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Water protection laws when planning farm buildings

Farmer responsibilities come to the fore

In the building and managing of farm steadings, a large number of technical measures for water protection have to be obeyed. The duties of the person responsible are increasing with regard to following careful business practices and controls regarding the facilities. Increasingly, the farmer is being forced into the role of "environmental inspector" on his land. The following reports aims to emphasise this theme with a few examples.

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Where water protection laws are also anchored in building legislation, or in emission pollution protection statutes, then the transparency and the application of water protection regulations is made more difficult. Because of this it has been attempted at a federal level over the past few years to gather all regulations relevant to environment protection in a single environmental statute book. Because of constitutional reservations regarding these water regulations, this plan has been postponed for now. According to basic legislation, the federation has only the competence for forming the legal framework for the creation of laws with regard to water protection; the creation of concrete law remains the prerogative of the individual German states. In order to be able to reform environmental law despite this, there must first be an alteration in the basic legislation.

From the point of view of water protection there are two main components to pay attention to in the planning and erection of agricultural buildings. Alongside the question regarding a secured water and wastewater connection system for the building, right in the middle point of the considerations should be the avoidance of damage to water bodies through pollutants.

The handling of water pollutants and farm manure

The handling of water pollutants is associated with a large number of conditions aimed at preventing negative environmental effects. Alongside the laws, the interpretation of which result in effective building regulations, it is also required to pay special attention to skilled farming practices as well as the testing and monitoring of the enterprise. In the water supply statute (WHG) [1] different paragraphs are devoted to the storage of farm manure. According to §19g [2] facilities for the storage and tanking of urine, liquid manure and silage seepage (JGS facilities) must be built and managed in such a way to offer achievement of best possible pollution protection for water bodies. Established in § 26 (2) for ground surface water

Fig. 1: The field storage of solid manure can contribute to water pollution .

and in § 24 (2) for ground water is additionally the determination that substances should only be stored in such a way so as to avoid danger of water body pollution (*fig. 1*). These, however, are especially the duties required of the person responsible which tend to end-up in the background because of the high number of technical building regulations to be contended with. Should, during farm manure operations, pollutants end-up in the surface water or ground water and affect its composition then the guilty party (e.g. farmer) must make compensation for the resultant damage, except where it is judged an act of God (§ 22).

The technical instructions with respect to avoiding pollution of the air (TA-Luft) [2] cover, as a federally valid administrative regulation, construction and management actions which, as a rule, have to be applied. According to those, solid dung has to be stored on a pad which is impervious to liquid. In liquid manure systems an appropriate tanker filling facility has to be built which has a run-off into a storage pit. Comparable requi-

rements are also present in each applicable state building regulation.

In the storage of water pollutants, technical regulations have to be considered which define the generally accepted technological guidelines. The regulations covering problem substances, such as the storage of fuel in a farmyard tank, are extensive. But even for the storage of farm manure, appropriate regulations (e.g. DIN 11622 "Fermented forage silos and liquid manure pits") [3] are introduced which, along with general requirements regarding the measurement, building design and quality of respective facilities, also include requirements for their maintenance and monitoring.

Publications from specialist techno-scientific associations such as the Kuratorium for Technology and Buildings in Agriculture e.V. (KTBL) [4] or the Wastewater Technology Association e.V. [5] are of help in the interpretation of the regulations or their practical translation in terms of construction.

On a state level, important for farm manure plants are the regulations on facilities for handling substances which present a water-pollutant danger (VAwS). In Bavaria [6], Brandenburg [7], Hessia [8] or Schleswig-Holstein [9] only a few of the requirements laid down in the official regulations are applied. In the official regulations can also be found the authorisation for JGS facilities, the requirements to be laid down in administrative regulations (Schleswig-Holstein), through information leaflets (Baden-Württemberg) or requirement catalogue (Bavaria). Here, a multiplicity of detailed rules for carry-out building and the management actions and controls which have to be applied are to be found.

For instance, the basic requirements in Hessia demand that all facility parts which are pervious to liquid, and which come into contact with substances which can pollute water, must be rapidly and reliably recognisable.

This general requirement makes it the duty of the person responsible to install appropriate control and security equipment. For single wall underground containers this means the installation of a leak-warning system with plastic sheeting lining, drainage layer and control shaft. In this case, this only concerns an example of how to carry things out, other alternatives are expressly permitted, in as far as they also fulfil this role. The person responsible has, on his own responsibility, to plan a solution that is according to the water protection requirements. For current facilities there are no transitional rules so that minimum requirements such as freedom from leaks, controllability as well as adoption of the generally recognised rules regarding technology must be obeyed. A general subsequent incorporation of a leak-recognition drainage in the case of underground containers is not foreseen. This can be required by the appropriate authorities in water protection areas, however.

Moreover, on the basis of the previously-mentioned water regulations it can follow that the person responsible must regularly check the container and the accompanying equipment himself. These regular checks, in addition to other occurrences, should be documented in a daily journal for the facility in order that evidence is available for laying before the water authorities. In every case the person responsible has to correct as quickly as possible the cause of damage and breakdowns, or immediately shut-down the facility and, where appropriate, to empty it. The person responsible also has the duty to immediately inform the appropriate water authorities when he judges there is the possibility that the leakage of liquid manure could cause a pollution danger to water bodies.

In some lands (Northrhine-Westphalia [11], Rhineland-Palatinate [12], Saxony [13]), these requirements with regard to the storage of farm manure do not come under the application area of the VAwS. However, the basic requirements of the water regulations still have to be obeyed.

Waste water removal

Also in the case of waste water removal, which must be carried out in a way that does not negatively affect the public good, there is the possibility that managerial duties have to be faced by the farmer. Whilst the duties of waste water removal lies in general with the local authorities, these can be transferred by them to the landowner who then has to erect a waste water treatment plant on his site (*fig. 2*).

The channelling of waste water from small sewage treatment plants into water bodies or into the underground requires a permit under the water regulations which is only given for a limited period of time. For the treatment of domestic waste water up to an amount of 8 m^3/day, a generally recognised ruling regarding the technical applications is the DIN 4261 "Small sewage treatment plants" [14]. The facilities are so to be constructed, managed and maintained so that:

- all parts of the facility that require regular maintenance are easily accessible
- stress and danger to the environment is avoided
- the function of the facility is not negatively affected or endangered
- water bodies planned to receive treated water are not excessively stressed

Its proper management, maintenance, continuous servicing and cleaning is the responsibility of the landowner independently of official control. When issuing water permits the authorities can require that maintenance contracts be given to appropriately qualified experts.

Literature

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[6] Bayern, VAwS vom 3. 8.1996 (GVBl. S. 348)

[7] Brandenburg, VAwS vom 19.10.1995 (GVBl. II S. 634)

[8] Hessen, vom 16.9.1993, geändert durch die Verordnung zur Änderung der VAwS vom 28.12.1994 (GVBl. I 1995 S. 20), vom 6.6.1995 (GVBl. I S. 411), Gesetz zur Neuorganisation der hessischen Umweltverwaltung vom 15.7.1997 (GVBl. I S. 232) und Dritte Verordnung zur Änderung der VAwS vom 9.7.1999 (GVBl. I S. 384)

[9] Schleswig-Holstein, VAwS vom 29. 4.1996 (GS SH. II, Gl. Nr. 2130-0-7 – GVOBl. S. 448, berichtigt S.592)

[10] Baden-Württemberg, Merkblatt „Gülle-Festmist-Jauche-Gärsaft", 1992

[11] Nordrhein-Westfalen, VAwS vom 12. 8.1993 (GVBl. S. 676), geändert am 10.10.1994 (GVBl. S. 958, 1013)

[12] Rheinland-Pfalz, VAwS vom 1. 2.1996 (GVBl. S. 121)

[13] Sachsen, VAwS vom 28. 4.1994 (GVBl. S. 966)

[14] DIN 4261 „Kleinkläranlagen", Teil 1: Februar 1991; Teil 2: Juni 1984; Teil 3: September 1990; Teil 4: Juni 1984; Vornorm Teil 11: Juni 1992; Vornorm Teil 31: Juni 1992, Beuth-Verlag, Berlin.

Fig. 2: Building wastewater plants with own-labour must be carried out very carefully