Agricultural Benefit Statement

For the application of beneficial wastes to fields at;

Rosedew Farm, Llantwit Major, South Glamorgan, CF61 1PZ

12th January 2026

1 Person with appropriate technical expertise and permit details

This benefit statement has been compiled by Dawn Loos (Lead 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 Jonathan Lloyd; FACTS Qualified Advisor (No. FE/ 4524)
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:	Rosedew Farm, Llantwit Major, South Glamorgan, CF61 1PZ	
Stockpile grid reference:	Refer to Table 4	
Area of the receiving land:	48.7 ha	
Quantity to be stored at any one time:	Stackable: 3000	Non-Stackable: 1,250
Total maximum quantity to be spread:	12,175 t	
Location map document reference:	RF-01&2	

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	Non-stackable ferric liquid sludge
2	19 09 02	Sludges from water clarification. Potable water treatment effluent.	DCWW Llyswen	Non-stackable alum liquid sludge
3	19 09 02	Sludges from water clarification. Potable water treatment effluent.	DCWW Talybont	Non-stackable alum liquid sludge
4	19 09 02	Sludge cake from water clarification. Potable water treatment effluent.	DCWW Court Farm	Stackable ferric sludge cake
5	19 06 06	Liquid digestate from anaerobic treatment of source segregated biodegradable waste.	Biogen Digesate	
6	19 06 06	Liquid digestate from anaerobic treatment of source segregated biodegradable waste.	Welsh Water Organic Energy Digestate	

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), Farming Rules for Water, NVZ regulations and the permit holder's Environmental Management System (EMS). Spreading will also comply with the Water Resources (Control of Agricultural Pollution) Wales Regulations 2021, Targeted periods of spreading are from February, through May as per the RB209 (2023).

	No more than 50t/ha of liquid sludge 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. Wastes application will commence from the deployment issue date, as soon as ground, weather, and crop conditions are favourable. For wastes with application rates higher than 50 tons per hectare (see tables 6-11), this will be split into applications of 50 tons per hectare, as explained above, until the capacity is reached. This is in order to reduce the chances of run off.

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 stockpile Non-stackable wastes: Lagoon
Where is the waste to be stored prior to spreading?	Lagoon – SS 97572 67485 A. SS 98164 67231 B. SS 97896 67495 C. SS 97676 67419 D. SS 97493 67492 E. SS 97220 67705
Why were these storage locations chosen?	The storage locations were chosen due to thier suitable location relative to the spreading fields and availability for use. They are not within 10m of any ditch, watercourse, or footpath, not within a SPZ1, and is at least 50m from any well spring or borehole.
Additional storage information	The lagoon will be clean and empty before waste from this deployment is stored in it. Only waste as specified in this deployment will be stored in the proposed storage locations. Different waste types will not be mixed.

4.3 Waste application

Table 5. Waste application

How is the waste to be spread and why is it to be spread that way?	Liquid sludges will be surface spread by tractor and tanker using a low-trajectory splash plate. The cake will be spread using conventional rear discharge spreaders

How do you plan to incorporate the waste following application?	There is no requirement for further incorporation of wastes due to low ammonia content of DCWW sludge and minimal odour.
With liquid wastes is there any mole draining or sub-soiling planned? *Are there land drains in the field?*	No No
Other relevant operational information:	The wastes may be applied separately or in combination. If the wastes are applied in combination the total combined amount applied will not exceed 250t/ha, the total nitrogen loading will be less than 250kg/ha, and the amount of available nitrogen and total or available phosphate and potash (whichever is appropriate) will not exceed the fertiliser recommendation or the amount removed in crop offtake, whichever is the greater.

Table 6. DCWW Elan Valley

						N			P_2O_5				K_2O				Mg				
Field Reference	**Total Area**	**Sprd 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**
Field 1	12.9	12.2	FB	Maize	6.5	1	100	1.5	3	20	56	28*	2+	145	176	1.6*	3	0	1	75	**915**
Field 2	7.7	7.5	Maize	FB	7.2	1	120	1.6	3	0	60	29.9*	2+	310	340	1.7*	3	0	1	80	**600**
Field 3	10.8	10.1	FB	Maize	7.3	1	100	1.5	3	20	56	28*	2+	145	176	1.6*	3	0	1	75	**758**
Field 4A	11	10	WW	FB	7.1	1	120	1.6	3	0	60	29.9*	2-	340	340	1.7*	3	0	1	80	**800**
Field 4B	10	8.9	WW	FB	7.1	1	120	1.6	3	0	60	29.9*	2-	340	340	1.7*	3	0	1	80	**712**
Ha	**52.4**	**48.7**																			**3785**

Nutrient requirement based on values described in the nutrient management guide (RB209 2023).
SNS calculated for high annual rainfall area (>700mm/annum) with medium soils.
WW = winter wheat, FB = fodder beet

Crop use based on **Maize** totalling **40t/ha** yield where **1.4kg/t P_2O_5** and **4.4kg/t K_2O** removed in offtake
Crop use based on **Fodder beet** with a yield of **85t/ha** where **0.7kg/t P2O5** and **4kg/t K2O** removed in offtake

*N, P2O5, K2O and Mg stated are **Available** concentrations in kg/ha
****Total** P2O5 and K2O stated where soil indices ≥2
Availablity of nutrients in waste - N measured as NH_4, P_2O_5 50%, K_2O 90%, Mg 25%
Total N supplied at an application rate of 80t/ha is 31.5kg/ha

Table 7. DCWW Llyswen

						N			P_2O_5				K_2O				Mg				
Field Reference	**Total Area**	**Sprd 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**
Field 1	12.9	12.2	FB	Maize	6.5	1	100	0.1	3	20	56	22.8*	2+	145	176	11.4*	3	0	12.3	250	**3050**
Field 2	7.7	7.5	Maize	FB	7.2	1	120	0.1	3	0	60	22.8*	2+	310	340	11.4*	3	0	12.3	250	**1875**
Field 3	10.8	10.1	FB	Maize	7.3	1	100	0.1	3	20	56	22.8*	2+	145	176	11.4*	3	0	12.3	250	**2525**
Field 4A	11	10	WW	FB	7.1	1	120	0.1	3	0	60	22.8*	2-	340	340	11.4*	3	0	12.3	250	**2500**
Field 4B	10	8.9	WW	FB	7.1	1	120	0.1	3	0	60	22.8*	2-	340	340	11.4*	3	0	12.3	250	**2225**
Ha	**52.4**	**48.7**																			**12175**

Nutrient requirement based on values described in the nutrient management guide (RB209 2023).
SNS calculated for high annual rainfall area (>700mm/annum) with medium soils.
WW = winter wheat, FB = fodder beet

Crop use based on **Maize** totalling **40t/ha** yield where **1.4kg/t P_2O_5** and **4.4kg/t K_2O** removed in offtake
Crop use based on **Fodder beet** with a yield of **85t/ha** where **0.7kg/t P2O5** and **4kg/t K2O** removed in offtake

*N, P2O5, K2O and Mg stated are **Available** concentrations in kg/ha
****Total** P2O5 and K2O stated where soil indices ≥2
Availablity of nutrients in waste - N measured as NH_4, P_2O_5 50%, K_2O 90%, Mg 25%
Total N supplied at an application rate of 250t/ha is 92.8kg/ha

Table 8. DCWW Talybont

						N			P_2O_5				K_2O				Mg				
Field Reference	**Total Area**	**Sprd 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
Field 1	12.9	12.2	FB	Maize	6.5	1	100	1.5	3	20	56	28*	2+	145	176	2.6*	3	0	1.8	105	**1281**
Field 2	7.7	7.5	Maize	FB	7.2	1	120	1.6	3	0	60	29.9*	2+	310	340	2.8*	3	0	1.9	112	**840**
Field 3	10.8	10.1	FB	Maize	7.3	1	100	1.5	3	20	56	28*	2+	145	176	2.6*	3	0	1.8	105	**1061**
Field 4A	11	10	WW	FB	7.1	1	120	1.6	3	0	60	29.9*	2-	340	340	2.8*	3	0	1.9	112	**1120**
Field 4B	10	8.9	WW	FB	7.1	1	120	1.6	3	0	60	29.9*	2-	340	340	2.8*	3	0	1.9	112	**997**
Ha	**52.4**	**48.7**																			**5298**

Nutrient requirement based on values described in the nutrient management guide (RB209 2023).
SNS calculated for high annual rainfall area (>700mm/annum) with medium soils.
WW = winter wheat, FB = fodder beet

Crop use based on **Maize** totalling **40t/ha** yield where **1.4kg/t P_2O_5** and **4.4kg/t K_2O** removed in offtake
Crop use based on **Fodder beet** with a yield of **85t/ha** where **0.7kg/t P2O5** and **4kg/t K2O** removed in offtake

*N, P2O5, K2O and Mg stated are **Available** concentrations in kg/ha
****Total** P2O5 and K2O stated where soil indices ≥2
Availablity of nutrients in waste - N measured as NH_4, P_2O_5 50%, K_2O 90%, Mg 25%
Total N supplied at an application rate of 112t/ha is 64.9kg/ha

Table 9. DCWW Court Farm Cake

						N			P_2O_5				K_2O				Mg				
Field Reference	**Total Area**	**Sprd 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
Field 1	12.9	12.2	FB	Maize	6.5	1	100	0.2	3	20	56	27.8*	2+	145	176	6.5*	3	0	5	42	**512**
Field 2	7.7	7.5	Maize	FB	7.2	1	120	0.3	3	0	60	29.8*	2+	310	340	6.9*	3	0	5.4	45	**338**
Field 3	10.8	10.1	FB	Maize	7.3	1	100	0.2	3	20	56	27.8*	2+	145	176	6.5*	3	0	5	42	**424**
Field 4A	11	10	WW	FB	7.1	1	120	0.3	3	0	60	29.8*	2-	340	340	6.9*	3	0	5.4	45	**450**
Field 4B	10	8.9	WW	FB	7.1	1	120	0.3	3	0	60	29.8*	2-	340	340	6.9*	3	0	5.4	45	**401**
Ha	**52.4**	**48.7**																			**2125**

Nutrient requirement based on values described in the nutrient management guide (RB209 2023).
SNS calculated for high annual rainfall area (>700mm/annum) with medium soils.
WW = winter wheat, FB = fodder beet

Crop use based on **Maize** totalling **40t/ha** yield where **1.4kg/t P_2O_5** and **4.4kg/t K_2O** removed in offtake
Crop use based on **Fodder beet** with a yield of **85t/ha** where **0.7kg/t P2O5** and **4kg/t K2O** removed in offtake

*N, P2O5, K2O and Mg stated are **Available** concentrations in kg/ha
****Total** P2O5 and K2O stated where soil indices ≥2
Availablity of nutrients in waste - N measured as NH_4, P_2O_5 50%, K_2O 90%, Mg 25%
Total N supplied at an application rate of 45t/ha is 53.6kg/ha

Table 10. Biogen Digestate

						N			P_2O_5				K_2O				Mg				
Field Reference	**Total Area**	**Sprd 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
Field 1	12.9	12.2	FB	Maize	6.5	1	100	96.9	3	20	56	19.8*	2+	145	176	56.3*	3	0	0.1	12	**146**
Field 2	7.7	7.5	Maize	FB	7.2	1	120	113.1	3	0	60	23.1*	2+	310	340	65.7*	3	0	0.2	14	**105**
Field 3	10.8	10.1	FB	Maize	7.3	1	100	96.9	3	20	56	19.8*	2+	145	176	56.3*	3	0	0.1	12	**121**
Field 4A	11	10	WW	FB	7.1	1	120	113.1	3	0	60	23.1*	2-	340	340	65.7*	3	0	0.2	14	**140**
Field 4B	10	8.9	WW	FB	7.1	1	120	113.1	3	0	60	23.1*	2-	340	340	65.7*	3	0	0.2	14	**125**
Ha	**52.4**	**48.7**																			**637**

Nutrient requirement based on values described in the nutrient management guide (RB209 2023).
SNS calculated for high annual rainfall area (>700mm/annum) with medium soils.
WW = winter wheat, FB = fodder beet

Crop use based on **Maize** totalling **40t/ha** yield where **1.4kg/t P_2O_5** and **4.4kg/t K_2O** removed in offtake
Crop use based on **Fodder beet** with a yield of **85t/ha** where **0.7kg/t P2O5** and **4kg/t K2O** removed in offtake

*N, P2O5, K2O and Mg stated are **Available** concentrations in kg/ha
****Total** P2O5 and K2O stated where soil indices ≥2
Availablity of nutrients in waste - N measured as NH_4, P_2O_5 50%, K_2O 90%, Mg 25%
Total N supplied at an application rate of 14t/ha is 149.8kg/ha

Table 11. Welsh Water Organic Energy Digestate

						N			P_2O_5				K_2O				Mg				
Field Reference	**Total Area**	**Sprd 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**
Field 1	12.9	12.2	FB	Maize	6.5	1	100	73.2	3	20	56	27.1*	2+	145	176	47.7*	3	0	0.4	13	**159**
Field 2	7.7	7.5	Maize	FB	7.2	1	120	78.8	3	0	60	29.2*	2+	310	340	51.3*	3	0	0.4	14	**105**
Field 3	10.8	10.1	FB	Maize	7.3	1	100	73.2	3	20	56	27.1*	2+	145	176	47.7*	3	0	0.4	13	**131**
Field 4A	11	10	WW	FB	7.1	1	120	78.8	3	0	60	29.2*	2-	340	340	51.3*	3	0	0.4	14	**140**
Field 4B	10	8.9	WW	FB	7.1	1	120	78.8	3	0	60	29.2*	2-	340	340	51.3*	3	0	0.4	14	**125**
Ha	**52.4**	**48.7**																			**660**

Nutrient requirement based on values described in the nutrient management guide (RB209 2023).
SNS calculated for high annual rainfall area (>700mm/annum) with medium soils.
WW = winter wheat, FB = fodder beet

Crop use based on **Maize** totalling **40t/ha** yield where **1.4kg/t P_2O_5** and **4.4kg/t K_2O** removed in offtake
Crop use based on **Fodder beet** with a yield of **85t/ha** where **0.7kg/t P2O5** and **4kg/t K2O** removed in offtake

*N, P2O5, K2O and Mg stated are **Available** concentrations in kg/ha
****Total** P2O5 and K2O stated where soil indices ≥2
Availablity of nutrients in waste - N measured as NH_4, P_2O_5 50%, K_2O 90%, Mg 25%
Total N supplied at an application rate of 14t/ha is 119kg/ha

5 Compliance with NVZ regulations

Table 14. Compliance with NVZ regulations

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

Applicable to: Biogen & WWOE

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

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>Yes, refer to table 6 – 11</td></tr>
<tr><td>Previous applications:</td><td>See online form entries.</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 15. 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 local soils have a high magnesium content due to the underlying geology of the area, and the layers of dolostone. The low levels of addition from the proposed wastes will add an easily available source for the rapidly growing plants but is insufficient to have any effect on the Mg Index.

6.2 Waste characterisation

Full characterisations of individual wastes with total and available nutrients at the recommended rates for each waste stream are supplied in **Waste Analysis**. This information is further summarised against the nutrient requirements for proposed crops in tables 6-11 above.

Limiting factors for the different wastes are as follows:

- Total max application rate (250t/ha): DCWW Llyswen.
- Phosphorous: DCWW Talybont, Elan Valley, Court Farm, Biogen, WWOE & Andigestion.
- Nitrogen: Biogen

Important information

- DCWW report all their analysis on a dry matter basis, including the liquid treatment sludges, unless otherwise stated.
- The moisture content at time of analysis is indicative of whether the sludge is a cake or a liquid. Typically, the sludge cake samples contain a significantly higher dry matter content than the liquid

6.3 Summary of benefits

These wastes are a source of essential elements RAN, 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.

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, 10 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.

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 **Waste Analysis**.

7.2 Other waste characteristics

The pH levels in the wastes range from 6.6-8.8.

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 between 6.5 and 7.3, 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.

The potable water treatment sludges contain varying amounts of Al and Fe due to the flocculation process in the water treatment. At low pH (<6.0), aluminium can potentially transform into the toxic Al^{3+} species, it is therefore necessary to avoid spreading Al flocculated wastes on fields with pH <6.0 as this can cause stunt root growth and induced phosphate deficiency in crops. Additionally, care will be taken to prevent the waste entering a watercourse because aluminium can harm aquatic life. This will be achieved through observing buffer zones as per the location plan and the SSRA. Also, watercourses will be checked before, during and following spreading.

Iron flocculated wastes also have potential disbenefits if applied to inappropriate soils. Spreading high Fe wastes onto soils with pH < 5.0 is not recommended. Spreading onto fields with soil pH between 5.0- 5.5 requires consideration and possible mitigation. Due to potential for Fe-oxide formation which can reduce P_2O_5 mobility, spreading of Fe-flocculated wastes onto fields that are pH 5.0-5.5 has been avoided.
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7.3 Operational factors

1. Liquid wastes will be surface spread, applied using a low trajectory splash plate.

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. Sampling methods will be consistent with those set out in the RB209, and the analysis for PTEs are consistent with the code of agricultural practice.
4. 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 Practices to reduce the impacts of the operation on identified sensitive receptors

Three sensitive receptors have been identified in the greater surrounding area, Lowland calcareous grassland (protected habitat), Prehistoric Castle Ditches Camp (scheduled ancient monument) and SINC No. 306 C47-S2. All three of these receptors have been marked as no spread zones with sufficient buffering for the prevention of potential negative impacts. The wastes intended to be spread are low risk in terms of odour and being carried by wind.

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 the EA.

9 Contingency planning

Replacement spreading machinery will be available to prevent waste being retained in faulty machinery. Hire vehicles will be used if required. All machinery will be fully serviced.

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.*).

In adverse weather, storage is available until ground/weather conditions become favourable for land application.

In circumstances where the wastes cannot be stored or spread beyond normal capacities, wastes will be diverted to a local alternative deployment or their point of origin.

10 Nominated Competent Person

The NCP works remotely to the 4R Office in Newent and is available to be on site within 2 hours of the spreading time. They will also be on site within 4 hours at any other time in accordance with rule 1.1.1 of the Landspreading: how to comply with your permit guidance.