Manure Management System

Land at Plasau
Carno
Caersws
Powys
SY17 5JY

Erection of a free-range egg production unit including silos and associated works.

R & C Jones

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Manure Management Plan

Introduction to Manure Management Plans

Based on information provided by the farmer, the manure management plan fulfils the following objectives:

- From farm size, cropping and livestock numbers, it calculates if the farmer is NVZ compliant – with an average load of 170kg N/ha
- The manure management plan also provides a template for the farmer to record the actual type, quantity and date of organic manure applications.
- The plan does not calculate storage requirements.
- The plan does not constitute a recommendation for the application of organic manures.

Spreading of organic manures can pose a risk of nitrogen getting into surface water via run-off. This report provides mitigation measures to limit this risk in line with The Water Resources (Control of Agricultural Pollution) (Wales) 2021.

Description

The farm business extends to 500 acres of owner occupied land. The farm currently operates a mixed system with 32,000 hens proposed. The applicants currently buy in fertiliser to spread on the land together with some poultry manure.

Type of Livestock		Number of stock	Days on farm	Total Nitrogen produced by each unit of stock (kg/annum)	Total Nitrogen produced
Cattle					
Calf (all categories including veal) up to 3 months				8	0.00
Dairy cow to first calf	From 3 months and less than 13 months			35	0.00
	From 13 months and up to first calf			61	0.00
Dairy cow after first calf reared	Annual milk yield over 9,000 litres			115	0.00
	Annual milk yield 6,000-9,000 litres			101	0.00
	Annual milk yield less than 6,000 litres			77	0.00
Beef cows or steers to 25 months	From 3 months and less than 13 months			33	0.00
	From 13 months and less than 25 months	20	365	50	1000.00
Beef cows or steers from 25 months	Females or steers for slaughter			50	0.00
	Females for breeding weighing 500 kg or less			61	0.00
	Females for breeding weighing over 500 kg			83	0.00
Bulls	Non-breeding 3 months and over			54	0.00
	Breeding – from 3 months and less than 25 months			50	0.00
	Breeding – from 25 months			48	0.00
Total Cattle Nitrogen				**kg/annum**	**1000**
Sheep					
From 6 months up to 9 months				2	0.00
From 9 months to first lambing, first tupping or slaughter				1.4	0.00
After lambing or tupping	Weighing less than 60 kg	200	365	7.6	1520.00
	Weighing over 60 kg			12	0.00
Total Sheep Nitrogen				**kg/annum**	**1520**
Goats, Deer, Horses					
Goat				15	0.00
Deer	Breeding			15.3	0.00
	Other			12	0.00
Horse				21	0.00
Total Goats, Deer, Horses Nitrogen				**kg/annum**	**0**
Pigs					
From 7kg and less than 13kg				1.5	0.00
From 13kg and less than 31kg				5.2	0.00
From 31kg and less than 66kg				8.8	0.00
From 66kg	Intended for slaughter			12	0.00
	Sows intended for breeding that have not yet has their first litter			13.9	0.00
	Sows (including litters up to 7kg) fed on a diet supplemented with synthetic amino acids			16.1	0.00
	Sows (including litters up to 7kg) fed on a diet without synthetic amino acids			17.9	0.00
	Breeding boars from 66kg up to 150kg			12	0.00
	Breeding boars from 150kg			17.5	0.00
Total Pig Nitrogen				**kg/annum**	**0**
Poultry					
Chickens used for production of eggs for human consumption	Less than 17 weeks			0.23	0.00
	From 17 weeks (caged)			0.41	0.00
	From 17 weeks (not caged)	32000	365	0.55	17600.00
Chicken raised for meat				0.39	0.00
Chickens raised for breeding	Less than 25 weeks			0.31	0.00
	From 25 weeks			0.74	0.00
Turkey	Male			1.37	0.00
	Female			1.03	0.00
Ducks				0.91	0.00
Ostriches				1.4	0.00
Total Poultry Nitrogen				**kg/annum**	17600
[2F] Total Nitrogen produced from *livestock* on the holding				**kg/annum**	**20120**

Figure 1: Livestock Nitrogen output

Total area from (a) above		Nitrogen loading limit for livestock manure		Carry this figure forward to Table 7, box (g) in Section 2 of this booklet
176.85	X170	= 30,064.5	Kg →	

Figure 2: Total value of Nitrogen for land owned by R & C Jones

As the 'Total N from livestock manure' is less than the 'Farm loading value' the farm complies with 170kg N/ha/yr.

All of the manure produced will be used on land owned by R & C Jones.

Phosphate Produced
Based upon the 20% ranging of the birds, the phosphate deposits to the 40 acre (16.18 ha) range will be 2,496kg P, which is the equivalent of 154.2kg P/ha. No other inorganic fertilisers are brought onto the farm.

Storage of Manure
All solid manure produced within the poultry unit will be removed every four to five days and spread directly onto land in ownership of the applicant.

"Dirty" Yard Areas
The "dirty" yard areas on the farm will be kept to a minimum. This is due to the manure being contained in the poultry unit and removed every four days together with the hardcore area to the front of the poultry unit. The farm business will require all areas to be clean outside the building as they will be producing food products within the unit.

The proposal will incorporate the installation of a dirty water tank adjacent to the poultry unit. The wastewater tank will be built in compliance with The Water Resources (Control of Agricultural Pollution) (Wales) Regulations 2021. The tank to be installed will be 1,000 gallons.

Contingency Plan
There are a number of covered areas on the farm to allow for storing any manure, slurry and dirty water produced at times when spreading may not be possible e.g. due to wet, waterlogged or frozen conditions. This is to ensure manures and slurry are spread at appropriate times to prevent pollution and maximise uptake of nutrients for crop growth.

Contingency will be in place for storing of wash water during and after disease outbreak. Any contaminated wash water will be stored in containers separate from other manures, and will be disposed of by a specialist contractor licensed to deal with such wastes.

Spreading of Manures
Areas on which solid manures and slurry should never be spread are:
Ditches and watercourses:

- Within at least 10 metres (11 yards) of either side of any watercourse including ditches and piped ditches. This will avoid direct spreading into the watercourse and also reduce the risk of run-off reaching the watercourse.

Other non-spreading (red) areas:

- Within at least 50 metres (55 yards) of any spring, well, borehole or reservoir that supplies water for human consumption or farm dairies.
- Very steep slopes where run-off is a high risk throughout the year.

- Any areas where you may not be allowed to spread for reasons such as a tenancy agreement, an abatement notice due to smell, set-aside land, Sites of Special Scientific Interest (SSSIs) or Environmentally Sensitive Areas (ESAs).
- The surface is rocky or uneven so that your equipment cannot be used effectively or safely.

Application Methods
Manures will be stored and spread in accordance with The Water Resources (Control of Agricultural Pollution) (Wales) Regulations 2021.

Manures will be stored in field stores and manure heaps at Plasau on pasture ground and will be densely packed with an 'A' shaped profile.

- Manure heaps will be well away from water courses, drainage schemes and ditches.

Manure will be spread under suitable conditions

  - Wind direction will be chosen to be blowing with prevailing direction from the west which will blow any odours away from the closest dwellings.
  - The ground to receive the manure will not be water logged or frozen.
  - Spreading will be done at least 10 metres away from any water courses or ditches
- There is a covered concrete pad at Plasau that can be used for emergency storage when conditions are not suitable to store manure on the fields. This shed has a dirty water system and has an impermeable base the shed used to be used for wintering cattle.
- Manure will be incorporated in the soil within 24 hours of application, where this is possible due to conditions.

Manure Spreading Plan
Manure will be spread according to the annual cropping plan.

Manure will be tested and analysed on a regular basis so that quantities applied will mean that applications will concur with crop requirements as laid out in DEFRA document RB209.

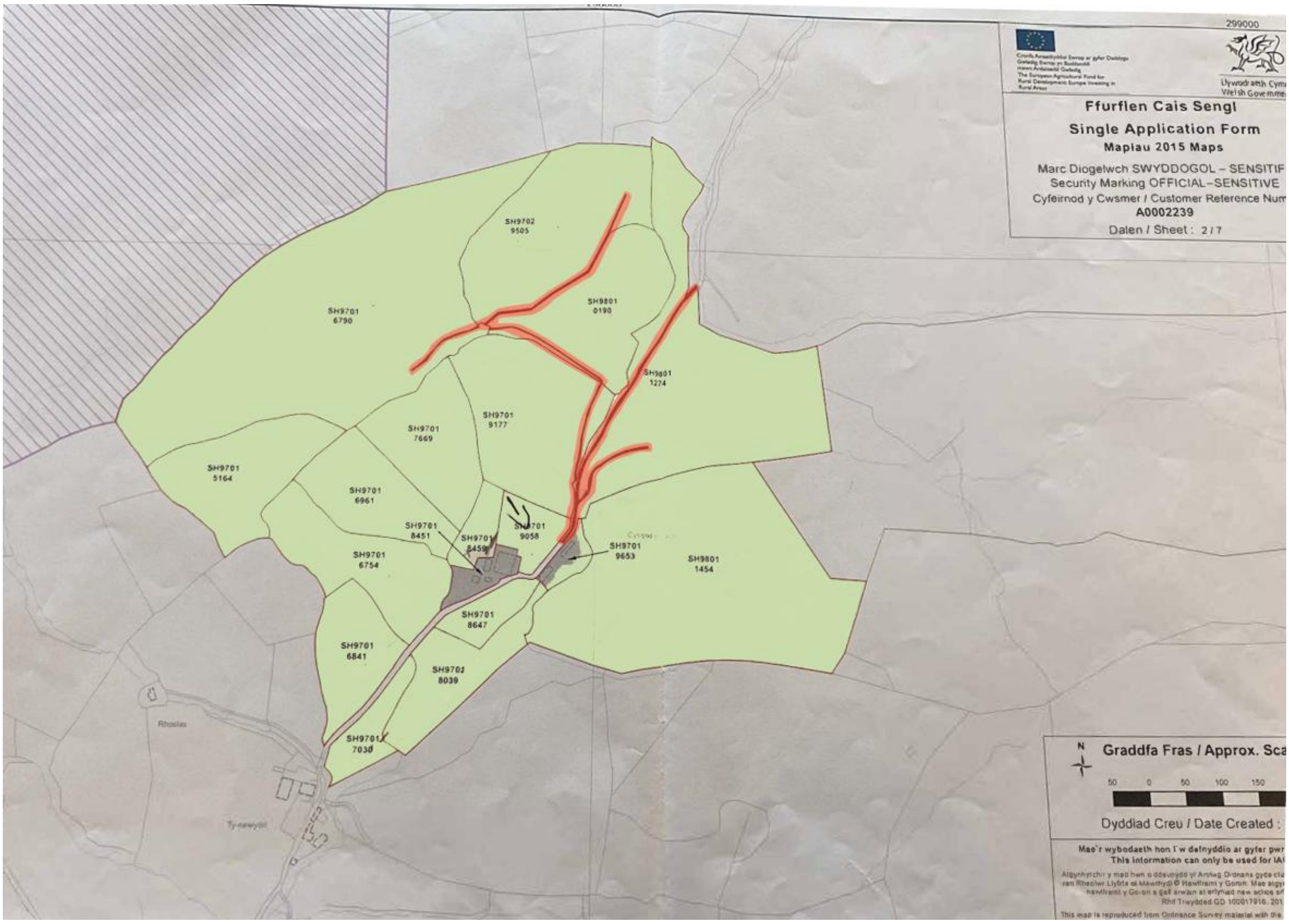
The birds within the free-range unit will graze the designated land in a rotational field system. The birds will step out of the building through the pop holes provided and onto a veranda, which shall ensure that the ground is not poached and compacted by the birds. The veranda shall also ensure that the feet of the birds are cleaned prior to entering the building. The birds will be then directed to those fields available for grazing in rotation to prevent over stocking of the ground and ensure the fertility of soil. Good pasture management is essential, and it is paramount the problems of parasitic intestinal worms and coccidian oocysts are avoided.

The maps below show watercourses & boreholes are surrounded with no spread zones in red, orange areas are medium risk meaning spreading should be avoided or carefully managed. Manure spreading areas are shown in green.

There are a number of watercourses, ditches through the Jones family-controlled land. There is a no spread zone around each 10 metres of these. In addition, a further medium risk zone has been placed around this 10m buffer zone.

The land surrounding Plasau controlled by the Jones family consists of the proposed poultry unit and poultry ranging area which will not be spread on. In addition to this there is an Ancient Woodland, therefore we have selected a medium risk zone on the land surrounding this.

RISK ASSESSMENT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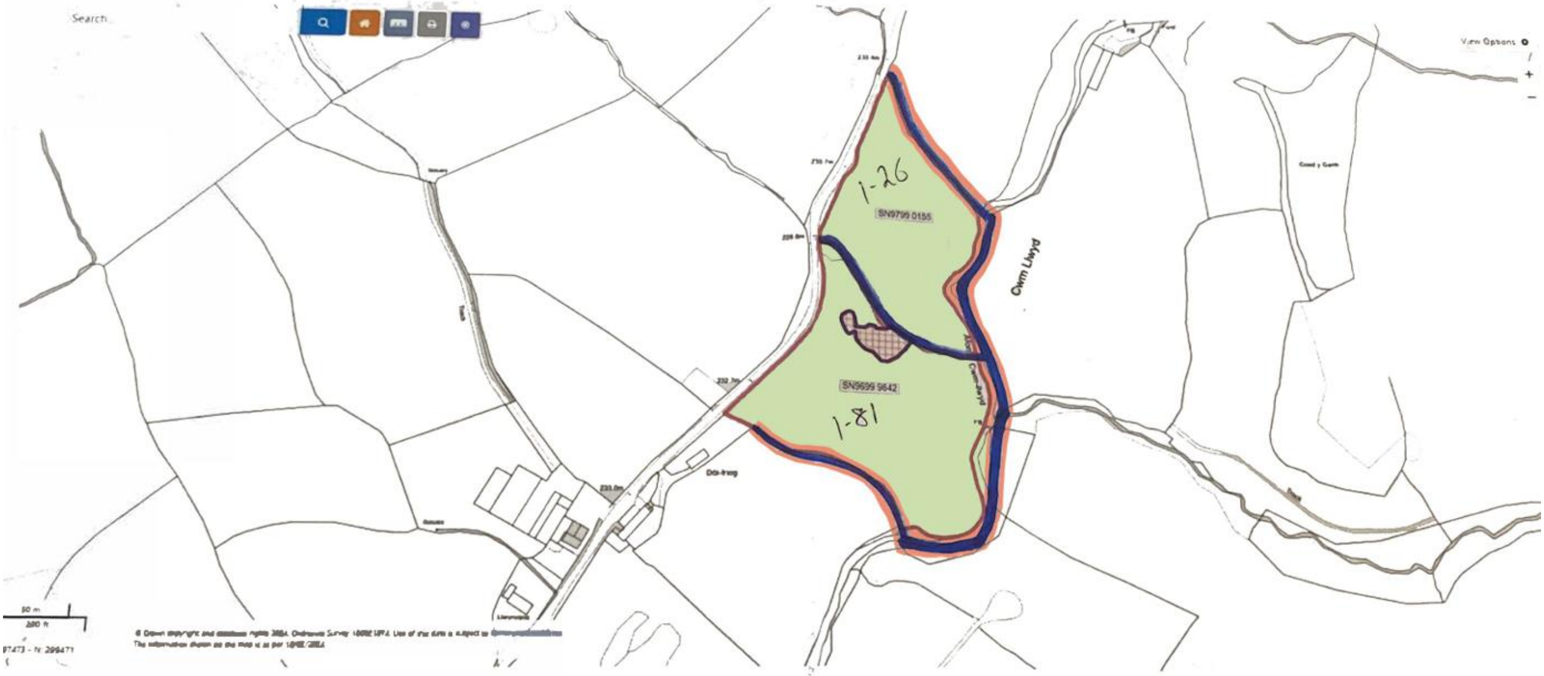
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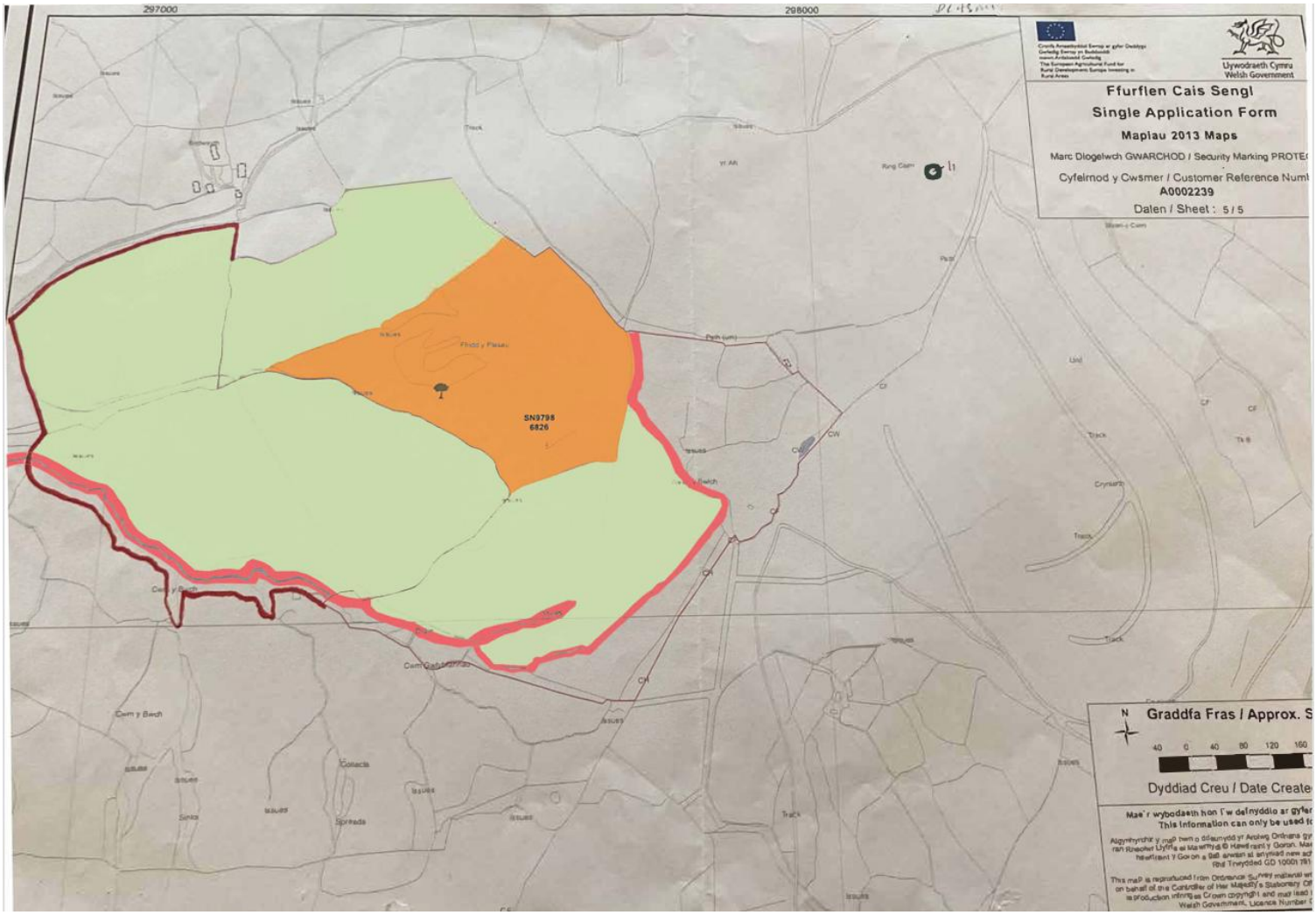
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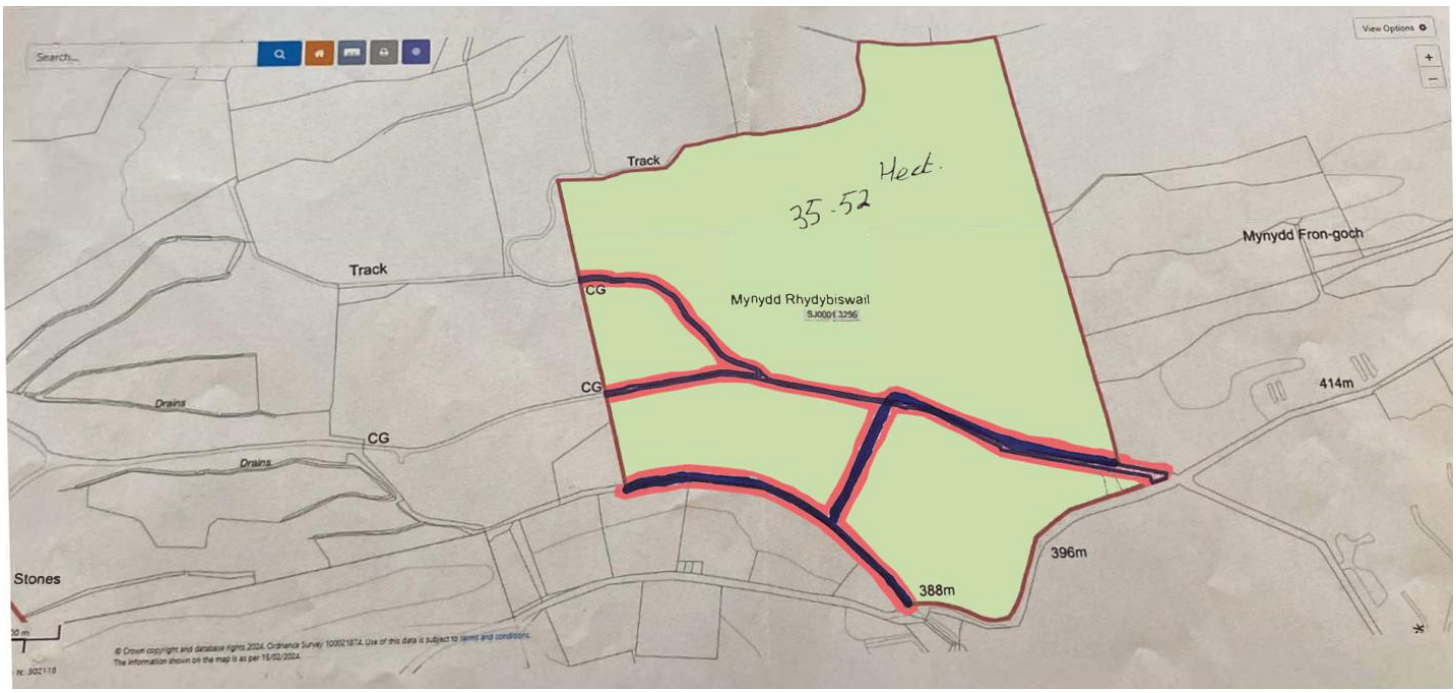
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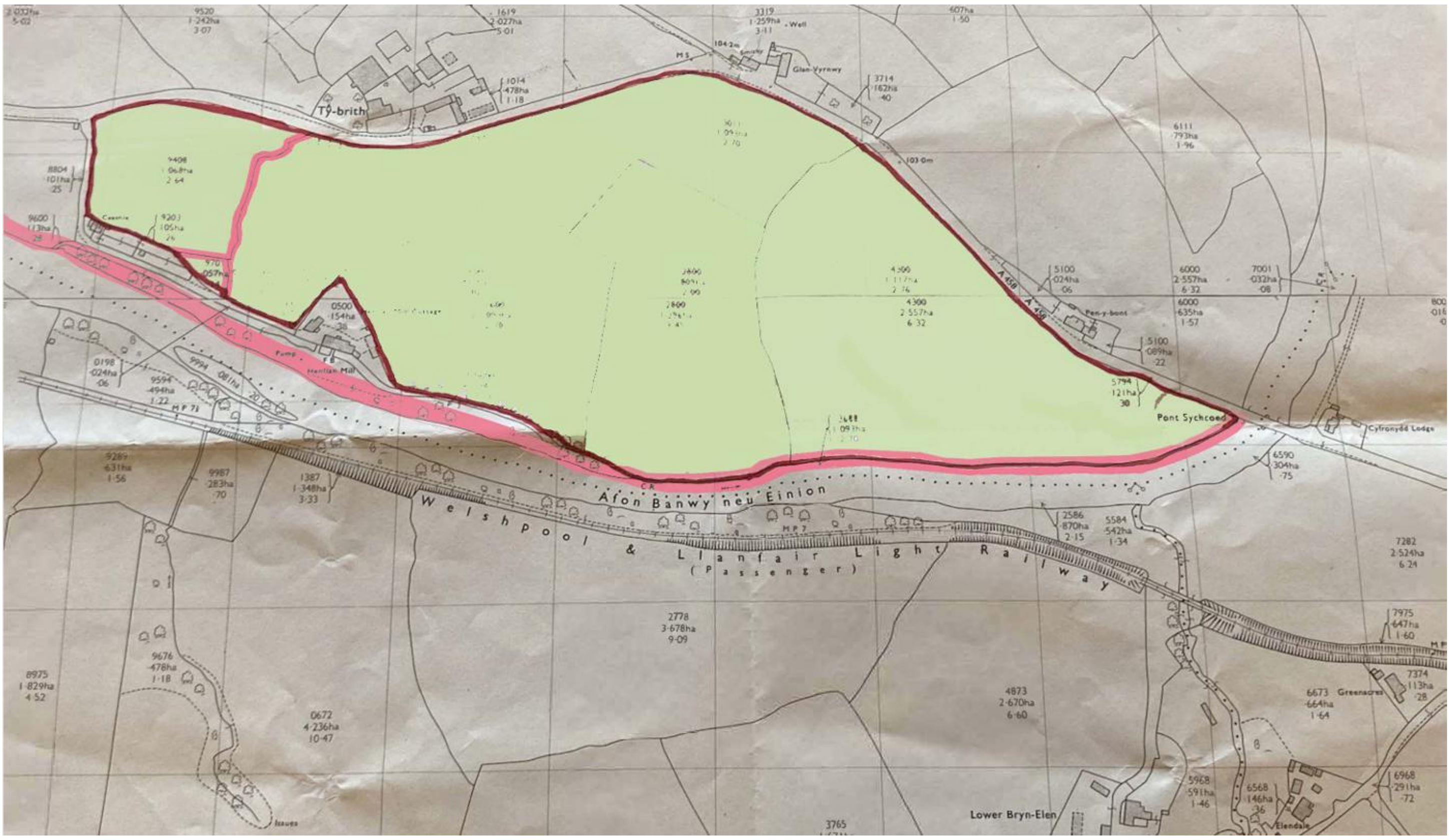

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Well
Pen-y-bont
Pont Sychcoed
Cyfronydd Lodge
Henllan Mill
Pump
Afon Banwy neu Einion
Welshpool & Llanfair Light Railway
(Passenger)
Lower Bryn-Elen
Greenacres
Elendale
A 458