

Doc 2.

19 NOV 2020

**Certificate to support agricultural benefit of paper sludge  
for use at Pwlllydarren Farm, Welsh St Donats,  
Cowbridge**

**November 2020**

**Introduction.**

This certificate relates to the use of paper sludge as produced by Northwood and Wepper Ltd, for its subsequent use as a soil conditioner and valuable inorganic fertiliser replacement.

**Paper Sludge Analysis**

Paper sludge analysis are reported with each field sheet and at Doc 3, and are as determined by NRM Laboratories. These results demonstrate the range of analysis considered necessary to cover the potential benefits and risks associated with these waste source, as approved by the Code of Practise for Land Spreading Paper Mill Sludge 1998. This analysis is considered as representative considering the consistent input source materials processed in the Northwood and Wepper Ltd Bridgend Mill.

Results indicate very low levels of heavy metals as expected with these waste streams, while benefits arise from organic matter and major plant nutrients dependant on application rate and as listed in the field sheets (Doc 1). Arsenic, Selenium, Molybdenum, Fluoride and Fats & Oils do not pose a risk in this waste stream, hence have not been routinely analysed. These elements have been analysed in many research documents that have been published on the use of paper sludge, and confirm this conclusion

These major plant nutrients are present at moderate levels and will contribute to plant growth by the addition to soil reserves specifically of nitrogen, phosphate, potash and sulphur.

**Crop Requirements**

Soil analysis results for proposed area of land submitted for this exemption are at the relevant field sheets (Doc 1). Cropping on this land is based on an arable rotation including short term leys managed for conservation. Next crops are w wheat on all fields.

RB 209 indicates the following available crop offtake nutrient requirements in kg/ha independent of soil type.

|         | Nitrogen | Phosphate | Potash |
|---------|----------|-----------|--------|
| W Wheat | 220      | 65        | 55     |

Paper sludge will supply nitrogen, phosphate, potash and sulphur at the rates specified in field sheets (doc1) to contribute to plant growth.

The main waste stream to be applied on this land will be the Northwood and Wepper paper sludge as Doc 3.

Additional fertiliser needs over and above that required for crop uptake will be met from artificial fertiliser. Whilst phosphate applications exceed crop recommendations on fields 5 and 6, this will be balanced by crop offtake calculated at around 65 kg/ha of phosphate. Hence no additions to soil reserves will result from this application.

Soil pH of all fields indicate soils saturated in calcium that will not be affected by the very low neutralising value of either paper sludge source.

### **Spreading method**

It is proposed that spreading will be undertaken using a conventional rear discharge manure spreader as other farm manure spreading operations, followed by ploughing in. This will be after ploughing the current crop in summer 2021. Good practise will continue in relation to undertaking the activity to comply with relevant Codes of Practise.

### **Pollution risk assessment.**

Land spreading maps are at each field sheet and outline safe spreading areas and non spreading areas associated with surface water protection. No aquifer or borehole protection is relevant for these areas of land. No NVZ restrictions apply to this land. All exclusion areas are of a minimum 10 metre width to comply with good practice.

A more detailed pollution risk assessment is at the land sheets attached (Doc 1)

A storage site has been identified with its grid reference and offers sufficient distance from housing and watercourses not to cause visual or environmental issues.

A risk assessment for this storage location is at Doc 1.

No more than 250 t/ha will be applied per annum.

It is considered no harm to human health or risk of pollution will occur with the operation following the guidelines as recommended in this certificate and its associated docs.

Signed .....  .....

Date ..... 18-11-20. ....

Vocational experience - 18 years Agricultural Consultant with ADAS Consulting

Qualifications

- BSc (Hons) Agric, OND Agric, FACTS

It is considered that agricultural benefit is obtained from the application of paper sludge following the guideline for application as in this certificate.