M E M O R A N D U M

DATE: 11 October, 2000

TO: Each Board Member

FROM: Ruth Barrington with the assistance of Damien Masterson

RE: Application for IPC licence (Reg. No. 427) from B. Maguire, Maguire Farms, Finaway, Ballyjamesduff, Co. Cavan (Drumscruddan and Duffcastle Pig Units).

Application Details	
Class of activity:	6.2
Licence application received:	08/04/98
Notices under article 11(2)(b)(ii) issued:	19/05/98, 16/12/98, 23/09/99
Information under article 11(2)(b)(ii) received:	18/06/98, 28/10/98, 22/03/99, 03/08/99, 18/04/00
Request under article 18(2) issued:	07/06/00, 03/08/00
Consent under article 18(2) received:	15/06/00, 16/08/00
Submissions received:	02/09/98
Correspondence (Cavan County Council):	11/10/00
Correspondence (Applicant):	11/10/00
Article 24(2) notice issued:	16/07/99
Site/spreadland visits	15/05/98, 06/01/00

The Activity

This report relates to an application for an IPC licence for a pig breeding unit comprising an existing 1,500 sow yard at Drumscruddan, Ballyjamesduff, focusing on the breeding and rearing of progeny from birth to weaner weights and a weaner yard on a green field site at Duffcastle, Ballyjamesduff. The two yards are located approximately 0.8 kilometres from each other and are considered as a single complex.

This proposal is aimed at the establishment of spatially separated pig rearing and breeding systems to optimise the minimal disease status of the operation. It is proposed that if an IPC licence for the development is granted, all weaner pigs currently housed at the Drumscruddan site would be relocated to the Duffcastle site. The weaners at approximately 30-35 kg liveweights would then be transferred to a separate finishing unit which is not included as part of this application.

The Applicant originally proposed to increase sow numbers to 2,000. The Applicant has recently revised proposals, to maintain existing sow numbers (1,500) at the Drumscruddan yard. Weaner numbers have been decreased in the PD to correlate with existing sow numbers. Thus animal numbers included in the PD are those currently maintained on site. The impact of the PD is to spatially separate the existing animal numbers between two installations in the same complex.

The Applicant states that the Drumscruddan yard was developed pre 1963 and prior to the introduction of the *Local Government (Planning and Development) Regulations, 1977,* as exempted development. No single media licence in relation to this facility has been issued by Cavan County Council.

An Bord Pleanala granted planning permission subject to seven conditions on 26th June 1998 (PL 02.105645) for the proposed development at Duffcastle. An EIS solely relating to this development was submitted with the IPC Licence Application. The EIS is deemed to be in compliance with Article 25 of the EIA Regulations in so far as the risk of environmental pollution from the activity is concerned considering the scale and nature of the development.

Waste:
A breakdown of the relevant information for both sites of the proposed development is provided in the table below. Operation of the proposed development will result in the production of approximately 15,280 m^3 of slurry annually (including wash water and some dirty yard water) based on the REPS Guidelines (1996) for estimation of neat excreta produced by livestock. All slurry storage will be provided in slatted underground storage tanks.

Condition 7.2.4 of the Proposed Determination (PD) requires the maintenance of a minimum storage capacity sufficient for 5,240 m^3 of slurry at the Drumscruddan site and 3,200 m^3 of slurry at the Duffcastle site when the site is fully operational.

Relevant Information	**Drumscruddan Site**	**Duffcastle Site**
Annual slurry production(inc. washwater)	8,214 m^3	3465 m^3
Annual quantity of P produced in pig slurry	9.45 tonnes P	4.0 tonnes P
Slurry storage capacity available/proposed	5,244 m^3	2,406m^3
Slurry storage capacity required by PD	5,240 m^3 26 weeks	3,200 m^3 36 weeks
Proposed pig types and numbers (estimated on a pro-rata basis)	Boars 60 Dry sows 1170 Farrowing sows 340 Maiden Gilts 290	Weaners 4935

The annual quantity of P in slurry is 13,500 Kg P per annum (basing an estimation for annual P production on the figure of 9 kg P/year for each sow and her progeny (to weaner weights)).

Condition 5.8 of the PD requires the introduction of low phosphorous feeds where feasible, within twelve months of the date of grant of the licence to reduce the level of P that has to be disposed of through landspreading. Condition 5.9 requires the licensee to submit as part of the AER, a report on the quantity of feed and the feed composition used at the site.

The application states that the distribution of slurry, the slurry spreading operation and the Nutrient Management Plan (NMP) will be managed centrally as for an integrated unit. The application indicates that 1,444 ha of land have been assessed for suitability for landspreading with approximately 1,120 ha being deemed suitable. A total of 41 farms have been proposed for receipt of pig slurry. All of the landbank proposed is farmland which has been farmed conventionally for a long number of years primarily in the production of grass for silage, hay or for grazing. On-farm slurry returned to lands in the proposed landbank is taken into account in the proposed Nutrient Management Plan. The Applicant has not indicated if any of the farmers proposed for receipt of slurry are participants in the Rural Environmental Protection Scheme (REPS). The PD requires the licensee to provide the Agency with the relevant details of REPS plans for all farms included in the landbank, submitted by the licensee, who are involved in REPS, prior to application of slurry on these lands (Condition 5.5.7).

The Applicant has based the application rate for slurry primarily on the Teagasc (1994) recommendations. The proposed Nutrient Management Plan has been developed using a figure of 1.28 kg P per cubic metre of pig slurry produced. This figure is appropriate taking into consideration the relatively high levels of washwater and dirty yard water currently directed to the slurry storage tanks at the existing Drumscruddan site.

The proposed spreadlands are located within a 16 kilometre radius of the operation in the functional area of Cavan Co. Council. The topography of the area is the typical drumlin topography associated with Cavan. The Applicant has excluded approximately 324.5 ha in appropriate Cordons Sanitaires and for reasons of slope, drainage, and for the protection of groundwater. The remainder is sufficient to allow for the landspreading of the slurry produced by the facility.

Surface Water

The spreadlands proposed for the operation are located within Hydrometric Area (HA) 36 – the Erne catchment basin, HA 26 – The Upper Shannon catchment basin and HA 07 – the Boyne River catchment basin. These catchment basins comprise of numerous lakes of varying sizes and a ramified system of watercourses, streams and rivers. The major proportion of the landbank is in the Boyne and Upper Shannon (Inny River) catchments with a smaller proportion in the River Erne catchment. The River Erne drains the north-western part of the landbank, flowing south-west from the source to Lough Gowna. In the Upper Shannon Catchment, the principal river is the Inny River that rises in Co. Meath and drains the area in and around Oldcastle into Lough Sheelin. Its tributary, the Mountnugent River also

drains part of the landbank. The remaining portion of the landbank is drained by the Nadreegeel Lough Stream, part of the Boyne catchment which flows into Lough Ramour.

The following table summarises EPA Biological Quality Index Rating data for monitoring locations in the catchments draining the proposed landbank. Only stations which were sampled in 1996-97 are quoted (thus not all stations sampled in earlier monitoring rounds are included).

CATCHMENT	RIVER	SAMPLING POINT	EPA REF.	BQI RATING
Upper Erne River	Erne River	0100 – 0900	36/E/01	4, 4, 3-4, 3-4, 4, 3 (1997)
Lough Ree	Inny River	0200 – 0900	26/I/01	3-4, 4, 3-4, 3-4, 3-4, 3-4, 4, 4-5 (1996)
Lough Sheelin	Mountnugent River	0350 – 0500	26/M/02	3-4, 3-4 (1996)
Nadreegeel Lough Stream	Lough Ramour	0100-0500	07/N/01	4-5, 3, 3-4 (1997)

The published document *River Erne Catchment, Proposals For A Water Quality Management Strategy* (1996) included proposals for some of the catchments in which landspreading for the unit is proposed. The document identifies the major loughs in the Erne system as eutrophic and notes increasing P concentrations in both L. Gowna and L. Oughter. The document also advocates reduction of slurry spreading in high risk areas. Priority areas initially identified include the Upper Erne subcatchment.

Identification of the Erne as a high risk area is based on higher than average slurry application rates in the area. However, it should be noted that calculated slurry application rates are based on animal numbers in the area (and strongly influenced by pig numbers). An assumption appears to be made that all pig slurry produced in the catchment is spread in the catchment.

Lough Oughter, (downstream of the proposed spreadlands) is identified as a hypertrophic lake *(Water Quality in Ireland 1995-1997*, published by the EPA in 1999). The Local Government (Water Pollution) Act, 1997 (Water Quality Standards for Phosphorus) Regulations, 1998 (S.I. No. 258 of 1998), requires that measures be implemented to ensure that such lakes improve in biological quality to a eutrophic status (or achieve a total phosphorous concentration of 20 µg/l to 50 µg/l) by 2007.

The relevant portion of the Upper Erne catchment has Biological Quality ratings of 3 or 4 (Water Quality in Ireland 1995-1997), published by the EPA in 1999. The Phosphorous Regulations require that measures be implemented to maintain water quality in stations with a Biological Quality rating of 4 and improve quality in those rated 3 to a 3-4 status (or a concentration of 30 µg/l MRP) by 2007.

Lough Sheelin, to which the Mountnugent River drains, is part of the Upper Shannon catchment. A problem with eutrophication was first noted in this lake in the early seventies. Continuing deterioration in water quality culminated in a

number of serious fish kills in 1987. Various reports have attributed the decline in Lough Sheelin's water quality to phosphorous enrichment due to inputs from artificial fertilizer, organic wastes and the discharges from Ballyjamesduff and Oldcastle sewage treatment works (Duggan, 1994). EPA water quality data for lakes in 1997 classified Lough Sheelin as Highly Eutrophic although monitoring by Cavan Council in 1998 would suggest that the status of the lake had improved to a moderately eutrophic or mesotrophic state (Chlorophyll a 5.7 mg/m^3, mid lake orthophosphate P 0.004 mg/l P – April 1998). However, 1999 data would suggest that the lake reverted to a highly eutrophic status attributed to the relatively high rainfall during the spring and summer months.

The document *Lough Derg and Lough Ree Catchment Monitoring and Management System, Management Proposals* (published 1999) includes environmental information and management proposals for catchments in the Upper Shannon where landspreading from the unit is proposed. A significant proportion of the land occurs in the catchment of the upper River Inny. The upper reaches of the Inny has a high concentration of pig units and the spreadlands proposed occur in this area. This area is identified as a "high potential risk" area in terms of agriculture. The report goes on to propose measures to address nutrient losses from agriculture for many of the townlands in the catchment. Proposed measures 1 and 3 are assigned to this area and include recommendations for the introduction of nutrient management planning in the catchment via bye-laws and the issuing of Section Notices to ensure an improvement in water quality.

Lough Ramor, in the Boyne catchment, is also classified as hypertrophic. The lake is fed by 14 rivers and streams in the East Cavan area and discharges to the River Blackwater. It is an active fishery and amenity lake and it supports a wide range of flora and fauna. However, the lake is characterised by excessive algal growths in Summer and Autumn months and these interfere with angling and amenity uses. The principal sources of nutrients causing the enrichment of lakes are thought to be non-point discharges of agricultural origin. The Nadreegeel Lough Stream is one of the streams which drain into Lough Ramour. Its biological quality ranges from Q 4-5 in its upper reaches to Q 3-4 in its lower reaches prior to entering Lough Ramour. There is a draft Water Quality Management Plan in place for the Boyne River and it is one of the catchments being studied as part of the Three Rivers Project which is ultimately aimed at developing a river basin management plan for each of the rivers involved.

The PD prohibits landspreading of organic waste from the activity on any lands proposed for exclusion in the application *(Schedule 2(iv) Lands where Landspreading of Organic Wastes from this Facility are Excluded)*.

Landspreading in accordance with the Cordons Sanitaires proposed in the Application, *Schedule 2(v) Buffer Zones for Landspreading of Organic Waste* and *Schedule 2(vi) Code of Practice for Landspreading of Organic Waste* (Condition 5.5.11) and in accordance with a Nutrient Management Plan (Condition 5.5.9) should provide sufficient protection for surface waters draining the landbank.

Lough Sheelin, a Special Protection Area (SPA), Lough Gowna which is a proposed National Heritage Area (NHA), and Lough Oughter which is a Proposed

NHA, SPA and Special Area of Conservation (SAC) are all located within catchments or downstream of catchments within which landspreading of pig slurry is proposed for this activity. Landspreading from the activity in accordance with an NMP, buffer zones and the code of practice for landspreading as detailed in *Schedule 2(vi) Code of Practice for Landspreading of Organic Waste* of the PD, should ensure that the activity doesn't infringe on the conservation objectives for any of these lakes.

Groundwater

A limited hydrogeological assessment of the landspreading area was included as part of the application. This study identifies the underlying aquifers in the Cavan area as being generally poor or minor aquifers. A County Groundwater Protection Scheme has not been established for County Cavan. The application describes the geology of the spreadlands area as being non aquiferous as the bedrock has no inherent porosity having been subjected to several metamorphic episodes. There are no Karstic features in the spreadlands area. With reference to the DoELG/EPA/GSI, 1999 joint publication, *Groundwater Protection Schemes*, landspreading in this area is generally acceptable subject to good practice to protect surface water and groundwater.

Condition 5.5.3 of the PD requires the licensee to ensure that in cases where there is transfer of slurry/manure from a road tanker to farm facilities, it is contained in a purpose built holding structure adequate for the protection of groundwater and surface water.

The PD requires that landspreading be carried out in accordance with *Schedule 2(v) Buffer Zones for Landspreading of Organic Waste* and *Schedule 2(vi) Code of Practice for Landspreading of Organic Waste* (Condition 5.5.11). This should provide adequate protection for wells in or adjacent to the proposed landbank, from landspreading associated with the activity.

The PD requires monitoring of the two on-site boreholes at the Drumscruddan site and monitoring of the borehole to be drilled at the Duffcastle site.

An initial evaluation of the submitted information identified lands of concern, which were targetted for inspection into their suitability as landspreading areas. Based on such inspections, the following lands are excluded from the proposed landbank; Farm 15, Plots 1 & 2 and Farm 31, Plot 6 as they are waterlogged and rushy, Farm 10, Plot 19 and Farm 21, Plots 4,6,7 & 10 for reasons of excessive slope. Taking all excluded lands into consideration, there is approximately 1,104 hectares of usable land remaining which is sufficient to dispose of approximately 16.6 tonnes P in addition to that arising from on farm cattle slurry. Therefore the proposed landbank has capacity for all slurry expected to be produced annually by the activity.

Other Wastes:
The activity gives rise to dead pigs/animal tissues which are stored in sealed containers on site and collected approximately once a week for transport to the College Proteins Ltd. rendering plant in Nobber, Co. Meath.

Maguire Farms have a contract with Rentokil Initial for collection of veterinary waste.

Condition 5.6 requires the licensee to submit a proposal for agreement with the Agency within three months of the date of grant of the licence for the discharge of domestic sewage from the Duffcastle facility to a septic tank or other suitable treatment system.

Noise:
The Agency has not received any complaints relating to noise from the existing operation at Drumscruddan. Day time limits of 55 dB(A) and night time limits of 45 dB(A) have been set in the PD for noise sensitive locations at both yards.

Air:
There are two aspects to the activity relating to air quality: on-site issues and off-site landspreading.

There is 1 dwelling located 400 metres south-east of the Drumscruddan unit and two dwellings, one 350 metres south-east and one 350 metres south-west of the proposed Duffcastle unit. No odour complaints have been received by the Agency in relation to the unit or landspreading activities associated with it.

Condition 4.1 of the PD requires that the licensee shall ensure that all operations on-site shall be carried out in a manner such that air emissions and/or odours do not result in significant impairment of, or significant interference with amenities or the environment beyond the site boundary.

In order to comply with *Schedule 2(v)* of the proposed determination, *Buffer Zones for Landspreading of Organic Waste*, no landspreading is permitted within 200 metres of sensitive buildings and within 100 metres of dwelling houses.

Water:
The only surface water emission proposed for the site relates to storm water from the roofs and yards. The storm water at the Drumscruddan site is collected in two drainage systems which discharge via discharge points identified as SW 2 and SW 3. SW 2 is piped to a stream which flows along the roadside boundary of the site and SW 3 discharges to a drain at the rear of the site. Some of the yard area at the Drumscruddan site is in bad repair and Condition 7.2.8 requires the licensee to submit proposals for agreement with the Agency within six months of the date of grant of the licence, for the upgrading of yard surfaces, the separation of contaminated yard water and the minimisation of dirty yard water being created at the Drumscruddan unit. It is proposed that storm water at the Duffcastle site be collected and discharged via two discharge points, SW1 to a stream along the North East boundary of the site and SW 2 to an existing piped stream on the South East boundary.

Condition 7.1.3 of the PD requires that there shall be no discharge of contaminated water to any surface water discharge system. Condition 7.2 sets requirements for

slurry storage capacity and minimum specifications to which slurry storage tanks must conform as well as a requirement for the inspection and assessment of slurry storage tanks. Condition 7.2.9 requires the submission of proposals, within three months of the date of grant of this licence for the installation of high level alarms on slurry draw off tanks at the site.

The PD also requires the licensee to provide inspection chambers at the discharge points of the storm water collection system (Condition 7.1.2).

Submissions:

One submission was received in relation to this application.

1. North Eastern Health Board (received 02/09/98).

The North Eastern Health Board provides details in their submission on the following:

Item 1

The importance of small lakes, rivers and streams, as drinking water supply sources in the Cavan area, the fact that many of these supplies are untreated and used by group schemes and may be vulnerable to contamination from farm wastes.

Comment

The PD regulates control of slurry application to ensure protection of lakes, rivers and streams as drinking water supplies in relation to spreading from the activity. In particular, the buffer zones excluded from spreading are designed to prevent slurry application impacting on surface waters.

Item 2

The scale and the density of pig rearing in Cavan is statistically outlined and its potential to cause surface water pollution through silage spills and slurry tank overflows.

Comment

The density of pig production in Co. Cavan has created waste disposal problems which have been documented. The proposed PD maintains existing sow numbers on the site.

Item 3

The potential threat to water from organisms such as from the oocyst which causes cryptosporidiosis and toxic algal blooms in lakes.

Comment

The PD includes provision for the regulation of the activity in terms of surface water discharge from the actual unit and also in terms of land application of wastes generated. In particular, application of slurry is controlled via implementation of a Nutrient Management Plan, control of time and rates of slurry application and prohibition of slurry application adjacent to waterways.

Item 4

The degree to which recipient farmers can be controlled by conditions in a licence, and the requirement for monitoring of slurry spreading activities particularly in terms of odour nuisance.

Comment

The management of the manure produced is the sole responsibility of the owner of the pig unit. It is the obligation of a licensee to ensure that conditions included in any licence issued are adhered to. Where the Agency has concern with regard to application of slurry on particular lands there is an opportunity to exclude such lands at the annual review of the Nutrient Management Plan.

Item 5

The NEHB states that it adopts a policy of extreme reservation regarding the development of additional piggeries in Co. Cavan.

Comment
In light of the decision by the Applicant to maintain existing sow numbers at the site, this does not qualify as an 'additional piggery'.

The NEHB has been added to Condition 3.4, to be notified in case of any incident occurring as set out in Condition 3.1.2 relating to contamination of surface or ground water, in light of the reservations expressed in the submission by the NEHB

Recommendations:
It is recommended that the Board approve the Proposed Determination as outlined.

Signed: _____

Ruth Barrington