THE CONTROL OF POLLUTION (SILAGE, SLURRY AND AGRICULTURAL FUEL OIL) (SCOTLAND) REGULATIONS 2003

REGULATORY IMPACT ASSESSMENT

Introduction

1. This Regulatory Impact Assessment deals with the proposed Control of Pollution (Silage, Slurry and Agricultural Fuel Oil) (Scotland) Regulations 2003. The proposed Regulations will further reduce the risk of water pollution from silage and slurry effluent. They will remake the 2001 Regulations which made changes from the 1991 Regulations.

Purpose and intended effect of the measures

Issue

2. Although the existing Regulations have contributed to a substantial reduction in the number and significance of agricultural water pollution incidents, the number of pollution incidents caused by silage effluent and slurry remains high and together account for approximately 60% of all agricultural pollution events. These pollutants cause very rapid and severe oxygen depletion of water, leading to the death of fish and invertebrates for many kilometres downstream. There has also been an increase in the numbers of pollution events involving slurry due to operational failures.

3. Pollution of waters by agriculture has also been implicated in the failure of designated bathing waters, and damage to designated shellfish and freshwater fish waters under their respective EC Directives, and contributes to the nutrient content of rivers which can lead to problems of [1]eutrophication.

4. The Scottish Environment Protection Agency (SEPA) forecast that unless significant improvements occur in reducing pollution from farm land, diffuse agricultural pollution will be the most important cause of downgrading in river quality by 2010.

Objective

5. The proposed Regulations are aimed at a reduction in the numbers of silage and slurry related water pollution incidents, and include recommendations made by the Scottish Agricultural Pollution Group (SAPG), who take the view that the changes will provide further longer term potential to prevent water pollution. The Regulations will be in line with parallel Regulations south of the Border, which were amended in 1996, and which have been favourably received.

6. The main changes which the proposed Regulations make, relative to the 1991 regulations are:

- to extend the provisions to cover storage of made silage;

[1] "eutrophication" is defined in the EC Nitrates Directive as "the enrichment of water by nitrogen compounds, causing an accelerated growth of algae and higher forms of plant life to produce an undesirable disturbance to the balance of organisms present in the water and to the quality of the water concerned".

- removal of the 30 day notification period for making bulk-bagged silage;
- introduction of additional flexibility into the provisions to allow improvements to structures to protect the environment;
- introduce powers to allow SEPA to serve Notices on all structures used for the purposes of the Regulations,;
- to require, where appropriate, the preparation and implementation of a Farm Waste Management Plan, where SEPA have identified pollution or a significant risk of pollution and have served a Notice;
- extension of the 14 day notification period before use of a new or substantially enlarged or re-constructed structure to 28 days; and
- additional flexibility introduced to the sizing of silage effluent tanks.

Risk assessment

7. SEPA provisionally recorded 385 substantiated agricultural pollution events during 2000, including incidents involving the runoff of animal wastes (slurry) following inappropriate land application. Silage and slurry account for approximately 60% of all agricultural water pollution incidents. Compared to treated domestic sewage which has a biological oxygen demand (BOD) of between 20-60 mg/l, cattle slurry has a BOD of 10,000-20,000 mg/l and silage effluent 30,000-80,000 mg/l. It is considered that inappropriate applications of slurry may be being made as a consequence of inadequate slurry storage capacity, inadequate clean water separation and poor planning of farm waste applications.

8. The 1991 Regulations have been effective in reducing pollution due to silage with incidents reaching their lowest ever level of 19% of all substantiated events during 1999. The proposed changes relating to silage will however further target pollution from this source by extending the regulations to cover a potential loophole as regards silage storage. As indicated in paragraph 7, silage has a very high BOD, and although seepage from storage structures may be small in amount, the strength of effluent is greater than that of slurry with a greater risk to the environment.

Options

9. Two options have been identified. The first is to do nothing and to continue to rely on the existing powers, which have been broadly effective.

10. The second option is to introduce new Regulations which will target pollution events caused by silage effluent and slurry which form a large proportion of total agricultural pollution incidents.

Issues of equity and fairness

11. It is not envisaged that the new Regulations will impose inequitable costs on any particular group.

12. Continued reliance on the existing Regulations would put farmers in Scotland at a disadvantage over their competitors south of the Border where the Regulations have been amended to cover all structures i.e. to include new structures and those substantially enlarged or reconstructed after 1 September 1991. At the moment SEPA cannot issue a notice for such structures and their only formal course of action is to report a breach of Regulations to the

Procurator Fiscal.

13. The new Regulations will allow SEPA to address the problems giving rise to silage and slurry water pollution and their underlying causes.

Benefits

14. The principal benefits are a reduction in the numbers and the risk of water pollution incidents. The measures would reduce the risks to wildlife and help to safeguard surface waters, groundwaters and drinking waters. There would also be overall benefits to recreational users of lochs and rivers with the maintenance of a healthy aquatic environment.

Quantifying the benefits

15. It is difficult to quantify the benefits of the proposed Regulations to the sustainability of the water environment. However, the main quantifiable benefits to the second option i.e. introducing the amended Regulations would be a further reduction in the numbers of silage and slurry water pollution incidents due to operational failures. Potential benefits flowing from this reduction in terms of savings both for the polluter and SEPA are set out below at paragraphs 16 and 17.

16. Costs incurred by SEPA for investigation, range from £0-2,500 per agriculturally related pollution incident. Costs will vary considerably depending upon the nature and location of the incident, number of staff involved, whether samples are taken, follow-up visits made and if enforcement is undertaken etc. For routine incidents (i.e. the majority), costs vary between approximately £250 and £600. For more serious incidents, between £600 and £1200 and for those involving the preparation of legal cases, between £1200 and £2500. Fines from successful prosecutions varied from £200 to £5,000 for farmers in Scotland (as reported in SEPA's Annual Report for 1998/99).

17. Clean-up costs are not generally an issue in agricultural pollution incidents. Once the source of pollution has been identified and stopped, the aquatic environment can often be left to right itself. However, civil action may be taken by recreational users of waters, e.g. angling clubs, to have the polluter pay to restock the waters with fish. Autumn restocking of brown trout is often preferred by clubs when 9" to 11" fish are available from hatcheries. Typical costs for such fish range from £1,800 to £2,500 per thousand depending on size. The quantity of fish required will depend on the characteristics of the waters being restocked but typically 1 to 3 fish per square metre may be needed. Restocking of salmon and other fish indigenous to the waters may also be required.

Compliance costs for business sectors affected

18. The Regulations will have greatest impact on livestock farms, more especially dairy and beef farms. In 1998 there were approximately 2,400 dairy holdings and 15,200 holdings with beef cattle in Scotland.

<u>Silage making and storage</u>

19. The requirements in regulation 2(1) in respect of silage storage are similar to those under the 1991 Regulations for farmers who use their silos to both make and store silage, and

they will therefore incur no additional costs. There were 22 pollution events involving failure of silos and associated structures during 1998 which required structural improvements.

20. Bulk-bagged silage and leaking big baled silage accounted for 15 pollution events during 1998. The amendments to regulation 6 in respect of bulk-bagged silage will help address this problem with minor cost implications for those using this method. Valves are fitted in any event to grass silage bulk bags to serve the dual purpose of allowing gas to be vented and when required effluent to be drawn. Valves can also be fitted retrospectively as required in other situations, and are re-usable. A valve currently costs £12. The dropping of the 30-day notification period from the Regulations will have minor overall benefits in terms of farm management practice.

Loss of exemption

21. The second option (paragraph 10) would also protect farmers who wish to make repairs of a substantial nature to existing silage or slurry stores, purely as a measure to make these secure. Under the 1991 Regulations these structures might be deemed to have been substantially reconstructed and therefore cease to be exempt from the provisions of the Regulations. The proposed Regulations would encourage farmers to make their facilities secure, with potential benefits to the environment, whilst avoiding losing exemption for the structure under the Regulations. Overall, savings in costs may accrue in these circumstances, as the structure is not required to comply fully with provisions of the Regulations.

Extension of notice provisions

22. Extension of the Notice requirements by the new Regulations to all structures (i.e. to include new structures, and those substantially extended or reconstructed post 1 September 1991), will provide an alternative recourse for SEPA, and place farmers in Scotland on an equal footing with their counterparts south of the Border. There should be no additional compliance costs placed on farming enterprises as a result of this change. Benefits would accrue in terms of SEPA's effectiveness in dealing with problems by avoiding the need to proceed through the Procurator Fiscal in these circumstances.

Farm Waste Management Planning

23. Regulation 8(3) contains a new provision, which provides for completion and implementation of a Farm Waste Management Plan (FWMP) as a condition of a "Notice" on an existing facility.

24. To reduce pollution risk it is often necessary to improve handling facilities (collection, transfer, storage and utilisation) as well as aspects of operational management. The FWMP assists in the determination and specification of **viable and cost effective methods** of system modification/improvements. It reviews operational management procedures and promotes improved utilisation of wastes (slurries) which are applied to land.

25. This provision would enable SEPA to serve a "Notice" for specific problem sites where significant remedial actions are required to the farm waste management system and/or operational management. Typical costs (to a farm) of a professionally prepared FWMP, which includes liaison with the farmer and SEPA to obtain agreements, is £750. Costs of implementation will vary according to the circumstances prevailing on the farm but any

actions taken must be **viable and cost effective with regard to the business**, and reduce the risk of pollution. The FWMP will identify efficiencies in handling and application of wastes (slurries) which will in most cases avoid the need for additional storage capacity. Depending on size, the capital costs of slurry storage can vary between approx. £16/ cubic metre for a large facility to £21/ cubic metre for smaller stores.

26. The majority of agricultural pollution incidents (approximately 90%) are dealt with effectively through pre-Notice Notices. It is only with major incidents and situations where significant risks have been identified that Notice provisions are used. It would only be within these limited circumstances that SEPA would consider issuing a Notice and, where appropriate, include a requirement that a FWMP should be prepared and implemented. There were 414 agricultural pollution events during 1998, 42 of which were regarded by SEPA as major incidents.

Notification requirements

27. The relaxation of the 14-day notification requirement (to 28 days) for structures substantially reconstructed or enlarged after 1 September 1991 will have no cost implications.

Pumped tank/sump systems for silage effluent collection and transfer

28. The minimum size of effluent tank presently specified represents a significant 'below ground' tank on most sites, typical sizes being 10 to 40m³ in Scotland. Costs on a reasonable site can be £1,500 to £6,000 respectively. A 1000 tonne silage clamp would require a tank of approximately 26m³ - typical cost £4,000 installed.

29. At present there is no 'discretionary' element within the legislation which SEPA can exercise on specific sites. The proposed changes would provide for more cost effective storage within existing or proposed slurry systems. Storing effluent within above ground slurry stores to which effluent is pumped typically will cost £25/cubic metre compared to £150/ cubic metre for below ground effluent tanks. This represents a considerable saving for typically sized effluent tanks.

Small businesses

30. The proposed Regulations may benefit those running small farms. Being able to make changes to structures deemed to be safe will be a significant cost saving for smaller enterprises. However, any impact on small farms will only be determined on a case by case basis. In other respects the new regulations will not significantly disadvantage the smaller enterprise.

Total compliance costs

31. In respect of silage storage, it is anticipated that there will be only a minimal requirement for the upgrading of current storage facilities, including bulk-bagged silage. The provision permitting SEPA to determine whether substantially reconstructed structures should not be subject to the Regulations if the works are carried out for safety reasons may have substantial financial benefits for the farmer. Likewise the relaxation of provisions in Schedule 1 on the sizing of silage effluent tanks may have substantial financial and operational benefits for farmers. However, use of these provisions will be determined on a

case by case basis by SEPA.

32. The extension of Notice provisions to new structures and those substantially enlarged or reconstructed post 1 September 1991 will have no additional cost implications for the farming enterprises concerned. FWMPs will impose additional costs on the polluter or potential polluter, but only in a very small number of cases will this have substantial cost implications in terms of provision of additional slurry storage capacity.

Consultation

33. Thirteen responses were received in response to the consultation. Twelve responses were in overall favour of the new Regulations with one declining to comment. The Scottish Landowners Federation is content with the proposed changes to the Regulations and concurs with the risk assessment of the draft Regulatory Impact Assessment. However, it sought clarification of the criteria to be employed to determine where the risk becomes significant in relation to the storage and handling of silage and slurry and the consequent need for the preparation of a Farm Waste Management Plan. (These issues will be addressed by operational guidance for SEPA staff, which will be agreed with SEERAD.) On balance the NFUS views the proposed changes as sound but expressed reservations about certain details including constructing storage facilities to BS standards.

34. Others supportive of the changes included the Association of Scottish Shellfish Growers, the Centre for Ecology and Hydrology, the Association for the Protection of Rural Scotland, East of Scotland Water, The Crown Estate, the Atlantic Salmon Trust, the Scottish Environment Protection Agency, North of Scotland Water, CIWEM Scottish Branch and the Faculty of Advocates.

Other costs

35. It is not anticipated that these amendments will have any impact on the industry in terms of international competitiveness.

Summary and Recommendations

36. For the vast majority of farming enterprises which observe good practice, as exemplified by the PEPFAA Code of Good Agricultural Practice, the cost implications of introducing amended Regulations are minimal. Introduction of the new Regulations offers benefits in terms of the potentially greater number of pollution incidents avoided, savings as a result of the flexibility introduced by the Regulations on their applicability to substantially reconstructed facilities, and the extension of Notice provisions to all structures used for the purposes of the Regulations.

37. The first option i.e. leaving the Regulations unchanged, would bring no additional benefit and would result in fewer potential pollution incidents being averted than would be the case if amended Regulations were introduced. The second option- to make the new Regulations- is the preferred one, and generally mirrors provisions already made in England and Wales.

Enforcement, monitoring and review

38. SEPA are responsible for enforcing these Regulations. However, they can also offer advice, for example, on the design of silage and slurry storage facilities. There are no plans for a formal review but the Scottish Executive Environment and Rural Affairs Department will wish to assess the effect of the changes, both in terms of the use made of such methods and from the perspective of water quality. To this end the annual statistics produced by SAPG will be carefully monitored.

Declaration:

I have read the Regulatory Impact Assessment and I am satisfied that the balance between cost and benefit is the right one in the circumstances.

Signed by the responsible Minister .....

Date .....