

23 March 2009

Mr R Tomlinson
Lower Park Farm
Parkside
Rossett
Wrexham
LL12 0BN

Dear Mr Tomlinson

Re – Slurry Storage at Lower Park Farm / Lodge Farm

Further to my visit on 11 March 2009, I now write to confirm the main points discussed. The purpose of the visit was to assess your slurry storage capacity at Lower Park Farm / Lodge Farm.

Methodology

The Dairy Industry standard program called 'Dairy Wizard' has been used to assess the slurry storage, which is provided by DairyCo, who are a non commercial levy body to the dairy industry.

Farming System

Lower Park Farm is farmed in conjunction with Lodge Farm. The business operated a 600 cow dairy herd at Lower Park Farm over approximately 980 acres. The dairy herd is being increased to 700 cows in 2009-10. The majority of replacement heifers are reared off farm. The farm is fully organic and is accredited by the Soil Association.

Slurry Storage Capacity

There are four slurry stores at Lower Park Farm / Lodge Farm, and the dimensions of these stores has been entered into the Slurry Wizard program. The capacity of the stores is given in the printout below from the Slurry Wizard program. Total capacity is 6,895 m³ of storage, which takes account of the 0.75 metres required for a Freeboard. The surface area of the slurry stores is also taken into account, as rainwater falling on the stores needs to be collected, as it is contaminated by the slurry.

Slurry storage capacity

	Length m	Width m	Circumference of circular store m	Depth m (less freeboard)	Capacity m3	Area m2
Store 1	63	23.5		1.068	1581	1480.5
Store 2	73	28		1.674	3422	2044
Store 3	65	25		0.765	1243	1625
Store 4	80	20		0.462	739	1600
Store 5 - Circular					0	0
Store 6 - Circular					0	0
Total existing capacity					6985	6750

Freeboard : deduct 0.3 metres for a steel or concrete store and deduct 0.75 metres for a lagoon

Slurry and Dirty Water Produced

The program works out the amount of slurry produced by the cows and is given in the printout below.

For 700 cows, 37,100 kg/day of slurry is produced.

Livestock data entry ~ Enter all livestock below

[Go to Slurry
Data Entry](#)

[Go to
Slurry Report](#)

[Print](#)

Livestock	Age	Liveweight/milk yield	Number	% collected as slurry	Daily excreta	Total collected as slurry	Annual II output kg/year	Total II
Cattle								
Dairy Cow	>2yrs	High (>9000)		100%	64	0	110	0
Dairy Cow	>2yrs	Medium (6000-9000)	700	100%	53	37100	99	69300
Dairy Cow	>2yrs	Low (<6000)		100%	42	0	75	0
Dairy heifer replacement	24-30 mths		0	0%	20	0	30	0
Dairy heifer replacement	13-24mths		0	0%	40	0	59	0
Dairy heifer replacement	3-12mths		0	0%	20	0	28	0
Beef Suckler	>2yrs	Large (>500)		100%	45	0	82	0
Beef Suckler	>2yrs	Small (<500)		100%	32	0	61	0
Grower	>2yrs			100%	32	0	50	0
Grower	13-24mths			100%	26	0	50	0
Grower	3-12mths			100%	20	0	34	0
Bull Beef	3-15mths			100%	26	0	54	0
Bulls for breeding	>2yrs			100%	26	0	47	0
Bulls for breeding	3-24mths			100%	26	0	50	0
Calif	2mths			0%	7	0	8	0

The program also takes into account parlour washings and run-off from dirty yards. The printouts for these calculations is given below.

Slurry separator

Do you operate a separator For all the slurry entering the store(s)

Parlour washings to slurry store

Parlour washings to slurry store	Yes
High volume washing	☒ 30 litres/cow/day
Low volume washing	☐ 20 litres/cow/day
Own value	

Uncovered dirty yard area to slurry store

	Length m	Width m	Area m2
Yard 1	41	13	533
Yard 2	40	7.3	292
Yard 3			0
Yard 4			0
Yard 5			0
Yard 6			0
Yard 7			0
Yard 8			0
Yard 9			0
Yard 10			0
Total yard area			825

Storage Capacity vs. Slurry/dirty water produced.

The printout below shows that approximately 2,200 m³ of slurry/dirty water is produced each month, depending on the number of days in the month.

Based on storage capacity of 6,985 m³ of storage, there is enough room for 3.1 months of storage = approximately 98 days – or 14 weeks.

Both the organic rules and the new NVZ rules require a minimum of 22 weeks storage. Clearly, additional slurry storage is required. Installing a slurry separator is also recommended.

Slurry Report

**Go to Slurry
Data Entry**

**Go to Livestock
Data Entry**

Cubic metres		Oct	Nov	Dec	Jan	Feb
Days		31	30	31	31	28
Total excreta as slurry		1150	1113	1150	1150	1039
% excreta to slurry store		100	100	100	100	100
Excreta to slurry store		1150	1113	1150	1150	1039
Slurry separated	No	0	0	0	0	0
Parlour washings	Yes	544	527	544	544	491
Rainfall (m)	0.752	0.069	0.078	0.074	0.064	0.049
Yard run off area to slurry store	825	57	64	61	53	40
Slurry store area	6750	466	526	499	432	331
Roof water area to store	0	0	0	0	0	0
Total cubic metres		2217	2230	2255	2179	1901
Cumulative production		2217	4447	6702	8881	10782
Total storage capacity	6985	6985	6985	6985	6985	6985
Capacity less production		4768	2538	283	-1896	-3797

Conclusion

Lower Park Farm / Lodge farm does not have enough slurry / dirty water storage and is contravening the new NVZ rules and the existing organic farming rules. It is recommended that additional slurry / dirty water storage facilities are installed, coupled to the use of a slurry separator.

If you require any further information, please call me on 01824 780464 / 07980 917555.

Yours sincerely

Neil Blackburn
Managing Partner LLP
Kite Consulting

Encl.