Agricultural Benefit Statement

For the application of beneficial wastes to fields at:

Pen Y Parc, Llanvapley, Abergavenny, NP7 8SA

19th November 2025

1 Person with appropriate technical expertise and permit details

This benefit statement has been compiled by Dawn Loos (Consultant at 4R Group) who has the following qualifications and experience;

- B.Agric – Plant production
- PGDip – Agronomy
- MSc - Sustainable Agriculture
- 3 years of agronomic experience
- 4R Group Deployment Training Course
- Facts Qualified Advisor (FE/7676)

Verified by: Esther Koroma, (Environmental Consultant at 4R Group) FACTS FQA: FE/7273
Permit number under which this deployment application is being made: EPR/ GP3792SK

2 Where the waste is to be spread

Table 1. Where the waste is to be spread

Farm address:	Crossways & Pool Hall, Pen Y Parc, Llanvapley, Abergavenny, NP7 8SA	
Stockpile grid reference:	See table 4	
Area of the receiving land:	49.8 ha	
Quantity to be stored at any one time:	Stackable: 3000	Non-Stackable: 1250
Total maximum quantity to be spread:	9,168 t	
Location map document reference:	**Location map:** PYP_01a-b	

3 What is the waste to be spread?

Table 2. Description of waste(s) to be applied.

Waste	***EWC Code***	***Description***	***Waste Producer***	***Additional Information***
1.	19 09 02	Sludges from water clarification. Potable water treatment effluent.	DCWW Elan Valley	Non-stackable ferric liquid sludge
2.	19 09 02	Sludges from water clarification. Potable water treatment effluent.	DCWW Talybont	Non-stackable alum liquid sludge
3.	19 09 02	Sludges from water clarification. Potable water treatment effluent.	DCWW Court Farm	Stackable ferric sludge cake
4.	19 09 02	Sludges from water clarification. Potable water treatment effluent.	DCWW Llyswen	Non-stackable alum liquid sludge
5.	19 06 06	Whole digestate from anaerobic treatment of source segregated biodegradable waste.	Biogen	
6.	19 06 06	Whole digestate from anaerobic treatment of source segregated biodegradable waste.	Welsh Water Organic Energy	

4 Operational details

4.1 Cropping details

Table 3. Cropping details

Current crop including projected yield if known:	Refer to Tables 6-11
Is straw removed?	Y ☐ N ☐ N/A ☒
Following crop and any sensitive crops within rotation which you are amending the soil for in good time:	Refer to Tables 6-11
When do you intend to apply this waste, e.g., post-harvest – pre-ploughing, during seed bed cultivations, on the stubble over winter:	Spreading will only take place subject to ground conditions and following the Code of Good Agricultural Practice (Defra, 2011), NVZ regulations and the permit holder's Environmental Management System (EMS). Spreading activities will also comply with The Water Resources (Control of Agricultural Pollution) (Wales) Regulations 2021. Targeted periods of spreading on grass fields include early spring (late February), after each cut of silage, dependent

	on crop growth and weather conditions, and prior to grazing through summer and autumn (October) prior to deployment expiry. No more than 50t/ha will be spread on a field in any 3-week period in accordance with CoGAP, and no more than 250t/ha will be spread within any 12-month period. Should more than one waste type be applied, the maximum application rate, nutrient and N addition will not be exceeded. Application rates will be adjusted down accordingly.

4.2 Waste storage

Table 4. Waste storage

How is the waste to be stored? *e.g., mobile tank, field heap, spread on delivery*	Stackable wastes: Field Stockpiles Non-stackable wastes: Lagoon
Where is the waste to be stored prior to spreading?	Lagoon - SO 36048 15945 Field stockpile A – SO 35779 16045 Field stockpile B - SO 36977 16179 Field stockpile C – SO 36977 19166 Field stockpile D - SO 36856 18785 No more than 3000t in total will be stored across all field stockpiles at any given time.
Why were these storage locations chosen?	The stockpile locations are accessible by delivering vehicle, near field entrances so the potential damage to fields by delivering vehicles is minimal. The stockpiles are not within 10m of any ditch, watercourse, or footpath, not within a SPZ1, and are at least 50m from any well spring or borehole. They are also a safe distance from overhead powerlines. The lagoon will be emptied and cleaned prior to and after receiving wastes on this deployment.

4.3 Waste application

Table 5. Waste application

How is the waste to be spread and why is it to be spread that way?	DCWW liquid sludge will be surface applied using trailing shoe as this is readily available to the farmer.

	The cake and digestate will be spread using conventional rear discharge spreaders as these are the most appropriate for the material and rates it is to be applied at.
How do you plan to incorporate the waste following application?	There is no requirement for further incorporation of the waste on grass fields.
With liquid wastes is there any mole draining or sub-soiling planned? *Are there land drains in the field?*	No Yes
Other relevant operational information:	All fields have a soil pH of above 5 and therefore can receive application of the ferric based sludges, DCWW Elan Valley and DCWW Court Farm. DCWW Talybont and Llyswen are limited to fields above pH 6 due to being alum based.

Table 6. DCWW Elan Valley

Nutrient Requirements for Land at Pen Y Parc

						N			P_2O_5				K_2O				Mg				
Field Ref	**Total Area**	**Spread Area**	**Previous Crop**	**Next Crop**	**Soil pH**	**SNS**	**Req kg/ha**	***In Wst kg/ha**	**P Ind**	**Req kg/ha**	**Crop Use kg/ha**	***In Wst kg/ha**	**K Ind**	**Req kg/ha**	**Crop Use kg/ha**	***In Wst kg/ha**	**Mg Ind**	**Req kg/ha**	***In Wst kg/ha**	**Rate t/ha**	**Totals tonnes**
Crossways																					
1	14.70	12.60	Grass	Grass	6	M	200	0.9	4	0	65	16.1*	2-	170	228	0.9*	3	0	0.6	43	541.8
4	11.10	9.50	Grass	Grass	5.6	M	200	1.7	3	20	65	32.5*	1	180	228	1.6	3	0	1.1	87	826.5
Pool Hall																					
1L	3.63	3.20	Grass	Grass	7.5	M	200	5	1	95	65	46.7	2+	120	228	5.3*	3	0	3.2	250	800
2L	6.77	6.40	Grass	Grass	7.5	M	200	5	1	95	65	46.7	2+	120	228	5.3*	3	0	3.2	250	1600
4L	6.93	6.66	Grass	Grass	7	M	200	5	1	95	65	46.7	2-	170	228	5.3*	3	0	3.2	250	1665
5L	5.80	5.58	Grass	Grass	7.1	M	200	5	1	95	65	46.7	1	180	228	5.3*	3	0	3.2	250	1395
9L	6.16	5.86	Grass	Grass	6.2	M	200	3.4	2	65	65	64.6*	3	70	228	3.6*	3	0	2.2	173	1013.78
Ha	**55.09**	**49.80**																			**7842**

Grass = 2 cut silage with aftermath grazing

Nutrient requirement based on values for grass with 2 cuts of silage with aftermath grazing (target DM yield 9-12t/ha) described in RB209 (2023).

Expected Grazing yield of 9-12t/ha.

Crop use based on Grass totalling 38t/ha yield where 1.7kg/t P_2O_5 and 6.0kg/t K_2O removed in offtake (RB209, 2023).

N, P_2O_5, K_2O and Mg stated are **available** concentrations in units of kg/ha

***Total** P_2O_5 and K_2O stated where soil indices ≥2

Total N supplied at an application rate of 250 t/ha is 98.6 kg/ha

Table 7. DCWW Talybont

Nutrient Requirements for Land at Pen Y Parc

						N			P_2O_5				K_2O				Mg				
Field Ref	**Total Area**	**Spread Area**	**Previous Crop**	**Next Crop**	**Soil pH**	**SNS**	**Req kg/ha**	***In Wst kg/ha**	**P Ind**	**Req kg/ha**	**Crop Use kg/ha**	***In Wst kg/ha**	**K Ind**	**Req kg/ha**	**Crop Use kg/ha**	***In Wst kg/ha**	**Mg Ind**	**Req kg/ha**	***In Wst kg/ha**	**Rate t/ha**	**Totals tonnes**
Crossways																					
1	14.70	12.60	Grass	Grass	6	M	200	0.8	4	0	65	16*	2-	170	228	1.5*	3	0	1	60	756
4	11.10	9.50	Grass	Grass	5.6	M	200	0	3	20	65	0	1	180	228	0	3	0	0	0	0
Pool Hall																					
1L	3.63	3.20	Grass	Grass	7.5	M	200	3.5	1	95	65	33.3	2+	120	228	6.2	3	0	4.4	250	800
2L	6.77	6.40	Grass	Grass	7.5	M	200	3.5	1	95	65	33.3	2+	120	228	6.2	3	0	4.4	250	1600
4L	6.93	6.66	Grass	Grass	7	M	200	3.5	1	95	65	33.3	2-	170	228	6.2	3	0	4.4	250	1665
5L	5.80	5.58	Grass	Grass	7.1	M	200	3.5	1	95	65	33.3	1	180	228	5.6	3	0	4.4	250	1395
9L	6.16	5.86	Grass	Grass	6.2	M	200	3.4	2	65	65	64.8*	3	70	228	6*	3	0	4.2	243	1424
Ha	**55.09**	**49.80**																			**7640**

Grass = 2 cut silage with aftermath grazing

Nutrient requirement based on values for grass with 2 cuts of silage with aftermath grazing (target DM yield 9-12t/ha) described in RB209 (2023).

Expected Grazing yield of 9-12t/ha.

Crop use based on Grass totalling 38t/ha yield where 1.7kg/t P_2O_5 and 6.0kg/t K_2O removed in offtake (RB209, 2023).

N, P_2O_5, K_2O and Mg stated are **available** concentrations in units of kg/ha

***Total** P_2O_5 and K_2O stated where soil indices ≥2

Total N supplied at an application rate of 250 t/ha is 144.8 kg/ha

Table 8. DCWW Court Farm

Nutrient Requirements for Land at Pen Y Parc

						N			P_2O_5				K_2O				Mg				
Field Ref	**Total Area**	**Spread Area**	**Previous Crop**	**Next Crop**	**Soil pH**	**SNS**	**Req kg/ha**	***In Wst kg/ha**	**P Ind**	**Req kg/ha**	**Crop Use kg/ha**	***In Wst kg/ha**	**K Ind**	**Req kg/ha**	**Crop Use kg/ha**	***In Wst kg/ha**	**Mg Ind**	**Req kg/ha**	***In Wst kg/ha**	**Rate t/ha**	**Totals tonnes**
Crossways																					
1	14.70	12.60	Grass	Grass	6	M	200	0.1	4	0	65	15.9*	2-	170	228	3.7*	3	0	2.9	24	302.4
4	11.10	9.50	Grass	Grass	5.6	M	200	0.3	3	20	65	32.4*	1	180	228	6.8	3	0	5.9	49	465.5
Pool Hall																					
1L	3.63	3.20	Grass	Grass	7.5	M	200	1.2	1	95	65	68.8	2+	120	228	32.1*	3	0	24.9	208	665.6
2L	6.77	6.40	Grass	Grass	7.5	M	200	1.2	1	95	65	68.8	2+	120	228	32.1*	3	0	24.9	208	1331.2
4L	6.93	6.66	Grass	Grass	7	M	200	1.2	1	95	65	68.8	2-	170	228	32.1*	3	0	24.9	208	1385.28
5L	5.80	5.58	Grass	Grass	7.1	M	200	1.2	1	95	65	68.8	1	180	228	28.9	3	0	24.9	208	1160.64
9L	6.16	5.86	Grass	Grass	6.2	M	200	0.6	2	65	65	64.8*	3	70	228	15.1*	3	0	11.7	98	574.28
Ha	**55.09**	**49.80**																			**5885**

Grass = 2 cut silage with aftermath grazing

Nutrient requirement based on values for grass with 2 cuts of silage with aftermath grazing (target DM yield 9-12t/ha) described in RB209 (2023).

Expected Grazing yield of 9-12t/ha.

Crop use based on Grass totalling 38t/ha yield where 1.7kg/t P_2O_5 and 6.0kg/t K_2O removed in offtake (RB209, 2023).

N, P_2O_5, K_2O and Mg stated are **available** concentrations in units of kg/ha

***Total** P_2O_5 and K_2O stated where soil indices ≥2

Total N supplied at an application rate of 208 t/ha is 247.9 kg/ha

Table 9. Llyswen

Nutrient Requirements for Land at Pen Y Parc

						N			P_2O_5				K_2O				Mg				
Field Ref	**Total Area**	**Spread Area**	**Previous Crop**	**Next Crop**	**Soil pH**	**SNS**	**Req kg/ha**	***In Wst kg/ha**	**P Ind**	**Req kg/ha**	**Crop Use kg/ha**	***In Wst kg/ha**	**K Ind**	**Req kg/ha**	**Crop Use kg/ha**	***In Wst kg/ha**	**Mg Ind**	**Req kg/ha**	***In Wst kg/ha**	**Rate t/ha**	**Totals tonnes**
Crossways																					
1	14.70	12.60	Grass	Grass	6	M	200	0	4	0	65	16.2*	2-	170	228	8.1*	3	0	8.7	178	2242.8
4	11.10	9.50	Grass	Grass	5.6	M	200	0	3	20	65	0	1	180	228	0	3	0	0	0	0
Pool Hall																					
1L	3.63	3.20	Grass	Grass	7.5	M	200	0.1	1	95	65	11.4	2+	120	228	11.4*	3	0	12.3	250	800
2L	6.77	6.40	Grass	Grass	7.5	M	200	0.1	1	95	65	11.4	2+	120	228	11.4*	3	0	12.3	250	1600
4L	6.93	6.66	Grass	Grass	7	M	200	0.1	1	95	65	11.4	2-	170	228	11.4*	3	0	12.3	250	1665
5L	5.80	5.58	Grass	Grass	7.1	M	200	0.1	1	95	65	11.4	1	180	228	10.3	3	0	12.3	250	1395
9L	6.16	5.86	Grass	Grass	6.2	M	200	0.1	2	65	65	22.8*	3	70	228	11.4*	3	0	12.3	250	1465
Ha	**55.09**	**49.80**																			**9168**

Grass = 2 cut silage with aftermath grazing

Nutrient requirement based on values for grass with 2 cuts of silage with aftermath grazing (target DM yield 9-12t/ha) described in RB209 (2023).

Expected Grazing yield of 9-12t/ha.

Crop use based on Grass totalling 38t/ha yield where 1.7kg/t P_2O_5 and 6.0kg/t K_2O removed in offtake (RB209, 2023).

N, P_2O_5, K_2O and Mg stated are **available** concentrations in units of kg/ha

***Total** P_2O_5 and K_2O stated where soil indices ≥2

Total N supplied at an application rate of 250 t/ha is 92.8 kg/ha

Table 10. Biogen

Nutrient Requirements for Land at Pen Y Parc

						N			P_2O_5				K_2O				Mg				
Field Ref	**Total Area**	**Spread Area**	**Previous Crop**	**Next Crop**	**Soil pH**	**SNS**	**Req kg/ha**	***In Wst kg/ha**	**P Ind**	**Req kg/ha**	**Crop Use kg/ha**	***In Wst kg/ha**	**K Ind**	**Req kg/ha**	**Crop Use kg/ha**	***In Wst kg/ha**	**Mg Ind**	**Req kg/ha**	***In Wst kg/ha**	**Rate t/ha**	**Totals tonnes**
Crossways																					
1	14.70	12.60	Grass	Grass	6	M	200	72.7	4	0	65	14.9*	2-	170	228	42.2*	3	0	0.1	9	113.4
4	11.10	9.50	Grass	Grass	5.6	M	200	153.5	3	20	65	31.4*	1	180	228	80.3	3	0	0.2	19	180.5
Pool Hall																					
1L	3.63	3.20	Grass	Grass	7.5	M	200	185.5	1	95	65	19	2+	120	228	107.9*	3	0	0.3	23	73.6
2L	6.77	6.40	Grass	Grass	7.5	M	200	185.5	1	95	65	19	2+	120	228	107.9*	3	0	0.3	23	147.2
4L	6.93	6.66	Grass	Grass	7	M	200	185.5	1	95	65	19	2-	170	228	107.9*	3	0	0.3	23	153.18
5L	5.80	5.58	Grass	Grass	7.1	M	200	185.5	1	95	65	19	1	180	228	97.1	3	0	0.3	23	128.34
9L	6.16	5.86	Grass	Grass	6.2	M	200	185.8	2	65	65	38*	3	70	228	107.9*	3	0	0.3	23	134.78
Ha	**55.09**	**49.80**																			**931**

Grass = 2 cut silage with aftermath grazing

Nutrient requirement based on values for grass with 2 cuts of silage with aftermath grazing (target DM yield 9-12t/ha) described in RB209 (2023).

Expected Grazing yield of 9-12t/ha.

Crop use based on Grass totalling 38t/ha yield where 1.7kg/t P_2O_5 and 6.0kg/t K_2O removed in offtake (RB209, 2023).

N, P_2O_5, K_2O and Mg stated are **available** concentrations in units of kg/ha

***Total** P_2O_5 and K_2O stated where soil indices ≥2

Total N supplied at an application rate of 23 t/ha is 246.1 kg/ha

Table 11. Welsh Water Organic Energy

Nutrient Requirements for Land at Pen Y Parc

						N			P_2O_5				K_2O				Mg				
Field Ref	**Total Area**	**Spread Area**	**Previous Crop**	**Next Crop**	**Soil pH**	**SNS**	**Req kg/ha**	***In Wst kg/ha**	**P Ind**	**Req kg/ha**	**Crop Use kg/ha**	***In Wst kg/ha**	**K Ind**	**Req kg/ha**	**Crop Use kg/ha**	***In Wst kg/ha**	**Mg Ind**	**Req kg/ha**	***In Wst kg/ha**	**Rate t/ha**	**Totals tonnes**
Crossways																					
1	14.70	12.60	Grass	Grass	6	M	200	39.4	4	0	65	14.6*	2-	170	228	25.7*	3	0	0.2	7	88.2
4	11.10	9.50	Grass	Grass	5.6	M	200	84.4	3	20	65	31.3*	1	180	228	49.5	3	0	0.4	15	142.5
Pool Hall																					
1L	3.63	3.20	Grass	Grass	7.5	M	200	163.2	1	95	65	30.2	2+	120	228	106.3*	3	0	0.8	29	92.8
2L	6.77	6.40	Grass	Grass	7.5	M	200	163.2	1	95	65	30.2	2+	120	228	106.3*	3	0	0.8	29	185.6
4L	6.93	6.66	Grass	Grass	7	M	200	163.2	1	95	65	30.2	2-	170	228	106.3*	3	0	0.8	29	193.14
5L	5.80	5.58	Grass	Grass	7.1	M	200	163.2	1	95	65	30.2	1	180	228	95.7	3	0	0.8	29	161.82
9L	6.16	5.86	Grass	Grass	6.2	M	200	163.2	2	65	65	60.5*	3	70	228	106.3*	3	0	0.8	29	169.94
Ha	**55.09**	**49.80**																			**1034**

Grass = 2 cut silage with aftermath grazing

Nutrient requirement based on values for grass with 2 cuts of silage with aftermath grazing (target DM yield 9-12t/ha) described in RB209 (2023).

Expected Grazing yield of 9-12t/ha.

Crop use based on Grass totalling 38t/ha yield where 1.7kg/t P_2O_5 and 6.0kg/t K_2O removed in offtake (RB209, 2023).

N, P_2O_5, K_2O and Mg stated are **available** concentrations in units of kg/ha

***Total** P_2O_5 and K_2O stated where soil indices ≥2

Total N supplied at an application rate of 29 t/ha is 246.5 kg/ha

5 Compliance with NVZ regulations

Table 9. Compliance with NVZ regulations

<table>
<tr><td>Does the site fall within a designated NVZ?</td><td>Y ☒ N ☐ (Please skip to section 6)</td></tr>
<tr><td>Do closed periods apply for the wastes to be applied?</td><td>Y ☒ N ☐

If yes, please indicate the appropriate period:

<table>
<tr><th>Start Date</th><th>End Date</th><th>Land Use</th><th>Soil Type</th><th></th></tr>
<tr><td>1st Aug</td><td>31st Dec</td><td>Tillage Land</td><td>Shallow/Sandy</td><td>☐</td></tr>
<tr><td>1st Sept</td><td>31st Dec</td><td>Grassland</td><td>Shallow/Sandy</td><td>☐</td></tr>
<tr><td>16th Sept</td><td>31st Dec</td><td>Tillage Land*</td><td>Shallow/Sandy</td><td>☐</td></tr>
<tr><td>1st Oct</td><td>31st Jan</td><td>Tillage Land</td><td>All Other Soils</td><td>☐</td></tr>
<tr><td>15th Oct</td><td>31st Jan</td><td>Grassland</td><td>All Other Soils</td><td>☒</td></tr>
</table>

*For Tillage Land with crops sown on or before 15th September

*Applies to Biogen & Welsh Water Organic Energy

If no, applications will be carried out as per CoGAP i.e., when ground conditions are suitable and when no heavy rain is forecast.</td></tr>
<tr><td>Will application rates comply with crop requirement and field/whole farm limit?</td><td>Refer to Tables 6-11</td></tr>
<tr><td>Previous applications:</td><td>None</td></tr>
</table>

6 Benefits and nutrients supplied to the soil or crop from this application.

6.1 Receiving soils

The nutrient status of individual fields to be registered are provided in Tables 6-11 above. General soil type(s) for the fields to be registered are:

Table 10. Soil type

Light sand soils	Soils which are sand, loamy sand or sandy loam to 40cm depth and are sand or loamy sand between 40 and 80 cm, or over sandstone rock.	☐
Shallow soils	Soils over impermeable subsoils and those where the parent rock (chalk, limestone or other rock) is within 40cm of the soil surface. Sandy soils developed over sandstone rock should be regarded as light sand soils.	☐
Medium soils	Mostly medium-textured mineral soils that do not fall into any other soil category. This includes sandy loams over clay, deep loams, and silty or clayey topsoils that have sandy or loamy subsoils.	☒
Deep clayey soils	Soils with predominantly sandy clay loam, silty clay loam, clay loam, sandy clay, silty clay or clay topsoil overlying clay subsoil to more than 40cm depth. Deep clayey soils normally need artificial field drainage.	☐
Deep silty soils	Soils of sandy silt loam, silt loam or silty clay loam textures to 100 cm depth or more. Silt soils formed on marine alluvium, warp soils (river alluvium) and brickearth soils are in this category. Silty clays of low fertility should be regarded as other mineral soils.	☐
Organic soils	Soils that are predominantly mineral but with between 10 and 20% organic matter to depth. These can be distinguished by darker colouring that stains the fingers black or grey.	☐
Peat soils	Soils that contain more than 20% organic matter derived from sedge or similar peat material.	☐

The soil analyses (**Soil Analysis**) show the soils to have ample background concentrations of Mg (i.e., ADAS Index of 2-3). However, grazing fields such as these could benefit from Mg applications to aid in reducing the risk of hypomagnesaemia in grazing livestock.

6.2 Waste characterisation

Full characterisation of the waste with total and available nutrients at the recommended rates for the waste is supplied in **4.2 Waste Interpretations_Pen Y Parc (2025)**. This information is further summarised against the nutrient requirements for proposed crops in Tables 6-11 above.

Limiting Factors:

- **250t/ha max application rate:** DCWW Elan Valley, DCWW Talybont, DCWW Llyswen
- **P content:** Biogen, WWOE, DCWW Court Farm, DCWW Elan Valley, DCWW Talybont, DCWW Llyswen

Please note, DCWW report all their analysis on a dry matter basis, including the liquid treatment sludges, unless otherwise stated.

6.3 *Summary of benefits*

These wastes are a source of essential elements N, P, K, macronutrients Mg, Ca, S and provide trace amounts of micronutrients. Wastes are beneficially used to replace a proportion of the bagged mineral fertiliser used by farmers. The recommended application rates shown in Tables 6-11 are based on the crop requirement and soil analysis.

Clean water treatment sludges contain significant amounts of organic matter. Additions of organic matter to soil will improve soil structural stability, biological activity, water and nutrient holding capacity, i.e., resistance to drought, and reduction of localised flooding, reduced leaching of nutrients, and improved workability in soil. Organic matter is a particularly good source of N and S, and organic acids that aid nutrient solubility and uptake, as well as enhancing microbial activity for enhanced nutrient cycling in soils.

6.4 *Additional requirements*

Fields may require additional N, P, and K to achieve optimum yield. Fields may also require liming to raise the pH.

7 Potential negative impacts to the soil or crop from this application

7.1 *Potentially Toxic Elements (PTEs)*

All the wastes contain traces of PTEs, however concentrations applied to the receiving soils are below maximum upper limits for heavy metal applications described in the Sludge (Use in Agriculture) Regulations 1989 (SI, 1989). Refer to interpretations in **4.2 Waste Interpretations_Pen Y Parc farm (2025)**.

7.2 *Other waste characteristics*

The pH of the wastes' ranges from 6.6 to 8.8.

It is unlikely that soil pH will decrease following the application detailed here due to the extensive buffering capacity of the receiving soils. The pH levels of the receiving soils are ≥ 5.6 therefore it is unlikely that availability of any naturally occurring heavy metals present in these soils will become more available after application of these wastes.

7.3 *Operational factors*

1. Liquid wastes will be surface spread, applied using trailing shoe. The cake will be spread using a rear discharge spreader.
2. Potential compaction of receiving soil will be mitigated by suitable adjustment of tyres/tyre pressure to match soil conditions, direction of spreading and load to be spread.
3. Wastes will be applied when ground and weather conditions are suitable, following CoGAP to avoid soil damage including wheel ruts, compaction, structural damage, erosion and run-off.

8 Sensitive human and environmental receptors

Locations of sensitive receptors are shown in **PYP_01 Map**. Prevailing winds are south-westerly.

9 Practices to reduce the impacts of the operation on identified sensitive receptors.

Generic measures (in addition to permit requirements and following the EMS) to reduce potential negative impacts of the proposed spreading operation will be as follows:

1. Spreading will only be undertaken when weather conditions are suitable within restrictions outlined in CoGAP and any relevant closed periods.
2. Spreading will not be carried out in any areas of a field that will be sub-soiled.
3. Machinery operations will take account of soil conditions, slopes *etc.*
4. Liquid spreading machinery will be turned off and lifted away from soil prior to turning at the end of each run.
5. Machinery will be checked daily when in use, regularly serviced and spreading equipment calibrated. Umbilical hoses will be regularly checked for damage to prevent leaks.
6. Machinery turns will not be executed in the buffer strips.
7. Waste deliveries to field/stores will be supervised.
8. All spillages will be reported immediately to NRW.

10 Contingency planning

1. Replacement spreading machinery will be available to prevent waste being retained in faulty machinery.
2. Hire vehicles will be used if required. All machinery will be fully serviced.
3. There will be a sufficient number of trained staff available to ensure that the operation continues throughout operational hours (*i.e.,* there will be sufficient cover for illness, holiday *etc.*).
4. In adverse weather, storage is available until ground/weather conditions become favourable for land application.
5. In circumstances where the wastes cannot be stored or spread beyond normal capacities, wastes will be diverted to a local alternative deployment or DCWW sewage treatment works.