and any fish restocking for example would be charged to the polluter or relevant parties. With some forethought and planning for emergencies you should be able to answer the question: 'What would be the consequences of a major spillage of fluid fertiliser at your site?' You must know your site and the surrounding drainage system and what to do and how to react to an accident or emergency so as to minimise the chances of causing pollution.

Preplanning is essential so that you avoid having to deal with a real incident unprepared. Pollution of surface waters by fertiliser is a serious matter but at least it is possible to monitor it directly and carry out remedial action, albeit at some cost. If a major spillage of fluid fertiliser onto the ground is allowed to soak away, any groundwater contamination will be impossible to monitor except by costly techniques and may be impossible to remedy. Pollution of groundwater is potentially very serious because this water can be used

extensively for public drinking water supplies and for industrial and agricultural use. The environment agencies in England, Wales, Scotland and Northern Ireland have identified all groundwater resources and have specific policies for the protection of sources through the control of activities and development in close proximity to source extraction boreholes. Groundwater resources and extraction boreholes are valuable and expensive assets. It is essential that those storing and handling fluid fertilisers are aware of the vulnerability of nearby groundwater sources so that this can be taken into account when siting storage facilities and drawing up emergency plans. The objective must be to ensure that pollution is prevented and that in the event of a major spillage, fluid fertiliser is not allowed to soak through the soil directly, or by way of drains and soak-aways in these vulnerable areas.

If you require further more specific information about the sensitivity of your site with respect to the water environment the environment agencies are always pleased to offer advice. AIC also publishes a **Code of Practice for the Prevention of Water Pollution from the Storage and Handling of Solid Fertilisers**.



PART 3 – USERS

3.1 INTRODUCTION

3.1.1 This 'Code of Practice for the Prevention of Water Pollution from the Storage and Handling of Fluid Fertilisers, (Part 3, [Users])' is a practical guide to help users avoid loss or spillage of **fluid fertiliser** which could cause water pollution.

3.1.2 This Code is without prejudice to any legal obligations safety requirements or other codes of practice.

3.1.3 Following this Code is not a defence against a charge of causing pollution, although it should reduce the chance of pollution occurring and will help provide proof of due diligence and good working practice.

3.1.4 Users should ensure that they carry adequate insurance cover against liability for pollution.

3.1.5 This Code does not cover guidance for the appropriate usage of **fluid fertiliser**. Reference should be made to Protecting Our Water, Soil and Air: a Code of Good Agricultural Practice (Defra - England), Prevention of Environmental Pollution from Agricultural Activity (Scottish Government - Scotland), and the Code of Good Agricultural Practice (DARD – Northern Ireland), and also to published fertiliser recommendations. See Fertiliser Manual (Appendix 1).

3.1.6 This Code has been drawn up in consultation with the Environment Agency England, Natural Resources Wales, the Scottish Environment Protection Agency and the Northern Ireland Environment Agency. (Appendix 1)

3.2 DEFINITIONS

For the purposes of this Code, the term:

3.2.1 'User' shall mean the farmer, grower, application contractor and organisation or individual responsible for the end-use of fluid fertilisers. Delivery and transportation on the public highway is covered in part 2 of this Code.

3.2.2 'Supplier' shall refer to the manufacturer, importer, distributor, merchant, haulier or other organisation or individual who supplies the **user** with **fluid fertiliser**.

3.2.3 'Tanker Driver' shall mean the driver of any vehicle designed to transport and deliver liquid fertilisers in bulk or semi bulk Intermediate Bulk Containers (IBCs)

3.2.4 'Fluid Fertiliser' shall include all solution fertilisers (otherwise known as liquid fertilisers), suspension fertilisers and aqueous ammonia solutions not exceeding 34% ammonia Organic-based fluids containing plant nutrients such as farm slurries, AD Digestate, sewage sludges or other effluents are expressly excluded.

3.2.5 'Bund' shall mean a strongly constructed secondary containment with impermeable walls and floor.

3.2.6 'Watercourse' shall include all surface water whether coastal water, estuary, lake, pond, river, stream, canal and field ditch, (even when dry), unless it is a containment ditch.

3.2.7 'Groundwater' shall be defined as water which is below the surface of the ground in the saturation zone and in direct contact with the ground and/or water held in underground rock formations (aquifers). For the purposes of this Code it is considered that pollution of **Groundwater** could result from incidents occurring where such aquifers outcrop at or near the soil surface, or occurring within 50 metres of a water abstraction borehole, or where no protection of the underlying water exists e.g. where there are soakaways, swallow holes or quarries.

3.2.8 'Major Spillage' shall refer to a spillage which cannot be controlled and/or which involves significant loss of the spillage causing pollution of a **watercourse** or of **groundwater**.

3.3 GENERAL PRINCIPLES

3.3.1 Fluid fertilisers can be applied to a field very accurately, thereby avoiding unwanted and potentially damaging applications to field margins, hedge bottoms or ditches. As with all nutrient sources, including solid fertilisers and organic manures and wastes, care must be taken with their storage, transfer and transportation. Detailed guidelines are given but attention is drawn to six main points:

- Fixed or mobile stores must be sited with care,
- Any spillage which occurs must be properly dealt with to avoid pollution,

<ul style="list-style-type: none"> • Stores, valves and pipework must be properly maintained and inspected, and records kept, • Bowsers or tankers, before being moved, must have their hatches/ lids securely closed. • Valves must be secured so that they can only be opened by authorised personnel, • There must be a spillage contingency plan. Know what to do in an emergency. 	
<p>3.3.2 All procedures, equipment and installations should be designed to avoid any spillage of fluid fertilisers.</p>	<p>3.4.4 Existing sites, and preferably all new sites, should be in areas where groundwater vulnerability is low and not in highly sensitive areas. Sensitive areas are in the proximity of boreholes, wells, springs, aquifer outcrops, soak-aways, swallow holes, quarries or within 50 metres of abstraction for potable supply. For further guidance on groundwater protection contact the appropriate environment agency (Appendix 1) or refer to the Environment Agency web-based resource 'What's in your backyard' (See Appendix 1).</p>
<p>3.3.3 In the event of such spillage, appropriate procedures and resources should be in-place to prevent the pollution of watercourses or groundwater.</p>	<p>3.4.5 Consideration should be given as to where any spilled fluid fertiliser would flow in the event of an accident during loading or unloading, or if the store were to develop a leak or be vandalised. Fire-fighting run-off also presents a risk. The total potential spillage must be capable of containment in an impermeable area. Where such areas are on the outcrop of an aquifer, the need to protect groundwater must be considered.</p>
<p>3.3.4 Frequent inspections and regular maintenance should be made of all pipework, valves, tanks, bowsers, lagoons, hard-standing, bunds (if provided) and security systems to minimise the risk of accidental leakage or failure. Records should be kept of this maintenance and inspection.</p>	
<p>3.3.5 Tanks should always be bunded</p>	
<p>3.3.6 The servicing and filling of third party owned tanks is not recommended</p>	
<p>3.4 SITING OF FLUID FERTILISER STORAGE TANKS, LAGOONS AND BOWSERS</p>	
<p>3.4.1 Suitable siting of storage tanks, lagoons and bowsers is critical to avoid potential pollution of watercourses or groundwater in the event of any spillage.</p>	<p>3.4.6 The potential route of any escaping fluid fertiliser should be channeled to a suitable impermeable area by means of permanent soil banks and/or kerbs where necessary. Care should be taken to prevent any spilled fluid fertiliser from running down a road and thus into drains. Soil is a better and more absorbent temporary barrier than sand.</p>
<p>3.4.2 Good, well-constructed vehicular access for large delivery and off-take vehicles is essential. An impermeable hard-standing should be provided at the point of delivery to enable any minor spillage to be contained.</p>	<p>3.4.7 Care needs to be taken in every case with the appropriate siting of tankers, mobile tankers or bowsers. Tankers, mobile tanks and bowsers should all be sited so as to minimise the risk of any spillage of fluid fertiliser entering a watercourse or groundwater, even though such siting may be only temporary.</p>
<p>3.4.3 It should not be assumed that existing sites are correctly sited, even if no pollution problems have arisen. No site should extend to within 10 metres of a watercourse or a drain leading to a watercourse.</p>	<p>3.4.8 No fluid fertiliser shall be received into bowsers supported on parking legs unless these legs are resting on made-up roadway or concrete of known and adequate thickness, or are resting on a support of suitable size and thickness, to support the loaded weight of the bower without it sinking into the ground and becoming unstable.</p>



<p>3.4.9 The user has a responsibility to consider and advise on the correct siting of any tankers or bowsers, including those supplied by a haulier or application contractor. The user should take into consideration the location of surface water drains and land drains. The user must take care to ensure that when laden tankers or bowsers are being moved on their property they are not driven so close to a watercourse or causeway that the bank is unable to support the weight. Weak bridges must be avoided.</p>	<p>3.5.5 All outlet/inlet valve(s) and sight tubes/gauges should be positioned or protected so that they are not vulnerable to vandalism or accidental damage, particularly from passing vehicles. All valves should be inoperable when unattended, and on bunded tanks should be wholly within the bund. Sight tube valves/gauges should be fitted, closed and locked when not in use, and inside any bund.</p>
<p>3.4.10 Fluid fertiliser stores should be sited away from public access to minimise the risk of vandalism, with the outlet(s) and sight gauges securely locked or inoperable when unattended. The stores should be made as secure as feasible, with consideration given to deterrent lighting.</p>	<p>3.5.6 With the exception of aqueous ammonia, fluid fertilisers may be stored in lagoons suitably designed and constructed with impermeable walls, floor and cover.</p>
<p>3.5 FLUID FERTILISER STORAGE</p> <p>3.5.1 Fluid fertilisers may be stored in suitable above-ground tanks or, with the exception of aqueous ammonia, in suitably designed lagoons (see 3.5.6). They should not be stored in unsupported flexible containers.</p>	<p>3.5.7 Users should conduct a thorough, formal and recorded check of all tanks, bowsers and lagoons at least once a year, in addition to normal everyday observation, for damage or corrosion which might give rise to leakage or failure. Appropriate measures should be taken to repair the storage if necessary and records kept of all inspections and repairs. Advice on inspection and maintenance should be sought from the supplier of the fluid fertiliser.</p>
<p>3.5.2 Permanently-sited tanks and fittings must be fit for the purpose, must be of a suitable material resistant to corrosion and must be sited on a base or footing designed to support the weight of the full tank. Tanks should always be bunded.</p>	<p>3.6 DELIVERIES AND TRANSFERS</p> <p>3.6.1 A tanker driver delivering fluid fertiliser, who considers the condition of the store, valves, pipework, access or siting inappropriate, should refuse to off-load the delivery.</p>
<p>3.5.3 The outside of steel tanks should be protected against corrosion with a suitable paint.</p>	<p>3.6.2 The user should be satisfied that the supplier of fluid fertiliser is operating in accordance with this Code, Part 1, [Suppliers], and has drawn up adequate emergency procedures for use in the event of a major spillage occurring during fluid fertiliser transfer onto farm. The user should ensure that they are able to assist as necessary to contain any spillage and to avoid pollution of any watercourse or groundwater. Routinely supply and use drip trays.</p>
<p>3.5.4 Tankers, mobile tanks or bowsers should be fit for the purpose and should be of a suitable material resistant to corrosion. All hatches should have covers which provide a watertight seal when closed. No laden mobile tank or bowser should be moved unless all hatches, lids and valves are securely closed.</p>	<p>3.6.3 The user should draw up procedures for use in the event of a major spillage occurring on farm at times other than during delivery by the supplier. These procedures may involve the assistance of the supplier and of the appropriate environment agency. An emergency plan could usefully include drainage and potential containment points.</p>



- 3.6.4 The **user** should ensure that, if **fluid fertiliser** is to be delivered into a mobile bowser or road tanker supported on parking legs, these legs are resting on a made-up roadway or concrete of known and adequate thickness, or on a support of suitable size and thickness, to carry the loaded weight of the bowser without it sinking into the ground and becoming unstable.

- 3.6.5 All hatches, lids and valves should be securely closed before tankers or bowsers are moved, and valves should be inoperable or locked when unattended.

- 3.6.6 Tankers or bowsers should not be filled to capacity, so as to allow for the expansion of contents in warm weather.

- 3.6.7 While ideally **users** should be present during deliveries, they should ensure that, in their absence, the delivery tanker driver is able to operate all relevant valves so that they can nevertheless remain in-operable before and after delivery.

- 3.6.8 The person undertaking any transfer of **fluid fertiliser** must be aware of all relevant procedures and be capable of taking appropriate action in the event of an incident. They shall remain present and monitor pipework and the receiving tank at all times during the transfer of **fluid fertiliser**. Drip trays should be used where available.

3.7 EMERGENCY PROCEDURES FOR DEALING WITH A SPILLAGE INCIDENT AT THE USER'S SITE, (TANKER, BOWSER OR STORAGE TANK):

- 3.7.1 Take appropriate action to minimise the spillage and to prevent the pollution of **watercourses/ groundwater**, perhaps using earth barriers/dams. Do not wash down with water unless specifically advised to do so. Immediately contact the appropriate environment agency, or contact the **supplier** of the fertiliser and your employer (if not self-employed) and request that the appropriate environment agency be informed. Remain on site until released by the fertiliser supplier/your employer.

- 3.7.2 In the event of a minor spillage such as a leaking hose or valve the procedure should be as follows:

- wearing goggles and gloves, stop the leak,
- where practicable contain the spillage and mop it up. Do not wash down with water unless specifically advised to do so.
- effect repair if possible or inform employer/ supplier

Tel No.....

- 3.7.3 Records should be kept of all reported incidents involving spillage resulting from any major spillages occurring at the site.



APPENDIX 1

SOURCES OF INFORMATION

Containment Systems for the Prevention of Pollution:

Secondary, tertiary and other measures for industrial and commercial premises. CIRIA (C736)
www.ciria.org.uk

Protecting our Water, Soil and Air: a Code of Good Agricultural Practice for Farmers, Growers and Land Managers, Defra, 2009.

The Stationery Office, ISBN 978 0 11 243284 5
www.gov.uk/government/publications/protecting-our-water-soil-and-air

Prevention of Environmental Pollution from Agricultural Activity

The Scottish Government, 2005, ISBN 0 7559 4106 3.
www.scotland.gov.uk/Publications/2002/06/14968/7848

Code of Good Agricultural Practice

DARD, 2008, ISBN 978 1 84807 068 4.
www.dardni.gov.uk/cogap

Fertiliser Manual (RB209) 8th Edition, 2010

The Stationery Office, ISBN 978 0 11 243286 9
www.gov.uk/government/publications/fertiliser-manual-rb209

SRUC Technical Notes: Fertiliser Series

www.sruc.ac.uk

Eurocode 2. Design of concrete structures. Liquid retaining and containing structures

BS EN 1992-3:2006
www.techstreet.com/products/1278297

Groundwater protection: Principles and practice (GP3)

www.environment-agency.gov.uk/research/library/publications/144346.aspx

Recommendations for Safe Storage and Handling of Wet Process Phosphoric Acid, (Phosphoric Acid Produced from Sulphuric Acid), 1991

EFMA, Avenue E Van Nieuwenhuysse 4, B-1160, Brussels
www.fertilizerseurope.com

Hazardous Properties of Ammonia, 1990

EFMA, Avenue E Van Nieuwenhuysse 4, B-1160, Brussels
www.fertilizerseurope.com

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Agricultural Industries Confederation, 2009, Confederation House, East of England Showground, Peterborough, PE2 6XE
www.agindustries.org.uk

Guidance for the Preparation of Safety Data Sheets for Fertilizer Materials 2008

EFMA, Avenue E Van Nieuwenhuysse 4, B-1660, Brussels
www.fertilizerseurope.com

FACTS

For details of the FACTS Scheme and its qualified advisers in crop nutrition
Tel: 01335 343945
www.basis-reg.com/facts

THE ENVIRONMENT AGENCY ENGLAND

Free emergency incident telephone number: 0800 80 70 60
General enquiries: 03708 506506
www.environment-agency.gov.uk

NATURAL RESOURCES WALES

Free emergency incident telephone number: 0800 807060
General enquiries: 0300 065 3000
www.naturalresourceswales.gov.uk

SEPA

Free emergency incident telephone number: 0800 807060
www.sepa.org.uk

NORTHERN IRELAND ENVIRONMENT AGENCY

Free emergency incident telephone number: 0800 80 70 60
www.doeni.gov.uk

APPENDIX 2

PRIMARY LEGISLATION

EU Fertiliser Regulation (EC) No 2003/2003

EU REACH (Registration, Evaluation, Authorization and Restriction of Chemicals) Regulation No 1907/2006

EU Regulation (EC) No 1272/2008 on Classification, Labelling and Packaging of Substances and Mixtures

The Nitrates Directive (EC) No 676/1991

The Water Framework Directive (EC) No 60/2000

Agriculture Act 1970

Consumer Protection Act 1987

Control of Pollution Act 1974, as amended

Environmental Protection Act 1990

Water Resources Act (England and Wales) 1991, as amended

Water (Northern Ireland) Order 1999

REGULATIONS

The Environmental Permitting (England and Wales) Regulations 2010.

Control of Substances Hazardous to Health Regulations 1994. SI No 437

Environmental Protection (Prescribed Processes & Substances) Regulations 1991 as amended, SI No 472

The Carriage of Dangerous Goods (Classification, Packaging and Labelling) and Use of Transportable Pressure Receptacles Regulations, 1996, SI No 2092

The Carriage of Dangerous Goods and Transportable Pressure Equipment Regulations, 2009, SI No 1348

The Fertilisers Regulations 1991, as amended, SI No 2197

The Transport of Dangerous Goods (Safety Advisers) Regulations 1999 SI No 257

The Nitrate Pollution Prevention (Amendment) Regulations 2012, SI 2012 1849*

The Nitrate Pollution Prevention (Wales) Regulations 2013, SI 2506 (W.245)*

The Action Programme for Nitrate Vulnerable Zones (Scotland) Amendment Regulations 2013, SI 2013/123*

Nitrates Action Programme Regulations (Northern Ireland) 2010, SI 411*

Phosphorus (Use in Agriculture) Regulations 2006, SI 488

Copies of all the above can be obtained from The Stationery Office and some are online at www.opsi.gov.uk

*Subsequent reviews may apply

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APPENDIX 3

PRODUCT SAFETY DATA SHEETS

Under the REACH Regulation, a safety data sheet (SDS) in the prescribed format must be provided by the producer of 'hazardous' substances or mixture for progression down the supply chain. The list of hazardous materials includes:

AN Hot Solution Mixture 80-93 percent eSDS

An SDS is not required if the substances/mixtures are not classified as hazardous. However, a producer may provide such documents, on request, as 'advisory information' sheets. Non-hazardous fertilisers include:

SDS FERTILISER GROUP 9

Fluid straight nitrogen ammonium nitrate-based fertilisers in the form of aqueous solutions.
www.agindustries.org.uk/latest-documents/sds-fg-9/

SDS FERTILISER GROUP 10

Fluid compound fertilisers (NPK, NP, NK) in the form of aqueous solutions or suspensions.
www.agindustries.org.uk/latest-documents/sds-fg-10/

APPENDIX 4

PROTECTING THE ENVIRONMENT

The essentials for storing solid and liquid fertilisers

Tanker/tank Inspection Check List

Fluid Fertiliser Storage Tank Environmental Risk Assessment for Spillages

Tanker/tank Sticker

APPENDIX 5

FLUID FERTILISER STORAGE TANK ENVIRONMENT RISK ASSESSMENT FOR SPILLAGES

APPENDIX 6

TANK INSPECTION CHECKLIST

Agricultural Industries Confederation

T 01733 385230

F 01733 385270

E enquiries@agindustries.org.uk

W www.agindustries.org.uk