

Kildare County Council



Environment Section

Title	Protocol for the use of Sewage Sludge in Agriculture in County Kildare
Version	6
Date	April 2023

Table of Contents

Section	Title	Page
	Background	4
	Purpose of Protocol	
1.0	Introduction	6
1.1	Legislation	
1.2	Mandatory Code & Protocol	
1.3	Useful References	
1.4	Notification and Reporting	
1.5	Role of the Sewage Sludge Producer	
1.6	Notes	
2.0	Contents of Nutrient Management Plan	9
2.1	Farmers Details	
2.2	Landbank Suitability	
2.3	Livestock Calculations	
2.4	Geology of the Receiving Land	
2.5	Soil Treatment History	
2.6	Land to be used for Spreading	
2.7	Soil Analysis	
2.8	Maps	
2.9	Sewage Sludge originating outside of County Kildare	
2.10	The Sewage Sludge	
2.11	Transporter	
2.12	Land Spreading	
2.13	Storage Facilities	
2.14	Summary Table of data required when calculating allowable tonnages and application rate of sewage sludge	
2.15	Farmer Information	
2.16	Traceability System	
2.17	Annual Spreading Report (ASP) for Kildare County Council	
2.18	Monthly Reports	
2.19	Sludge Register	
3.0	Septic Tank/Domestic Waste Water Treatment Plants	21
4.0	Planning	23
4.1	Planning Issues	
5.0	Waste Management	24
5.1	Waste Management Issues	
6.0	Miscellaneous	26

6.1	Miscellaneous Issues	
7.0	Glossary of Terms	27
7.1	Definitions	

Tables		
Table 1	Groundwater Sampling Requirements for Land Banks receiving Sewage Sludge	10
Table 2	Soil Sampling Requirements	12
Table 3	Maximum Values for Concentration of Heavy Metals in Soil	13
Table 4	Recommended Treatment Process Conditions for Production of Biosolids.	15
Table 5	Sewage Sludge Sampling Requirements	16
Table 6	Buffer Zone Requirements	17
Pictogram	Requirement to Hold Waste License, Permit or Certificate of Registration	25

Appendices		
Appendix 1	Agreement	29
Appendix 2	Notification of Incidents	31
Appendix 3	Statement of Person/Company Qualified to Prepare a Nutrient Management Plan	33
Appendix 4	Statement of Farmer	35
Appendix 5	Soil Analysis: Qualified Person Statement	37
Appendix 6	Figures summary tables	39
Appendix 7	Disclaimer	42
Appendix 8	Legislation, Codes of Practice, Guidance Notes	44

Background:

'Article 14 of the Urban Waste Water Treatment Directive (UWWTD) states that 'Sludge arising from Waste Water Treatment shall be re-used whenever appropriate. Disposal routes shall minimise the adverse effects on the environment'.

Ireland is now fully compliant with EU Sewage Sludge policy and sludge management standards have been developed which utilise best international practice and are in excess of those set by the EU.'

Department of Housing, Local Government and Heritage website

Under the Waste Management (Use of Sewage Sludge in Agriculture) Regulations, 1998, as amended in 2001, each Local Authority is required to establish and maintain a register known as the 'Sludge Register'. To facilitate this, a supplier of sludge for use in agriculture in the County of Kildare shall notify Kildare County Council of the quantities of sludge produced and the quantities supplied, the composition and properties of the sludge, the treatment which the sludge has undergone, the name and address of each recipient of the sludge and location of each site where the sludge is to be used.

In addition the European Union (Good Agricultural Practice for Protection of Waters) Regulations 2022 (S.I. No. 113 of 2022), and as amended, give legal effect to Ireland's national Nitrates Action Programme under the EU Nitrates Directive. Compliance with the Regulations requires protection of waters against pollution from agricultural sources and management of manures and fertilisers. In addition Kildare County Council requires that all sludges comply with the Code of Good Practice for the Use of Biosolids in Agriculture.

The Waste Management (Facility Permit and Registration) Regulations 2007 (S.I. 821 of 2007) amend Section 51(2) (a) of the Waste Management Act, 1996, and along with amendment S.I. No. 86 of 2008, deal with the recovery of Sewage Sludge in Agriculture. 'Agriculture', as defined in Section 5.1 of this Protocol and in the Waste Management (Use of Sewage Sludge in Agriculture) Regulations S.I. 148 of 1998 as amended, refers **only** to the growing of commercial food crops (including food crops for stock-rearing purposes). Use of sewage sludge in silviculture and biomass (non-food) crops are addressed in these recent Regulations, S.I. 821 of 2007 as amended, which came into operation on 1st June 2008.

In summary suppliers of sewage sludge are required to:

- Seek written acceptance for the suitability of spreadlands by submitting a Nutrient Management Plan to the Local Authority in whose area the sludge is to be recovered,
- Satisfy themselves as to whether a Waste Licence, Permit or Certificate of Registration, is also required for their proposed spreading activity (see Section 5.1), and apply to the relevant authority where necessary

- Apply to the Local Authority in whose area the sludge is to be stored, as required under the Waste Management (Registration of Sewage Sludge Facility) Regulations 2010
- Supply the information required for the Sludge Register to the Local Authority, in a format and frequency required by the Local Authority
- Ensure that vehicles transporting the waste hold a Waste Collection Permit as required under the Waste Management (Collection Permit) Regulations 2001, 2007 and as amended
- Investigate whether the activity of spreading, or the storage of sewage sludge requires Planning Permission. Kildare County Council Planning Department should be contacted to seek advice on, and if necessary, obtain, either a Certificate of Exemption, or Planning Permission. Please note that An Bord Pleanála has adjudged that the spreading on Willow does **not** require Planning Permission.

All the above shall comply with the relevant legislation, codes of practice and guidance documents as set out in Appendix 8.

Purpose of Protocol

This Protocol has been prepared by Kildare County Council to set out the specific requirements of a **Nutrient Management Plan (NMP)** and ensure legislative compliance.

It outlines the information required to allow the suitability of each land bank to be assessed for sewage sludge application, including soil type, soil quality, soil nutrient status, local topography and the status of the groundwater.

Details of the sludge are required to be set out including origin, treatment and sampling requirements.

The Protocol also requires information such as spreading restrictions, spreadland maps, transport and storage requirements and notification and reporting requirements to be included in the Nutrient Management Plan.

The Appendices contain various templates as well as the compliance statements and agreements which must be signed and returned with the NMP prior to approval being granted.

This protocol shall be agreed in writing and signed-off by all contractors involved in the supply of sewage sludge for use in agriculture within the functional area of Kildare County Council (See Agreement, Appendix 1).

Please note that it is now Kildare County Council policy to restrict the landspreading of sewage sludge in the environs of Castledermot to a thermally dried granular product **only**. The restricted area is defined as that within a 5km radius of the town.

SECTION 1

1.0 Introduction

All Nutrient Management Plans (NMP's) prepared for the use of sewage sludge in Agriculture shall be drawn up in accordance with the following:

1.1 Legislation:

- European Union (Good Agricultural Practice for Protection of Waters) Regulations 2022 (S.I. No. 113 of 2022).
- Waste Management (Use of Sewage Sludge in Agriculture) Regulations, 1998 to 2001.
- Local Government (Water Pollution) Act 1977, as amended.
- Planning & Development Act 2000 and Regulations made thereunder.

See also Appendix 8 for further related legislation.

1.2 Mandatory Code & Protocol:

- Mandatory Code of Good Practice for the use of Biosolids in Agriculture, Department of Environment 2008.
- Kildare County Council's "Protocol for the use of Sewage Sludge in Agriculture in County Kildare".

1.3 Useful References:

- Major & Micro nutrient advice for productive agricultural crops, Teagasc. 3rd Edition, 2008.
- Land spreading of Organic Waste. Guidance on Groundwater Vulnerability Assessment of Land, EPA Document (2004).

When intending to use sludge in Agriculture, regard should also be taken to:

- The nutrient requirements of plants
- Ensuring that the quality of soil, surface water and groundwater is not impaired, and
- The increased mobility and availability to crops of heavy metals when the sludge is applied to land with a pH of less than 6

1.4 Notification and Reporting:

- NMP's shall be submitted to the Environment Section, Kildare County Council, Áras Chill Dara, Devoy Park, Naas, Co. Kildare by the 31st of January of the year in which spreading is proposed or a minimum 4 weeks in advance of the proposed spreading date.

- An assessment period of at least 4 weeks is required for all NMPs submitted and **no sewage sludge shall be spread until receipt of written acceptance** from the Local Authority. The Local Authority assessment will include on-site inspection of proposed land parcels and associated storage facilities.
- NMPs will be assessed sequentially, as per their official 'stamped received' date recorded at this office or the date they are received electronically.
- Monthly Reports and an Annual Spreading Report, along with the required details for insertion in the Sludge Register are required. See Section 2.16, 2.17 and 2.18 below.
- All correspondence; NMPs, Monthly Reports and Annual Spreading Reports, must be submitted electronically. At least one hard copy of the above shall also be submitted.

**Senior Executive Officer
Environment Department
Kildare County Council
Aras Chill Dara
Devoy Park
Naas
Co. Kildare
environ@kildarecoco.ie**

1.5 Role of the Sewage Sludge Producer

The Sewage Sludge Producer is the owner and/or operator of the Sewage Treatment Facility and is usually the Sanitary Authority. However, in most instances the Producer will employ a specialist contractor to manage the Sewage Sludge on their behalf.

The role of the Sewage Sludge Producer is stated in the Mandatory Code of Good Practice for the Use of Biosolids, Dept. Of Environment 2008 as follows:

- Liaising with the receiving farmer in the provision of a product which will be beneficial as a source of nutrients and as a soil conditioner as well as supplying a full NMP to the receiving farmer for his/her spreadlands.
- Ensuring the sewage sludge product provided is of a consistently high quality.
- Guaranteeing a reliable and ready source of sewage sludge.
- Ensuring that the sewage sludge product is applied to land in accordance with the recommendations provided in the European Union (Good Agricultural Practice for Protection of Waters) Regulations 2022 (S.I. No. 113 of 2022) and Mandatory Code of Good Practice for the use of Biosolids in Agriculture, Department of Environment 2008.
- Building the confidence of the receiving farmer in the value of the sewage sludge product.

- Regulating the use of the sewage sludge so as to take account of relevant legislation and to abide by the relevant Codes of Good Practice. The sewage sludge producer holds the key to the sustainability of the sludge use program.
- The Sewage Sludge producer is responsible for overseeing all the processes involved in the use of sewage sludge in agriculture including contractors and sub-contractors used to carry out certain functions.

This protocol, shall be agreed in writing and signed by the Sewage Sludge specialist contractor/consultant employed by the relevant Sanitary Authority to manage the supply and application of sewage sludge for use in agriculture within the functional area of Kildare Co. Council (See Agreement, Appendix 1)

1.6 Notes:

Note 1:

Kildare County Council's Protocol is subject to Revision. Please check with the County Council website to ensure you obtain the latest edition before preparing a NMP.

Note 2:

Consistent metric shall be used throughout the NMP

Note 3:

Please note that it is now Kildare County Council policy to restrict the landspreading of sewage sludge in the environs of Castledermot to a thermally dried granular product only. The restricted area is defined as that within a 5km radius of the town.

Note 4:

Whereas the supplier of sludge for use in agriculture is required to regularly provide users of the sludge with the results of sludge analyses in accordance with the Schedule in the Waste Management Regulations SI 148 of 1998, there is an exemption to this, and also to the requirement to establish and maintain a sludge register containing properties of the sludge, its treatment and recipient and location details, as follows:-

Article 9 of SI 148/1998 states that:

Article 8(1) and (2) (b), (c) and (d) shall not apply to sludge from septic tanks or from sewage treatment plants with a treatment capacity below 300kg BOD 5 per day, corresponding to a population equivalent of 5,000 persons, and designed primarily for the treatment of domestic waste water.

where Article 8 refers to the Sludge Register and the information that it should include.

Furthermore, Part IV (6) of these Regulations state that:

In the case of sludge from a septic tank or sewage treatment plant referred to in article 9:

(a) a sludge analysis shall be carried out within six months after the commencement of the use of such sludge in agriculture,

(b) The frequency of sludge analyses may be reduced to not less than once in five years provided that in the initial analysis, the values for the concentrations of heavy metals indicate that, when the sludge is applied at rates consistent with the requirements of Article 4, S.I.148, the amount of heavy metals added to the soil are lower than the limit values shown in Part II of Schedule, S.I. 148, and there is no change in the characteristics of the waste water being treated.

Note 5:

Further information regarding the legislative requirements associated with the collection, transport, analysis, disposal and reporting of septic tank/domestic waste water treatment system sludge is summarised in Section 3 of this Protocol.

SECTION 2

2.0 Contents of a Nutrient Management Plan:

- Name address and contact number of company/person who drew up the plan including relevant qualifications.
- Name and address of the recipient farmer/landowner/lessee.
- Address/list of townlands where sludge is proposed to be spread, if different from address of farmer
- Date the plan was prepared and for what period it covers.
- Signed statement of Person/Company Qualified to Prepare the NMP (see Appendix 3).

2.1 Farmer Details:

- Name.
- Address.
- Herd Number.
- Main enterprise.
- Tel No.
- Mobile No.
- Statement of farmer relating to the NMP (see Appendix 4).

2.2 Landbank Suitability

In addition to a detailed analysis of the soil, an assessment of the impact on surface waters and groundwaters shall be carried out, through an initial desk study, followed by a walk over study.

An assessment of the groundwater shall include identifying the relevant Aquifer and Groundwater Vulnerability ratings and determining the Groundwater Protection Response for Landspreading (Groundwater Protection Schemes, GSI, 1999).

The OPW National Flood Hazard Map will identify any areas prone to flooding. Drainage details, including maps shall be forwarded.

In general there shall be no landspreading of sewage sludge over:

1. Groundwaters identified by the Geological Survey of Ireland (GSI) as Extremely Vulnerable unless soil cover is proven to be >2m for Regionally Important Aquifers and >1m for other aquifer classes.
2. Lands included in Inner Source Protection Areas.
3. Lands included in Outer Source Protection Areas where the vulnerability rating is Extreme and subject to conditions where other vulnerability ratings apply.
4. Areas with rock outcrops and/or a shallow depth to bedrock.
5. Gravel or cracked soil overlying pipe or mole drains.
6. Surface gradient of greater than 11% adjacent to a watercourse and/or well.
7. Areas prone to flooding.

Testing of groundwater supplies within or adjacent to the land bank shall be undertaken prior to spreading of sewage sludge. Sampling shall be representative of the aquifer and taken from the nearest down gradient receptor, where practicable. Parameters for analysis shall include the following:

Table 1 Groundwater Sampling Requirements for Land banks receiving Sewage Sludge

Parameter*	Units
pH	
Nitrate	mg/l as N
Total ammonia	mg/l as N
Total coliforms	MPN/100ml
Faecal coliforms	MPN/100ml

*Kildare County Council may request additional parameters to be analysed where deemed necessary.

All analysis shall be performed by an Irish National Accreditation Board (INAB) accredited laboratory or a laboratory approved under the EPA Intercalibration Programme. A Certificate of Analysis from the laboratory must accompany all groundwater sample results submitted and must include:

1. The date and time that the sample was taken.
2. The person that took the sample.
3. A description of the sample.
4. The location that the sample was taken from.
5. The date that the sample was analysed.

2.3 Livestock Calculations:

- Livestock type and numbers.
- Total quantity of Nitrogen and Phosphorus produced by livestock each year to be used on the farm.
- Net area of holding (whole farm).
- N from livestock manure produced on farm (Kg/N/Ha/Year).
- P from Livestock manure produced on farm (Kg/P/Ha/Year).
- P from feed concentrates.
- N & P from imported manure and spent mushroom compost (SMC).
- N & P from exported manure and spent mushroom compost (SMC).
- Total N & P from Livestock manure on the Entire Holding (including exported/import manure and SMC).
- N From Livestock Manure Kg/N/Ha/Year (including exported/import manure and SMC).
- P From Livestock Manure Kg/P/Ha/Year (including exported/import manure and SMC).

Please note: As a NMP is a complex document all calculations shall be fully shown to determine how figures are derived, as it may not be readily apparent to the farmer or a third party who may wish to inspect the document.

See Appendix 6 for summary tables regarding figures to be completed and submitted with an NMP.

2.4 Geology of the Receiving Land:

- Soil.
- Soil Type.
- Topography.

2.5 Soil Treatment History:

- Lime.
- Organic manure.
- Chemical fertiliser.
- Yield/Problems.
- Miscellaneous (NHA/SPA).
- Rotation/Crop History.
- Modifications e.g. land drainage/piping etc.

2.6 Land to be used for Spreading:

- Total Owned (Ha).
- Total Rented (Ha).
- Previous crop for each individual land parcel.
- Proposed crop for each individual land parcel (if there are two proposed crops, calculations shall be carried out for both to show that both are viable options and that either can be chosen).
- Estimate the annual N&P fertiliser requirement.
- Whole farm Stocking rate.
- Total Gross Area (from SFP) Ha.
- Total Nett Area (from SFP) Ha.
- Total Forage Area (net) Ha.
- Total Arable Area (net) Ha.
- Grassland stocking rate (Kg/N/Ha).
- Area to be spread this report (Ha).
- Planned Application of sewage sludge in(Tonnes).
- Land that can be spread with slurry (Ha).

2.7 Soil Analysis:

- All soil test result sheets shall be attached at the end of the document Summary Sheet in tabulated form for heavy metals, pH, P&K, P&K indexes for each field.
- All land parcels identification name/number shall be the same as on the soil results sheet.
- Soil tests shall be taken in accordance with S.I. No. 113 of 2022: European Union (Good Agricultural Practice for Protection of Waters) Regulations 2022, and S.I. No. 148/1998: Waste Management (Use of Sewage Sludge in

Agriculture) Regulations 1998. The name of the company/person and their qualifications who took the soil tests shall also be included: signed statement (Appendix 5).

- 1:2500 scale map, or similar, which clearly shows where the soil tests were taken shall be included.
- Soil analysis shall be carried out at a Department of Agriculture approved laboratory, INAB accredited laboratory or a laboratory approved under the EPA Intercalibration Programme.

The soil sampling and analysis included in the NMP shall meet the following requirements as set out in the Codes of Good Practice:

1. Soil samples shall be representative of the soil on the site and shall be made up by mixing together twenty five core samples taken over each area of 5ha or less used for the same agricultural purpose.
2. Except where sewage sludge is used on grassland, samples shall be taken to a depth of 25cm or the depth of the surface soil if less, provided that such lesser sampling depth is at least 10cm.
3. Where sewage sludge is used on grassland samples shall be taken to a depth of not more than 6cm.
4. Soils shall be analysed at a minimum frequency of once every 2 years with the exception of heavy metals which shall be analysed once every 5 years as specified in Table 2.

Table 2 Soil Sampling Requirements

Parameter	Units	Minimum Frequency of Analysis*
Organic Matter	TOC as % dry solids	Every 2 years
pH		Every 2 years
Clay content	% of dry solids	Every 2 years
Total Phosphorus	% of dry solids	Every 2 years
Total Nitrogen	% of dry solids	Every 2 years
Total Potassium	% of dry solids	Every 2 years
Cadmium	mg/kg dry solids	Every 5 years
Chromium	mg/kg dry solids	Every 5 years
Copper	mg/kg dry solids	Every 5 years
Lead	mg/kg dry solids	Every 5 years
Mercury	mg/kg dry solids	Every 5 years
Nickel	mg/kg dry solids	Every 5 years
Zinc	mg/kg dry solids	Every 5 years

*Kildare County Council may increase the frequency of analysis where deemed necessary.

Sewage sludge may not be used on soils where the following soil heavy metal values are exceeded:

Table 3 Maximum Values for Concentrations of Heavy Metals in Soil

Parameter	Maximum Value*	Units
Cadmium	1	mg/kg of dry matter in a representative sample of soil with a pH of 5 to 7
Copper	50	
Lead	50	
Mercury	1	
Nickel	30	
Zinc	150	

* Where the pH of the soil is consistently higher than 7, the values set may be exceeded by not more than 50%, provided that there is no resulting hazard to human health, the environment, or in particular, groundwater.

2.8 Maps:

- Location map of the area, scale 1:50000.
- Entire landholding outlined in a colour specified in the key (scale 1:2500 or as appropriate), rented land shall be identified.
- If entire landholding crosses county boundaries, the boundary line should be shown and parcels shall be divided to coincide with this line
- Spread lands to be used within that year to be outlined in a colour specified in the key (scale 1:2500, or as appropriate) with each individual parcel identified (name/number & town land).
- Maps of each individual land parcel shall include the amount of sewage sludge to be land spread in tonnes and the spread rate.
- Office of Public Works (OPW) map outlining lands liable to flooding in the area.
- Geological Survey of Ireland Maps: Groundwater Protection Responses for land spreading, Groundwater Vulnerability, Aquifer & Ground water protection zones.
- Map of all buffer zones, pNHA/ SACs, watercourses, prohibited areas, boreholes, wells, dwellings, sensitive buildings, areas of rock outcrop or other relevant information. This map shall include the specified buffer zone spreading distance from any of the above.
- Map of any modifications e.g. land drainage/piping etc.

2.9 Sewage Sludge originating outside of County Kildare

For Sewage Sludge originating outside of County Kildare, conditions issued by another local authority shall **not** be interpreted as permission to proceed to use spread lands in the functional area of County Kildare. No spreading shall take place in the functional area of County Kildare without **the written acceptance** of Kildare County Council based on the assessment of the Council of a NMP which shall be submitted to Kildare County Council prior to spreading.

2.10 The Sewage Sludge:

- Type of sewage sludge.
- Origin/source/contact details for producer of the sludge.

- Detailed report on the type of treatment process. The Mandatory Codes of Good Practice for the use of Biosolids in Agriculture (Guidelines for Farmers and Guidelines for Local Authorities and Wastewater Treatment Plant Operatives) list the approved treatment processes for the production of Biosolids and Process conditions to be maintained (see Appendix 2 of the Code of Practice). See Table 4 below for the recommended treatment processes.
- Treatment process at source or off-site, if treatment occurs off-site a detailed report of the process, including a map of the location shall be submitted.
- Certificate of Analysis: parameters, as stated in the Mandatory Code of Good Practice for the use of Biosolids in Agriculture.
- Analysis of all parameters shall be carried out in the first year. Following the first year the minimum frequency of analysis shall be carried out in accordance with the Mandatory Code of Good Practice for the use of Biosolids in Agriculture.
- Analysis of the sewage sludge shall be representative of the final product and shall be taken before delivery to the end user.
- Pathogen analysis; Faecal Coliforms & Salmonella sp to be analysed weekly as requested in the Mandatory Code of Good Practice for the use of Biosolids in Agriculture, Appendix 7 Table 2. These results shall be submitted to Kildare County Council before land spreading takes place. See Table 4 below for list of sampling requirements.
- The European Commission has not yet decided the limits for the organic micro pollutants (Polychlorinated biphenyls (PCB), Polychlorinated dibenzodioxins/dibenzofurans (PCDD/F), Polyaromatic Hydrocarbons (PAH) and Nonylphenol), but recent consultation documentation (Environmental Economics and Social Impacts of the Use of Sewage Sludge on Land. Author: Milieu in association with WRP & RPS) suggest that these compounds exist in very low quantities in sewage sludge. In light of this information, Kildare County Council do not request testing for organic micro pollutants (Polychlorinated biphenyls (PCB), Polychlorinated dibenzodioxins/dibenzofurans (PCDD/F), Polyaromatic Hydrocarbons (PAH) and Nonylphenol), but this may be a requirement in the future.
- Test results for the sewage sludge as % dry solids shall be carried out over a period of 12 months prior to land application to allow the use of four analyses, one from each quarter.
- Where possible the NMP shall state what time of year the sewage sludge is intended to be spread and if the sewage sludge is intended to be spread once or twice on the land holding within the one year.

Table 4 Recommended Treatment Process Conditions for Production of Biosolids.

Process	Description
Mesophilic anaerobic digestion with pre-or post- pasteurisation	Mean retention period of at least 12 days primary digestion in temperature range 35° +/- 3°C or of at least 20 days primary digestion in temperature range 25°C +/- 3°C. Pasteurisation phase must achieve a retention period of at least 1 hour at a temperature ≥ 70°C or 2 hours at a temperature ≥ 55°C.
Thermophilic anaerobic digestion	Mean retention period of a least 48 - 72 hours in temperature range 50 - 55°C. Must include a retention period of at least 1 hour at a temperature greater than 70°C followed by a minimum retention period of at least 2 hours at a temperature ≥ 55°C or at least 4 hours at a temperature ≥ 50°C.
Thermophilic aerobic digestion	Mean retention period of at least 7 days. All sludge to be subject to a temperature ≥ 55°C for at least 4 hours. Must achieve a reduction in volatile solids of ≥ 38%.
Composting: <ul style="list-style-type: none"> ○ Windrows ○ Static pile or in-vessel 	<p>To be held at 55°C for at least 15 days, during which time a temperature of ≥ 55°C must be maintained over 5 turnings of the windrow</p> <p>A temperature of ≥ 55°C must be achieved and maintained uniformly for at least 3 days</p>
Alkaline stabilisation	<ol style="list-style-type: none"> 1. Addition of lime to raise pH to greater than 12.0 with an accompanying rise in temperature to 70°C for 30 minutes. 2. Addition of lime to raise pH to greater than 12.0 and to maintain a pH above 12 for 72 hours and to achieve a temperature ≥ 52°C for at least 12 hours. At the end of the 72 hour period, air dry to a dry solid content of ≥ 50%
Thermal drying	Drying by direct or indirect contact with hot gases. Moisture content of the dried Biosolids to be ≤ 10%. Either the temperature of the Biosolids > 80°C or the wet bulb temperature of the gas in contact with the Biosolids as the Biosolids leaves the drier > 80°C.

Table 5 Sewage Sludge Sampling Requirements

Parameter	Units	Minimum Frequency of Analysis*
Faecal coliforms	MPN/g dry solids	Every week
Salmonella sp.	MPN/g dry solids	Every week
Dry Solids	%	Every 2 months
Organic Matter	TOC as % of dry solids	Every 2 months
pH		Every 2 months
Total Nitrogen	% of dry solids	Every 2 months
Ammonium-nitrogen	% of dry solids	Every 2 months
Total Phosphorus	% of dry solids	Every 2 months
Total Potassium	% of dry solids	Every 2 months
Cadmium	mg/kg dry solids	Every 6 months
Chromium	mg/kg dry solids	Every 6 months
Copper	mg/kg dry solids	Every 6 months
Lead	mg/kg dry solids	Every 6 months
Mercury	mg/kg dry solids	Every 6 months
Nickel	mg/kg dry solids	Every 6 months
Zinc	mg/kg dry solids	Every 6 months
Polychlorinated biphenyls (PCB)**	mg/kg dry solids	Every 12 months
Polychlorinated dibenzodioxins /dibenzofurans (PCDD/F)**	ng TEQ/kg dry solids	Every 12 months
Polyaromatic Hydrocarbons (PAH)**	mg/kg dry solids	Every 12 months
Nonylphenol**	mg/kg dry solids	Every 12 months

* Kildare County Council may increase the frequency of analysis where deemed necessary.

** As stated in 2.10, sampling of these parameters is not required at present

2.11 Transporter:

- Waste Collection Permit Holder name, address and contact number.
- Collection Permit number.
- Type of vehicle to be used to transport the sewage sludge.
- Where the sewage sludge is being transported from.
- Notification is required if the sewage sludge is being transported to a storage facility first and then being transported from a storage facility to the spread land (see also Section 2.13 below regarding storage facilities). If transporters change within this process, information on additional transporters shall be submitted.

2.12 Land Spreading:

All landspreading shall be carried out in accordance with the European Union (Good Agricultural Practice for Protection of Waters) Regulations 2022 (S.I. No. 113 of 2022) Part 4; Prevention of Water Pollution from Fertilisers and Certain Activities.

- Name, address and contact number of land spreading contractor.
- Machinery used to land spread.
- Method of land spreading e.g. injection, overlay, or ploughed in etc.

- Copy of map which the land spreading contractor receives (and must have in his possession whilst spreading), map shall include:
 - a) land parcels outlined in red,
 - b) the application rate,
 - c) the total amount applied included for each land parcel,
 - d) all buffer zones,
 - e) pNHA/ SACs,
 - f) surface waters,
 - g) prohibited areas,
 - h) boreholes,
 - i) wells and abstraction points,
 - j) dwellings,
 - k) sensitive buildings,
 - l) areas of rock outcrop,
 - m) or other relevant information.

The map shall include the specified no spreading distance from any of the above. See Table 6 below

The applicant's attention is drawn to Section 17 of European Union (Good Agricultural Practice for Protection of Waters) Regulations 2022 (S.I. No. 113 of 2022), 'Prevention of Water Pollution from Fertilisers and Certain Activities', which specifies landspreading and storing buffer zone distances.

Table 6 Buffer Zone landspreading Requirements

Feature	Buffer (m)*
Sensitive Buildings (hospitals, schools and churches)	200
Dwelling Houses	100
Lakes, Turloughs likely to flood and main river channels	20
**Small watercourses	10
Public roads	10
Abstraction Point- supplying 100m ³ /d or serving 500 persons or more	200
*Abstraction Point- supplying 10m ³ /d or serving 50 persons or more	100
Abstraction Point- borehole, spring or well other than that covered by that specified above	25
Exposed cavernous or karstified limestone feature	15

Kildare County Council may increase buffer distances where deemed necessary.

*See subsection (3) for exemptions

**See Subsection (13) for exemption

See also subsections (14), (15) and (16) of S.I. 31 of 2014 for temporary storage restrictions.

The land spreading contractor shall keep a log of the following:

1. Date of spread.
2. Weather prior to and after spreading.
3. Any problems encountered.

4. Comments on the process e.g. if ploughed in, was it carried out immediately after spread and who carried out the ploughing.

Sewage sludge shall not be spread if heavy rain is forecast within 48 hours. Spreading in unsuitable weather conditions can cause loss of nutrients to both surface and groundwater. Sewage sludge shall not be applied to:

1. Waterlogged land.
2. Frozen or snow covered land.
3. Free draining sites with a high or exposed water table at the time of application.
4. Sewage sludge applied to tillage land shall be directly injected into the land or ploughed/incorporated into the land within 24 hours of spreading. Sewage sludge applied to grassland shall be spread with a grass rake where necessary and the land reseeded where required.

Please note the log kept by the land spreading contractor may be requested by Kildare County Council at the end of every spreading year and shall be available to Council Inspectors during unannounced on-site inspections.

2.13 Storage Facilities:

- Sewage Sludge Facilities, including most storage facilities, are now regulated under the Waste Management (Registration of Sewage Sludge Facility) Regulations 2010, S.I. No. 32 of 2010. Registration details for each storage facility shall be included in the NMP.
- Location Map (1:2500 scale, or appropriate) of storage areas outlined in a designated colour.
- All storage facilities for organic fertilizers to comply with construction specifications from the Department of Agriculture and Food. They must be designed and constructed to prevent runoff and seepage directly or indirectly, into groundwater and surface water.
- All sewage sludge shall be stored as follows: Liquid or low solids sludge (<25% dry solid content) shall be stored in a tank. This tank may be constructed from concrete or steel. Concrete tanks shall be constructed in accordance with S123: Minimum specification: Slatted livestock units; Reinforced concrete tanks. Steel tanks shall be constructed on an impermeable concrete base.
- Sewage sludge with a dry solid content of >25% can be stockpiled on hard standing areas constructed in accordance with S108: Minimum specification for manure pits. Such hard standing areas shall be covered by a roof and walls to prevent leachate generation as a result of rainwater ingress. Any self-generated leachate shall be subject to collection and controlled disposal. Agricultural sheds can also be used where the sludge is stored (usually in piles) in a manner that does not cause hydraulic pressure on the walls.
- All storage structures must undergo a structural integrity/watertight test carried out by a qualified Engineer. This test shall be carried out in the first year of use, and the results submitted to Kildare County Council. After year

one a certificate of integrity shall be obtained once every 5 years from a qualified Engineer and submitted to the Environment Section of Kildare County Council.

- All storage facilities shall have adequate capacity to store sewage sludge over the closed periods in accordance with the European Union (Good Agricultural Practice for Protection of Waters) Regulations 2022 (S.I. No. 113 of 2022) **Schedule 4**; 'Periods when application of fertilisers to land is prohibited', which states

*“1. In counties Carlow, Cork, Dublin, **Kildare**, Kilkenny, Laois, Offaly, Tipperary, Waterford, Wexford and Wicklow, the period during which the application of fertilisers to land is prohibited is the period from –*

a) 1st of October to 12th of January in the case of the application of organic fertiliser (other than farmyard manure)”

- **Please Note: Kildare County Council does not permit storage of sewage sludge in open dungsteeds, silage pits and/or earth-lined slurry tanks.**

2.14 Summary Table of data required when calculating allowable tonnages and application rate of sewage sludge:

See Appendix 6 for summary tables regarding figures to be completed and submitted with an NMP.

- Field identification number.
- Total area (Ha).
- Useable Area (Ha).
- Nutrient capacity of the land parcels.
- Crop to be planted (or proposed crop, if there is two proposed crops calculations shall be carried out for both to show that both are viable options and either can be chosen).
- N & P index.
- N & P Max kg/ha.
- N & P Max (kgs).
- Sewage sludge fertilizer required (t).
- Rate of application is limited to the lowest of the following:
 1. Maximum permissible rate of application of nutrients (as per NMP).
 2. Maximum permissible rate of application of metals (as per soil & sewage sludge analysis).
 3. Maximum permissible hydraulic loading (as determined by hydraulic capacity of the soil in Programme of Evaluation and in general not greater than 50m³ per hectare in one application).

2.15 Farmer Information

- There shall be a section included at the end of the NMP, which contains a summary for the farmer, showing a calculation of the balance of chemical fertiliser and animal slurry required (if any) that can be land spread after the application of sewage sludge. This calculation shall be clearly shown and shall also take into account the livestock N & P produced on the farm for that year.

2.16 Traceability System:

- Detailed report of the traceability system in place.
- All loads transported from source to storage facility/land spreading shall be traceable with documentation to back up all movements.

2.17 Annual Spreading Report (ASR) for Kildare County Council:

- ASR to be submitted to Kildare County Council by the 31st of January of the year following the landspreading of sludge.
 - List of all names and addresses of receiving farmers.
 - The total amount of sewage sludge each farmer received in that year.
 - Land spreading contractors log shall be submitted with the above.
 - Traceability documents shall be submitted.

2.18 Monthly Reports:

Once written acceptance has been received from Kildare County Council, Monthly Reports shall be submitted to the Council (electronically), within the strict timescale of the following month, containing the following records:

- a) Transport Record: date of transport to/from storage facility, name and address of storage facility, destination, volume transported, name and address of transporter, total volume in storage, Delivery docket details (including receipt of acceptance and transporter details)
- b) Spreading Record: date of spreading, volume spread, name and address of spreader, name and address of receiving farmer, identification of field/plot spread, where deposited if not spread immediately, spreader/contractor details
- c) Incidents/Complaints: date of incident/complaint, description of incident, corrective action undertaken, results of all investigations

On delivery of the Sludge product the customer (farmer) shall sign a Receipt of Acceptance or a Receipt of Spreading.

In the case where no sludge has been spread during the month, the Monthly Report should simply state this.

2.19 Sludge Register

The Monthly Reports, as described above, will form the basis of the Sludge Register. However, Suppliers shall also submit a final table of information which should summarise the Monthly Reports for the year.

SECTION 3

Sludge from Septic Tanks/Domestic Waste Water Treatment Systems:

Collection and Transport:

Contractors involved in emptying septic tanks must hold a valid in-date Waste Collection Permit for this particular waste. The most up to date information on permitted contractors in Kildare can be found at:

<https://kildarecoco.ie/AllServices/Environment/Wastewater/MaintainingyourWastewaterTreatmentssystemSepticTank/>

Note: a farmer emptying his own septic tank and spreading on his own land (in accordance with the legislation below) does not require a waste collection permit for that specific use.

Disposal/Re-use:

The landspreading of this waste is also subject to the pre-approval of a Nutrient Management Plan submitted to the Local Authority, as detailed in this document.

Alternatively, this waste can be brought to a Licensed Municipal Waste Water Treatment Facility for disposal. In Kildare such facilities are located in

- Athy Waste Water Treatment Plant (Tel: 059-8632337),
- Leixlip Waste Water Treatment Plant (Tel: 01-6244787)
- Osberstown (Naas) Waste Water Treatment Plant (Tel: 045-880712).

Reporting:

With regard to the Sludge Register, septic tank waste is exempt from inclusion as stated in Article 9 of S.I. No. 148 of 1998. It states:

Article 8(1) and (2) (b), (c) and (d) shall not apply to sludge from septic tanks or from sewage treatment plants with a treatment capacity below 300kg BOD 5 per day, corresponding to a population equivalent of 5,000 persons, and designed primarily for the treatment of domestic waste water, where Article 8 refers to the Sludge Register and the information that it should include.

Analysis:

As above, if this waste is to be landspread, it is subject to the requirements of a Nutrient Management Plan, as detailed in this Protocol.

Furthermore, Part IV 6 of S.I No. 148 of 1998 Regulations state that:

In the case of sludge from a septic tank or sewage treatment plant referred to in article 9:

- (a) a sludge analysis shall be carried out within six months after the commencement of the use of such sludge in agriculture,*
- (b) The frequency of sludge analyses may be reduced to not less than once in five years provided that in the initial analysis, the values for the concentrations of*

heavy metals indicate that, when the sludge is applied at rates consistent with the requirements of Article 4, S.I.148, the amount of heavy metals added to the soil are lower than the limit values shown in Part II of Schedule, S.I. 148, and there is no change in the characteristics of the waste water being treated.

Other sections of the legislation which relate to septic tank sludge state:

Article 3 of SI 148 of 1998:

3(1) Sludge shall not be used or supplied for use in agriculture except in accordance with these Regulations.

(2) Subject to sub-articles (3) and (4), only treated sludge may be used in agriculture

(3) Untreated sludge may be used in agriculture provided that it is previously injected or otherwise worked into land.

(4) Residual sludge from septic tanks may be used on grassland provided that the grassland is not grazed within six months following such use'. Art 3(4)SI. 148/1998

SECTION 4:

4.1 Planning Issues:

Planning Permission may be required for the activity involved in the land spreading of and/or the storage of sewage sludge. This will be determined by the Planning Section of Kildare County Council.

- The applicant shall obtain and submit as part of the NMP one of the following:
 1. Certificate of exemption from planning permission.
 2. Valid planning permission.

Note: Information in relation to 1 & 2 above can be found on <https://kildarecoco.ie/AllServices/Planning/>

The information on the website will be in the form of a list of planning questions for guidance to the applicant on whether he/she needs a certificate of exemption or a valid planning permission for the activity and/or the storage of sewage sludge.

Note: An Bord Pleanala has determined that the spreading on Willow is exempt from requiring Planning Permission.

SECTION 5

5.1 Waste Management Issues:

- The Pictogram on Page 25 illustrates the situations where a Certificate of Registration, Waste Permit or Waste License are required. It should be noted that differing requirements are dependent on the origin of the sludge i.e. if it has originated from a Local Authority treatment plant, or from a private treatment plant. Please note also that there are exemptions for both.
- The Certificate of Registration referred to above, should not be confused with that issued under the Waste Management (Registration of Sewage Sludge Facility) Regulations 2010, S.I. No 32 of 2010. Registration under these regulations may also apply.
- A Waste Collection Permit is required for the transport of all waste, including sewage sludge, with the exception of when a farmer is transporting on his own land.
- The spreading of WWTP sludge on willow (energy) crops is not exempt under Section 51(2)(a)(i) of the Waste Management Acts 1996, as amended, and therefore requires a Waste Facility Permit or a Certificate of Registration. This is because energy crops are not included in the definition of “agriculture” as defined in S.I. No. 148/1998 – Waste Management (Use of Sewage Sludge in Agriculture) Regulations, 1998. These Regulations state agriculture means “the growing of all types of commercial food crops, including food crops for stock rearing purposes”.
 1. If the quantity of sludge to be spread on energy crops does not exceed 1,000 tonnes per annum, the appropriate waste authorization for this activity would be a Certificate of Registration in accordance with Class 13 of Part II of the Third Schedule of the Waste Management (Facility Permit & Registration) Regulations 2007, as amended.
 2. If the quantity of sludge to be spread on energy crops is greater than 1,000 tonnes but less than 50,000 tonnes per annum, a Waste Facility Permit shall be required in accordance with Class 10 of Part I of the Third Schedule of the same regulations.

Note: For further information on the above please contact the Environment Section in Kildare County Council.

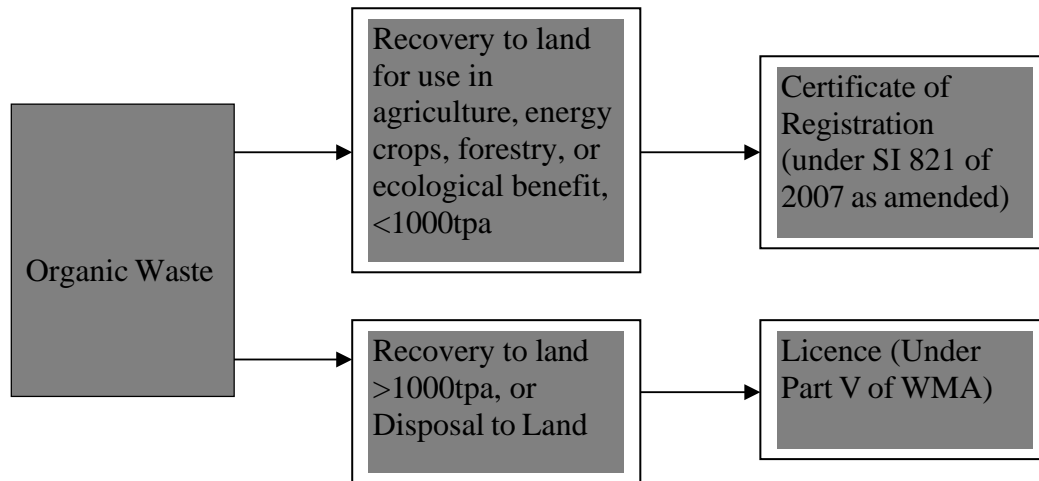
Requirement to hold Waste Licence, Permit or Certificate of Registration

Local Authority Activities

Exemption to hold a Waste Licence or COR:

- WMA Section 51; -
1. Recovery of sludge for use in agriculture;
 2. Recovery of animal or poultry blood or slurry/manure

Otherwise a Waste Licence or COR is required as illustrated below:

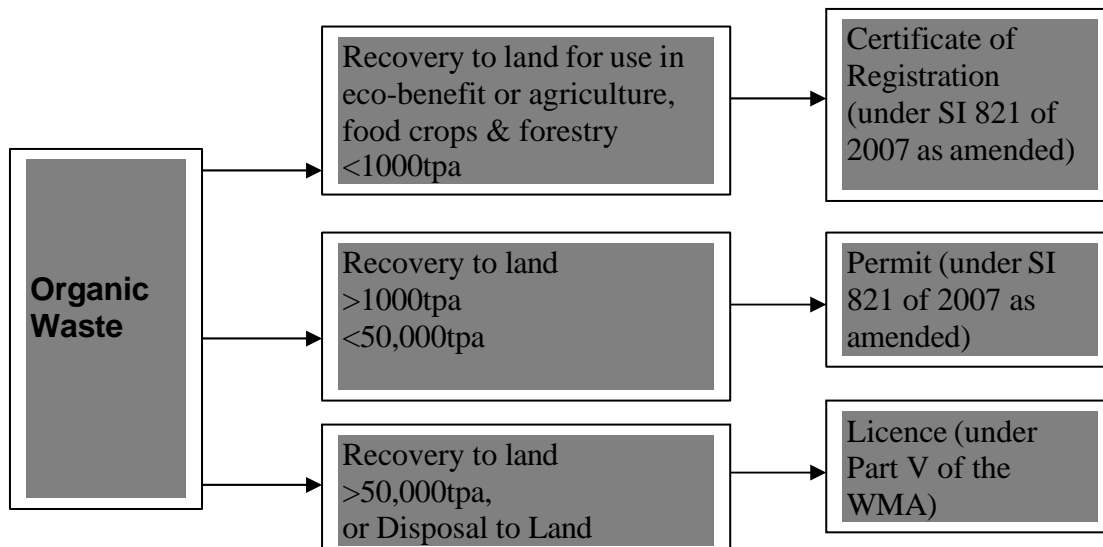


Private Sector Activities

Exemption to hold a Waste Licence, Permit or COR:

- WMA Section 51; -
1. Recovery of sludge for use in agriculture;
 2. Recovery or animal or poultry blood or slurry/manure

Otherwise a Waste Licence, Permit or COR may be required as illustrated below:



SECTION 6

6.1 Miscellaneous:

- Incidents that occur shall be notified to Kildare County Council (see section 7.1 for definition of an Incident & Appendix 2 “Notification of Incidents”).
- NMP’s that have received written acceptance are being accepted based on the information submitted in the NMP. Any changes/amendments to the NMP shall be submitted to Kildare County Council in writing, and Kildare County Council will confirm acceptance/refusal of the amended NMP in writing.
- Local Authorities that propose to have sewage sludge land spread in the County of Kildare shall notify the Environment Section, Kildare County Council, Áras Chill Dara, Devoy Park, Naas, Co. Kildare **in writing** prior to the land spreading taking place. No spreading shall take place until written approval is given by Kildare County Council.
- Soils in County Kildare are historically high in Cadmium, Nickel and Phosphorous. Kildare County Council reserves the right to refuse land spreading of sewage sludge on any land parcels that contain high levels of metals, as application of the product may cause the concentration to exceed the legal limit.
- **In accordance with European Union (Good Agricultural Practice for Protection of Waters) Regulations 2022 (S.I. No. 113 of 2022) a person who contravenes the provision of a NMP and its attached conditions is guilty of an offence and shall be liable on summary conviction to a fine not exceeding €5,000 or to imprisonment for a term not exceeding 3 months or both.**

SECTION 7

7.0 Glossary of Terms:

- ❑ NMP ~ Nutrient Management Plan.
- ❑ SMC ~ Spent Mushroom Compost.
- ❑ SFP ~ Single Farm Payment.
- ❑ WWTP ~ Waste Water Treatment Plant.
- ❑ ASP ~ Annual Spreading Report.
- ❑ N ~ Nitrogen.
- ❑ P ~ Phosphorus.
- ❑ t ~ Tonnes.
- ❑ kgs ~ Kilograms.
- ❑ Ha ~ Hectares.
- ❑ EPA ~ Environmental Protection Agency.
- ❑ OPW ~ Office of Public Works
- ❑ pNHA ~ proposed Natural Heritage area.
- ❑ SAC ~ Special Area of Conservation.
- ❑ No. ~ Number.
- ❑ % ~ Percentage.
- ❑ tpa ~ tonnes per annum

7.1 Definitions:

Agriculture means the growing of all types of commercial food crops, including food crops for stock-rearing purposes

Application to land — in relation to fertiliser, means the addition of fertilizer to land whether by spreading on the surface of the land, injection into the land, placing below the surface of the land or mixing with the surface layers of the land but does not include the direct deposition of manure to land by animals.

Biofert: is produced when a biosolid is thermally dried and pasteurized to produce an organic based granular fertilizer- it is considered similar to a commercial fertilizer due to its nutrient content

Biosolid is the organic by-product of urban wastewater treatment which, when treated to an approved standard, can be used beneficially as a fertilizer/soil conditioner in agriculture.

Contractor is a person, persons or company employed by the Sewage Sludge Producer (or on his behalf) to carry out certain functions within the process of using sewage sludge in agriculture (e.g) land spreaders, sludge transporters etc.

Fertiliser — means any substance containing nitrogen or phosphorus or a nitrogen compound or phosphorus compound utilized on land to enhance growth of vegetation and may include livestock manure, the residues horn fish farms and sewage sludge

Heavy Metal — a term used to describe metals with a high atomic mass, some of which can be harmful to ecological and human health.

Incident: The following shall constitute an incident for the purposes of this protocol:

- any activity which does not comply with the requirements of the approved NMP
- any incident with the potential for environmental contamination of surface water or groundwater, or which poses an environmental threat to land, or requires emergency response by the relevant Authority.

Organic Fertiliser- means any fertiliser other than that manufactured by an industrial process and includes livestock manure, dungstead manure, farmyard manure; slurry, soiled water, non-farm organic substances such as sewage sludge, industrial by-products and sludge's and residues from fish farms

Product is a term used for the material to be landspread. This material can be treated and /or untreated sewage sludge and/or Biosolids.

Sewage Sludge Producer The Sewage Sludge Producer is the owner and/or operator of the Sewage Treatment Facility and is usually the Sanitary Authority. However, in most instances the Producer will employ a specialist contractor to manage the Sewage Sludge on their behalf and carry out their duties and responsibilities.

Sludge or sewage sludge is

- i) residual sludge from sewage plants treating domestic or urban waste waters from other sewage plants treating waste waters of a composition similar to domestic and urban waste waters
- ii) (ii) residual sludge from septic tanks and other similar installations for the treatment of sewage
- iii) (iii) residual sludge from sewage plants other than those referred to in paragraphs (i) and (ii).

Sludge Register means the register established and maintained under Article 8 of the Waste Management (Use of Sewage Sludge in Agriculture) Regulations, 1998 and 2001

Treated sludge or sewage sludge means sludge which has undergone biological, chemical or heat treatment, long-term storage or any other appropriate process so as to significantly reduce its fermentability and the health hazards resulting from its use.

Untreated sludge or sewage sludge (see sludge or sewage sludge).

Appendix 1

Agreement

Agreement

AGREEMENT made this _____ day of _____
between **Kildare County Council of Áras Chill Dara, Devoy Park, Naas, Co. Kildare** of the One Part (hereinafter called “the Council”) and _____
of _____
of the Other Part (hereinafter called “the Contractor”)

WHEREAS

1. This Protocol sets out the Council’s requirements for the proper treatment and use of sewage sludge in agriculture in County Kildare.
2. The Contractor agrees to be bound by all of the terms of this Protocol.

SIGNED by

DIRECTOR OF SERVICES

For and on behalf of:

KILDARE COUNTY COUNCIL

SIGNED by

For and on behalf of

THE CONTRACTOR

Appendix 2

Notification of Incidents

Notification of Incidents

The sludge management contractor shall be responsible for the notifying of incidents and will be addressed as the “notifying body/person” in the following section:

1. The notifying body/person shall notify the Environment Section of Kildare County Council by both telephone and facsimile, as soon as practicable after the occurrence of any incident (as defined in this protocol). The notifying body/person shall include as part of the notification, date and time of the incident, summary details of the occurrence, and where available, the steps taken to minimise any negative effects.
2. In the case of any incident relating to contamination of water, the notifying body/person shall notify the Eastern Regional Fisheries Board and the relevant downstream water services authority, as soon as practicable after such an incident. The notifying body/person shall notify the Environment Section of Kildare County Council, as soon as is practicable, when the above incident has been resolved.
3. The notifying body/person shall make a record of any incident. This record shall include details of the nature, extent, and impact of, and circumstances giving rise to, the incident. The record shall include all corrective actions taken to manage the incident, to minimize the effect on the environment, and to avoid recurrence. The notifying body/person shall, as soon as practicable following incident notification, submit to the Environment Section of Kildare County Council the incident record including clean up and recurrence prevention measures.
4. The notifying body/person shall record all complaints of an environmental nature related to the activity. Each such record shall give details of the date and time of the complaint, the name of the complainant (if provided), and the nature of the complaint. A record shall also be kept of the response made in the case of each complaint.

Appendix 3

Statement of Person/Company Qualified to Prepare a Nutrient Management Plan

**Statement of Person/Company Qualified to Prepare a Nutrient
Management Plan**

I _____(Name & Qualification*) of
_____(Company) completed a Nutrient Management
Plan on behalf of _____.

This Nutrient Management Plan complies with the requirements of the European Union (Good Agricultural Practice for Protection of Waters) Regulations 2022 (S.I. No. 113 of 2022) Waste Management (Use of Sewage Sludge in Agriculture) Regulations, 1998 to 2001, the Mandatory Code of Good Practice for the use of Biosolids in Agriculture & the Kildare County Council Protocol for the use of Sewage Sludge in Agriculture in County Kildare.

In my professional opinion, the product may be used to fertilise the lands identified in the Nutrient Management Plan, and the application of the product from _____(Source) to any of those lands in a quantity identified in the Nutrient Management Plan and in a manner that complies with the requirements of the European Union (Good Agricultural Practice for Protection of Waters) Regulations 2022 (S.I. No. 113 of 2022) Waste Management (Use of Sewage Sludge in Agriculture) Regulations, 1998 to 2001, and the Mandatory Code of Good Practice for the use of Biosolids in Agriculture will not cause and is not likely to cause significant environmental pollution.

Signed: _____

(Print Name & Qualification*)

Date:_____

*Person compiling Nutrient Management Plan must be experienced in producing such Plans and hold a relevant recognized professional qualification to the satisfaction of Kildare County Council

Appendix 4

Statement of Farmer

Statement of Farmer

I _____(Name of Farmer) of

_____(Address) have **read,**

understand and **accept** the Nutrient Management Plan prepared for my lands by

_____(Name of Company/Person).

The product shall be used only to fertilise my farmlands stated in the Nutrient Management Plan, and shall be applied in a manner that complies with the requirements of the European Union (Good Agricultural Practice for Protection of Waters) Regulations 2022 (S.I. No. 113 of 2022)

I am fully aware of the remaining capacity for fertiliser on the lands used in the Nutrient Management Plan.

Signed: _____

(Print Name)

Date: _____

Appendix 5

Soil Analysis: Qualified Person Statement

Soil Analysis: Qualified Person Statement

I _____(Name & Qualification*) of
_____(Company) carried out all of the
_____ number of soil samples on behalf of
_____(Farmer).

The soil samples were taken in accordance with Schedule 1; Soil Sampling Procedure of the European Union (Good Agricultural Practice for Protection of Waters) Regulations 2022 (S.I. No. 113 of 2022).

In my professional opinion, the soil samples are representative of the area sampled and were taken at a uniform depth. I have included an accurate map showing where each soil sample was taken.

Signed: _____

(Print Name & Qualification*)

Date: _____

*Person carrying out soil analysis must be experienced in taking such samples and hold a relevant recognized professional qualification to the satisfaction of Kildare County Council

Appendix 6

Figures summary tables

Summary tables

	Field Ref 1		Field Ref 2		Field Ref 3	
	N	P	N	P	N	P
Mean Dry Solid Content % of Biosolid (out of 100)						
% fraction of N & P from analysis						
Availability % of N & P in Biosolid						
Total Spreading Area						
Phosphorus level in Soil (mg/l)						
N & P Index (From Table 10/11 of GAP Regulations 2022)						
Planned Crop						
Allowable fertilisation rates (From Table 16/17 of GAP Regulations 2022) (kg/ha)						
Planned spread T/Ha						
pH (Water) From Soil sample						
Soil Metals						
Cadmium (mg/kg)						
Chromium (mg/kg)						
Copper (mg/kg)						
Mercury (mg/kg)						
Nickel (mg/kg)						
Lead (mg/kg)						
Zinc (mg/kg)						

Bio Solid Metals		
Cadmium (mg/kg DM)		
Chromium (mg/kg DM)		
Copper (mg/kg DM)		
Mercury (mg/kg DM)		
Nickel (mg/kg DM)		
Lead (mg/kg DM)		
Zinc (mg/kg DM)		
Organic Matter (%)		

Appendix 7

Disclaimer

Disclaimer

Although every effort has been made to ensure the accuracy of the material contained in this document, complete accuracy cannot be guaranteed. Neither Kildare County Council nor the author(s) accept any responsibility whatsoever for loss or damage occasioned or claimed to have been occasioned, in part or in full, as a consequence of any person acting, or refraining from action, as a result of a matter contained, in this document. All or part of this document may be reproduced without further permission, provided the source is acknowledged.

Kildare County Council Protocol for the use of Sewage Sludge in Agriculture in County Kildare highlights the need for research & education in Ireland to inform policymakers and other stakeholders on a range of issues in relation to the use of Sewage Sludge in Agriculture & environmental protection. This protocol is intended as a contribution to the necessary debate on the use of Sewage Sludge in Agriculture & the protection of the environment.

**Kildare County Council Protocol for the use of Sewage Sludge in Agriculture in
County Kildare
Revision 6, April 2023**

Prepared by Kildare County Council. Áras Chill Dara, Devoy Park, Naas, Co. Kildare

Appendix 8

Legislation, Codes of Practice, Guidance Notes

Legislation:

- Sewage Sludge Directive- 86/278/EEC (Council Directive 86/278/EEC of 12 June 1986 on the protection of the environment, and in particular of the soil, when sewage sludge is used in agriculture).
- Nitrate Directive- 91/676/EEC (Council Directive 91/676/EEC of 12 December 1991 concerning the protection of waters against pollution caused by nitrates from agricultural sources).
- Waste Management Act 1996, as amended.
- S.I. No. 113 of 2022: European Union (Good Agricultural Practice for Protection of Waters) Regulations 2022
- S.I. No. 148 of 1998: Waste Management (Use of Sewage Sludge in Agriculture) Regulations 1998.
- S.I. No. 267 of 2001: Waste Management (Use of Sewage Sludge in Agriculture) (Amendment) Regulations 2001.
- S.I. No. 821 of 2007: Waste Management (Facility Permit and Registration) Regulations 2007 and amendment S.I. No. 86 of 2008 and as amended after.
- Waste Management (Registration of Sewage Sludge Facility) Regulations 2010, S.I. No 32/2010.
- S.I. No. 272 of 2009, European Communities Environmental Objectives (Surface Waters) Regulations 2009 and as amended.
- S.I. No. 9 of 2010, European Communities Environmental Objectives (Groundwater) Regulations, 2010 and as amended.
- Local Government (Water Pollution) Act, 1977.
- S.I. No 108 of 1978: Local Government (Water Pollution) Regulations, 1978
- Local Government (Water Pollution) (Amendment) Act, 1990.
- S.I. No. 271 of 1992: Local Government (Water Pollution) Regulations, 1992
- S.I. No. 184 of 1996: Local Government (Water Pollution) (Amendment) Regulations, 1996.
- S.I. No. 42 of 1999: Local Government (Water Pollution) (Amendment) Regulations, 1999.
- S.L. No. 573 of 2001: Local Government (Water Pollution) (Fees) Regulations, 2001.
- S.I. No. 41 of 1999: Protection of Groundwater Regulations, 1999.
- S.I. No. 257 of 1998: Local Government (Water Pollution) (Nutrient Management Planning Consultation) Regulations, 1998.
- S.I. No. 258 of 1998: Local Government (Water Pollution) Act, 1977 (Water Quality Standards for Phosphorous) Regulations, 1998.
- S.I. No. 43 of 1994: Local Government (Water Pollution) Acts, 1977 and 1990 (Control of Carbon Tetrachloride, DDT and Pentachlorophenol Discharges) Regulations 1994.
- S.I. No. 419 of 1994: Environmental Protection Agency Act (Urban Waste Water Treatment) Regulations 1994 and as amended.
- S.I. No. 254/2001: Urban Waste Water Treatment Regulations, 2001 and as amended.
- S.I. No. 245 of 1994: Local Government (Water Pollution) Acts, 1977 and 1990 (Control of EDC, TRI, PER and TCB Discharges) Regulations, 1994.

- S.I. No. 348 of 1993: Local Government (Water Pollution) Acts, 1977 and 1990 (Control of Aldrin, Dieldrin, Endrin, Isodrin, HCB, HCBd and CHCl₃ Discharges) Regulations, 1993.

In addition the following best practice guidance notes are relevant:

- Code of Good Agricultural Practice to Protect Waters from pollution by Nitrates, Department of Environment and the Department of Agriculture, Food and Forestry, 1996.
- Code of Good Practice for the Use of Biosolids in Agriculture, Department of Environment.
- Nitrates Explanatory Handbook for Good Agricultural Practice for the Protection of Waters Regulations 2022, Department of Agriculture, Food and the Marine.
- Landspreading of Organic Waste: Guidance on Groundwater Vulnerability Assessment of Land' and the Groundwater Protection Responses for Landspreading of Organic Wastes (DoE/GSI/EPA publication, 1999).
- Nutrient and Trace Element Advice for Grassland and Tillage Crops, Teagasc, latest publication.
- Protecting our Freshwaters: Nutrient Management Planning Guidelines for Local Authorities, Department of the Environment, 1998.
- Groundwater Protection Schemes, Department of the Environment/EPA/GSI, 1999.
- Rural Environmental Protection Scheme, Agri-Environmental Specifications, Department of Agriculture, latest publication.
- UK Forestry Authority- A Manual of Good Practice for the Use of Sewage Sludge in Forestry.
- Forestry Commissions Best Practice Guidance Note 6 'Application of Sewage Sludges and Composts'.