

# **Scheme Rules for England, Scotland, Wales & Northern Ireland**

## **Biofertiliser Certification Scheme Renewable Energy Assurance Ltd**

**7th Floor  
Capital Tower  
91 Waterloo Road  
London SE1 8RT**

**website: <http://www.biofertiliser.org.uk/>**

**Note: The provisions of the Scheme Rules and the Guidance given in the Annexes are subject to approval by the Environment Agency of England and Wales, Scottish Environment Protection Agency and Northern Ireland Environment Agency.**

**Version 3.5**

**April 2011**

## Contents

1. Definitions .....	4
2. REAL Quality policy statement.....	7
1.1 About REA .....	7
1.2 About UKAS.....	8
3. Introduction .....	8
4. Scope .....	9
5. National Validity .....	9
1.3 Aim.....	10
1.4 Scheme Overview.....	10
<a href="#">Flow Diagram for the BCS Scotland</a> .....	10
<a href="#">Flow Diagram for England, Wales &amp; Northern Ireland</a> .....	10
1.5 BCS Structure .....	10
1.6 REAL as owners .....	11
1.7 Certification Bodies .....	11
1.8 The Oversight Panel .....	12
1.9 The BCS Administrator .....	12
1.10 Consultancy Services .....	13
1.11 Development of the Biofertiliser Certification Scheme (BCS).....	13
1.12 BCS Charges.....	13
1.13 Appointed laboratories .....	14
6. Confidentiality.....	14
7. Application and Certification procedure .....	15
1.14 Enquiries .....	15
1.15 Application to become a Member of the BCS .....	15
1.16 Award of BCS membership number .....	16
1.17 The Agreement .....	16
1.18 BCS Logo Renewal .....	16
1.19 Re-validation .....	17
1.20 Spot Check .....	17
7.8 The Certificate.....	17
8. Use of the BCS Logo .....	18
1.21 Disciplinary Procedures .....	18
9. Appeals and Complaints .....	18
1.22 Appeals .....	18
1.23 Complaints.....	19

1.24	Complaints about the BCS .....	19
10.	Documents and the Control of Documents .....	20
11.	Requirements for Certification Bodies.....	20
1.25	The Certification Body Certification Committee .....	21
1.26	The Inspector .....	22
ANNEX A -	Additional Scheme Rules for Scotland (ASRS) .....	24
ANNEX B -	Laboratory Test Requirement Amendments .....	26
ANNEX C -	Sampling Guidance for Liquid Materials .....	27

## 1 Definitions

<b>Accreditation</b>	accreditation issued by UKAS confirming that a Certification Body meets its requirements to perform certification services in relation to the Standard.
<b>ADQP</b>	<p>the Quality Protocol (ADQP) the anaerobic digestate quality protocol (ADQP) sets out the end of waste criteria for the production and use of quality outputs from anaerobic digestion of source-segregated biodegradable waste. It was developed by WRAP and the Environment Agency in consultation with Defra, NIEA, industry and other regulatory stakeholders. It is applicable in England, Wales and Northern Ireland.</p> <p>In Scotland there is a differing legal definition of “end-of-waste” which is addressed in the Additional Scheme Rules for Scotland - see definition under ASRS</p>
<b>ASRS</b>	Additional Scheme Rules for Scotland. Together with the PAS110:2010, these constitute the specification for Scotland, where there is a differing legal definition of “end-of-waste”
<b>Appeals Panel</b>	the independent body of that name set up by the Certification Body to resolve a complaint pursuant to its UKAS accreditation .
<b>Applicant</b>	person applying for certification under the Scheme.
<b>BCS</b>	Biofertiliser Certification Scheme
<b>Certification Body</b>	body appointed by REAL to assess whether producers of biofertiliser comply with the Scheme.
<b>Certification Officer</b>	person employed by the Certification Body (CB) who is responsible for activities connected with the BCS. Some CBs will use use different titles for this position, for instance Scheme Manager
<b>Inspector</b>	person employed by the Certification Body to conduct site visits to facilities and who reports to the Certification Officer or equivalent
<b>Digestate</b>	digestate is the material remaining after the anaerobic digestion of a biodegradable feedstock

<b>Guidance</b>	Guidance for Applicants to assist them to partake in the Scheme
<b>Logo</b>	artwork licensed by REAL to Certification Bodies to issue for use by Scheme Members and their qualifying products.
<b>PAS 110:2010</b>	the specification for whole digestate, separated liquor and separated fibre derived from the anaerobic digestion of source-separated biodegradable waste as published by the British Standards Institute
<b>Quality Protocol (QP)</b>	<p>the Quality Protocol (ADQP or QP) sets out the end of waste criteria for the production and use of quality outputs from anaerobic digestion of source-segregated biodegradable waste. It was developed by WRAP and the Environment Agency in consultation with Defra, NIEA, industry and other regulatory stakeholders. It is applicable in England, Wales and Northern Ireland.</p> <p>In Scotland there is a differing legal definition of “end-of-waste” which is addressed in the Additional Scheme Rules for Scotland - see definition under ASRS</p>
<b>REA</b>	Renewable Energy Association
<b>REAL</b>	Renewable Energy Assurance Limited, a wholly-owned subsidiary company of the Renewable Energy Association, the voice of the renewable industry in the UK
<b>Regulator</b>	This is the body responsible for monitoring and enforcing environmental controls. In England and Wales the regulator is the Environment Agency (EA) website address <a href="http://www.environment-agency.gov.uk">www.environment-agency.gov.uk</a> . In Scotland the regulator is the Scottish Environment Protection Agency (EPA) website address <a href="http://www.sepa.org.uk">www.sepa.org.uk</a> . In Northern Ireland the regulator is the Northern Ireland Environment Agency (NIEA) website address <a href="http://www.ni-environment.gov.uk">www.ni-environment.gov.uk</a> .
<b>Scheme</b>	the Biofertiliser Certification Scheme
<b>Scheme Document</b>	the document that underpins the Scheme, comprising the Standard, the Quality Protocol in England and Wales and Northern Ireland, the ASRS in Scotland and the Scheme Rules
<b>Scheme Member</b>	an Applicant that has been certified by the Certification Body in accordance with the Scheme
<b>Scheme Rules</b>	the rules governing the Scheme, based on PAS 110:2010 and

	the Quality Protocol (in England, Wales & Northern Ireland) and In Scotland, the PAS110:2010 and Additional Scheme Rules for Scotland (ASRS)
<b>Standard</b>	PAS 110:2010 and the Quality Protocol (in England, Wales and Northern Ireland) In Scotland, the PAS110:2010 and Additional Scheme Rules for Scotland (ASRS)
<b>Oversight Panel</b>	an independent committee set up for the purpose of considering comments from BCS Members and in the development of the Standards and BCS
<b>Tests</b>	laboratory tests set out in the Standard
<b>UKAS</b>	United Kingdom Accreditation Service

## 2 REAL Quality policy statement

It is the policy of Renewable Energy Assurance Ltd (REAL) to operate a Biofertiliser Certification Scheme (BCS) for digested products of the highest integrity to meet statutory and public requirements through the implementation of the best possible practices, procedures and operating standards relating to the certification of the quality and use of digested products under the BCS Logo. REAL is a wholly owned subsidiary company of the Renewable Energy Association. Our definition of digested products, is the conformance to the qualifying Standard (PAS110:2010) together with:

- In England, Wales & Northern Ireland, the Quality Protocol for the production and use of quality outputs from anaerobic digestion of source segregated biodegradable waste (the ADQP)
- In Scotland, the Additional Scheme Rules for Scotland (the ASRS)

REAL is committed to

- Appointing only Certification Bodies which are UKAS accredited to EN45011:1998 or equivalent (this standard will be updated/amended over the years)
- Provide guidance to Members of the BCS
- Providing the necessary resources in terms of manpower, equipment and finance in the implementation of our quality programme, and in the promotion of the BCS Logo, when funds permit
- Keeping the BCS updated to take account of changing legislation and relevant scientific developments
- Ensuring that all those involved in the inspection and certification process are appropriately trained to fulfil their functions
- Ensuring that those involved in the certification process are aware of the REAL's commitment to quality and of their responsibilities in achieving this aim
- Ensuring that the Certification Bodies continually review the effectiveness of their operating systems with regard to the BCS, and take all necessary actions to ensure they are providing the service agreed

All those involved in the inspection and certification process are directly responsible for the quality of their own work. Public and commercial confidence in the BCS Logo will require the collective effort of all parties involved, and it is REAL's belief that maintaining quality at all levels is the key to success. The overriding consideration is the integrity of the certified digested products and their beneficial use, as certified under the BCS.

REAL has appointed a Scheme Administrator with overall responsibility for managing the BCS and the work of the certification bodies. The Administrator will ensure that any issues or concerns raised by members, certifying bodies, the public or commercial interests are resolved satisfactorily within a reasonable time.

### 2.1 About REA

The REA is controlled by a Board of Directors, which is responsible for its direction, overall management and administration. The REA is a trade association representing several sectors of the Renewable Energy Industry, including anaerobic digestion. Renewable

Energy Assurance Ltd (REAL), is a wholly-owned subsidiary company of the Renewable Energy Association.

## 2.2 About UKAS

The United Kingdom Accreditation Service (UKAS) is the sole national accreditation body recognised by government to assess, against internationally agreed standards, organisations that provide certification, testing, inspection and calibration services.

Accreditation by UKAS demonstrates the competence, impartiality and performance capability of these evaluators.

UKAS is a non-profit-distributing company, limited by guarantee, and operates under a Memorandum of Understanding with the Government through the Secretary of State for Innovation, Universities and Skills.

## 3 Introduction

This manual contains the operating procedures for REAL's BCS for the licensing and use of digested products under the BCS. Use of the BCS Logo is subject to the conditions set out in these BCS Rules.

Digested materials that are certified as meeting the requirements of the PAS110:2010 specification for whole digestate, separated liquor and separated fibre derived from the anaerobic digestion of source segregated biodegradable materials and the ADQP or in Scotland the ASRS, will no longer be considered as wastes, but will be regarded as products and safe for use. Certified digested products may be used without further regulatory control, other than those that are applicable for the use of any fertilising and soil conditioning materials.

REAL owns the BCS. It contracts selected Certification Bodies to provide certification assessment services to digested material producers as per the BCS Rules set out in this document and contractual requirements.

An important barrier to the development of the anaerobic digestion industry was the fact that food buyers and food quality assurance bodies were unsure of the safety of food grown using digested materials as a fertiliser. The cost of compliance with Regulations concerning the spreading of waste on land is also an inhibiting factor. Hence Defra, WRAP (Waste & Resources Action Programme), the Environment Agency, the NIEA, SEPA and Renewables East in consultation with the REA, its AD members and other interested stakeholders, have developed the PAS110:2010 and the ADQP.

The PAS 110:2010 together with the ADQP and in Scotland the ASRS, define the requirements to be met in order for digested materials to be considered as a product rather than a waste, and for which purposes and in what manner these digested materials are considered safe to be used without further Regulation (regarding wastes).

The benefits arising from certification of digested material and the award of the BCS Logo are that

- waste regulatory controls will not apply to digested source segregated biodegradable wastes and manure
- users of the digested product will have confidence that it complies with an approved Standard
- when the digested products are used in accordance with the ADQP or in Scotland the ASRS, the environment and the health of human, animal and plant will be protected

Every effort has been made to ensure that this document, and associated documents, are accurate at the time of publication. However, these documents may be subject to change, therefore reference should be made to the relevant section of the BCS website to check for any changes or amendments.

## 4 Scope

The producer of each digested product certified under the BCS shall demonstrate compliance with

- the requirements of British Standards Institution's Publicly Available Specification for whole digestate, separated liquor and separated fibre derived from the anaerobic digestion of source separated biodegradable materials (PAS110:2010:)<sup>1</sup>
- In England, Wales and Northern Ireland - the requirements of the ADQP<sup>2</sup>
- In Scotland the Additional Scheme Rules for Scotland (ASRS)

There are 3 types of digested materials that are eligible for certification namely

- whole digestate
- separated liquor
- separated fibre

N.B. The BCS does not require that all digested materials produced on one AD site must become certified within the BCS. However, if only some digested materials are certified, then there must be clear division of the storage and handling of the certified and non-certified materials on site. The producer is also required to ensure that all communications, documents records and marketing materials are clear as to which digested materials have achieved certification.

## 5 National Validity

The BCS is a single scheme with validity in England, Scotland, Wales and Northern Ireland. The PAS110:2010 and ADQP have been accepted by the regulatory bodies in England<sup>3</sup>, Wales<sup>4</sup> and Northern Ireland<sup>5</sup>. In Scotland, the PAS110:2010 plus the Additional Scheme Rules for Scotland (ASRS) has been accepted by the Scottish Environment Protection Agency (SEPA) which can be seen at Annex A.

---

<sup>1</sup> The copyright of PAS110:2010 is held by the British Standards Institution (BSI). Copies can be obtained from BSI WRAP or REA

<sup>2</sup> The copyright of the ADQP is held by the Environment Agency and WRAP. Copies can be obtained from the Environment Agency website at: <http://www.environment-agency.gov.uk/business/topics/waste/114395.aspx>

<sup>3</sup> Environment Agency for England & Wales

<sup>4</sup> Environment Agency for England & Wales

<sup>5</sup> Northern Ireland Environment Agency

## 5.1 Aim

The BCS is independent of commercial interest. Digested materials that carry the BCS Logo and are used in accordance to the ADQP or in Scotland the ASRS, are considered to be fertiliser products. Such digested materials may be spread without the need for an Environmental Permit in England and Wales or a Waste Management Licence or Exemption in Northern Ireland as they are not considered to be wastes. These certified materials have been produced in a manner that ensures that they are beneficial for the land and for crop production.

The BCS exists to assist in the certification and marketing of digested products by means of –

- Setting Standards for digested materials to enable producers, consumers and food assurance bodies to have confidence in the quality of the digested products
- Appointing independent Certification Bodies to provide an inspection system and certification system for producers of digested materials to assess their compliance with the Standards
- Providing a recognisable BCS Logo that can be promoted to assist in marketing digested products
- Awarding the BCS Logo to and permitting the use of the BCS Logo on, digested products that have been confirmed as compliant with the Standards, so that these digested products can easily be recognised by consumers in the market place
- Maintaining a published list of current BCS Logo Holders and identifying which digested products, produced by each BCS Logo Holder, are entitled to display the BCS Logo
- Providing a contractual framework to ensure continued compliance with the Standards and to protect the integrity of the BCS, with defined lines of action in cases of abuse
- Providing an avenue for BCS Members to feedback their comments into the process of improving the Standards

## 5.2 Scheme Overview

[Flow Diagram for the BCS Scotland](#)

[Flow Diagram for England, Wales & Northern Ireland](#)

## 5.3 BCS Structure

The BCS is owned by REAL, which appoints the Certification Bodies (CBs) who inspect the BCS Applicants and Members to assess compliance with the PAS100 and ADQP or ASRS requirements. The Certification Bodies arrange inspections, review inspection reports, request and assess corrective actions, award certification or re-inspect as appropriate.

When a digested product has been certified, REAL will grant the Member the right to use the BCS Logo on the digested product(s) that have been certified. The Member has the right to use the BCS Logo on any of their digested materials for which certification has been awarded. If the Producer markets other digested materials that are not certified, then they are not permitted to use the BCS Logo on those digested materials

REAL has established an Oversight Panel that considers and advises on all matters related to the operation of the BCS. The Administrator for the BCS administers all matters related to the BCS and is the primary contact point between involved parties.

#### 5.4 REAL as owners

- Appoints the Certification Bodies and maintains on-going liaison with them
- Administers the BCS
- Sets the fees to be charged to Applicants to the BCS
- Ensures that the BCS is non-discriminatory and that any producers of digested materials may apply for the BCS Logo, and that if their product meets the requirements of the PAS110:2010 and the ADQP or ASRS it may be awarded the BCS Logo
- Maintains an Oversight Panel that considers comments from BCS Members and is involved in the development of the Standards and BCS.
- Ensures that the qualifications, training and experience of the inspectorate, Certification Officers, and Oversight Panel are sufficient and will maintain relevant information concerning these people
- Ensures that any sensitive information gained during inspection and certification is kept confidential
- Ensures that any potential conflicts of interest amongst the personnel involved in inspection, certification or the oversight panel, are made clear, so that account can be taken of this when certification decisions are made
- Prepares the list of acceptable advisory consultants and laboratories
- Is responsible for the promotion and awareness of the BCS

#### 5.5 Certification Bodies

A Certification Body for the BCS must

- Be accredited by United Kingdom Accreditation Service (UKAS) to the European Standard EN45011 *General Requirements for Bodies Operating product Certification Schemes*
- Meet the other requirements of the BCS Rules

REAL will appoint the Certifying Bodies and publish the contact details of all appointed Certification Bodies on the BCS website [www.biofertiliser.org.uk](http://www.biofertiliser.org.uk)

When inspecting and certifying to the BCS, any Certification Body appointed shall confine its requirements, evaluation and decision on certification to those matters specifically related to the scope of the certification being considered and within the defined scope of the BCS.

## 5.6 The Oversight Panel

REAL will form an Oversight Panel that will consider all feedback received on the Standard PAS110:2010, the ADQP, ASRS, the operation of the BCS and the certification process. It shall also review an updated list of any complaints and appeals handled by each Certification Body. The Oversight Panel will also liaise with other European bodies that operate standards for digested materials and with appropriate competent authorities. The Oversight Panel may bring in outside expertise and form Technical Working Groups to deal with specific issues as required. CBs

The members of the Oversight Panel will be appointed by REAL and will include members from the following Stakeholder Groups when they are available:

- the Biogas Group of the REA
- Association for Organics Recycling (AFOR)
- Licenced BCS operators
- The Food Industry
- The National Farmers' Union
- The National Farmers' Union for Scotland
- The Country Land and Business Association
- The appointed CBs
- Farmers who utilise digested material
- Independent AD expert

The following will also be invited to nominate representatives as either full members or observers:

- The Environment Agency
- Scottish Environment Protection Agency (SEPA)
- Northern Ireland Environment Agency (NIEA)
- Defra
- WRAP

Other organisations can be invited to the Panel as the discretion of the REA.

## 5.7 The BCS Administrator

- Is responsible to the Chief Executive of REAL for the day-to-day operation of the BCS.
- Provides information about the BCS to potential Applicants
- Investigates if there are any complaints about a Certification Body.
- Requests proof that no commercial interest has influenced the certification process
- Takes all necessary measures to ensure that confidentiality is maintained, when there are issues of a confidential nature being discussed.
- Co-ordinates meetings and provide secretariat services to the Oversight Panel
- The BCS Administrator may consist of one or more persons.

## 5.8 Consultancy Services

The BCS allows producers of digested materials to use consultants, approved by REAL, to assist with a range of activities related with applying for and gaining certification.

REAL will develop an impartial register of approved AD consultants, who are willing to provide advice to BCS Members and Applicants about producing digested materials to the requirements of the BCS and about other associated matters. Any consultant that meets the relevant requirements may apply to be included on this register. However, an application does not guarantee that the consultant will become approved. Details of qualifications, skills and experience required will be available from the REAL.

Any arrangements made concerning consultancy are between the digested materials producer and the approved consultant.

A Certification Body or any of its sub-contractors, consortium partners or related organisations shall not provide consultancy services, as these might compromise, the Certification Body's impartiality in respect of the BCS. However the CB may provide guidance on how the PAS110:2010 and ADQP or ASRS apply in practice.

## 5.9 Development of the Biofertiliser Certification Scheme (BCS)

The PAS110:2010 and ADQP or ASRS define the requirements to be met for a digestate product to be awarded the BCS Logo. The development of the PAS110:2010 and ADQP or ASRS included consultation with the AD industry and other stakeholders and the feedback received during the consultation process informed the modifications made.

Any member, applicant, approved consultant, approved laboratory, Certification Body or Inspector may make a submission to the Oversight Panel via the Scheme Administrator concerning the PAS110:2010, ADQP, ASRS, Certification process or BCS Rules. All submissions received, will be considered by the Oversight Panel, and the results of that consideration will be communicated to the person who made the submission.

The Oversight Panel will inform relevant UK Authorities and stakeholders of any important issues that arise that could affect the PAS110:2010 ADQP or ASRS. The Oversight Panel will also take part in reviews of the PAS 110:2010 and the ADQP.

## 5.10 BCS Charges

REAL operates the BCS on a non-profit basis. In this regard the charges are set to cover the operation and development costs of the BCS and promotion of the BCS Logo. For that reason Members and Applicants indemnify REAL and its appointees/agents against liability or loss that may arise, in relation to any acts or omissions of a certification body relating to the certification of any process adopted by a Scheme Member or any acts or omissions of a Scheme Member in relation to the use of the logo, including in connection with the sale of materials that do not conform with the requirements of the Scheme.

All funds received by way of charges or other means relating to the BCS will be used to meet costs related to the BCS.

Charges may be made by REAL in relation to the following

- BCS application pack (including guidance manual, application form, fee schedule etc)

- A hard copy of the PAS110:2010, Quality Protocol and ASRS
- Application fee
- Annual fee
- Additional costs that may arise in connection with a BCS Logo holders licence, appeals or non-compliance
- Marketing material relating to the BCS Logo

REAL reserves the right to

- Receive grants, financial assistance etc from State agencies, semi-state bodies and other grant awarding organisations.
- Receive sponsorship for specified projects from private individuals or organisations. All such sources of income must be shown in the Annual accounts of REAL and must be free of direct commercial interest.
- Adjust the charges from time to time.

### 5.11 Appointed laboratories

The BCS requires Members/Applicants to send samples of digested materials, for which the BCS Logo has been applied, for analysis at approved laboratories. An appointed laboratory is one that is on the REA's list of appointed laboratories.

REAL will develop an impartial register of appointed AD laboratories, who are willing to provide sample analysis to BCS Members and Applicants. Any laboratory that meets the relevant requirements may apply to be included on this register. However application does not guarantee that the laboratory will be appointed. Details of the requirements are available from REAL, and will be developed by the Oversight Panel in conjunction with the Environment Agency.

Clarification on laboratory tests required under PAS110, the QP and ASRS are included at ANNEX B

## 6 Confidentiality

Details of the information gained during the course of assessment may be supplied to the members of the CB's Certification Committee, as relevant for them to be able to assess the application, complaint or appeal. If the Certification Body is required to supply any information that is not of a generic nature to interested parties (e.g. the Oversight Panel) the Certification Body shall ensure that the Applicant/Member's identity is not revealed. All persons who receive confidential information will be obliged to sign a confidentiality agreement.

Information related to approved digested products that will be marketed using the BCS Logo will be published by REAL on its website. This information will include:

- The type of digested material being assessed to carry the BCS Logo
- Its certification status
- The name of the Standard to which it conforms, the relevant BCS number and the expiry date of the BCS Logo
- location of where the digested product(s) are produced
- the name of the organisation responsible for producing it,

- the name and contact details of the person who is responsible for producing the digested product(s)

## 7 Application and Certification procedure

### 7.1 Enquiries

Information about the BCS requirements (the PAS110:2010, the ADQP and ASRS) and how to apply for certification to the Scheme are available from REAL's office or website.

### 7.2 Application to become a Member of the BCS

Application Forms and Fee Leaflets can be obtained from REAL's office or downloaded from the BCS website.

Operators of anaerobic digestion plants can apply for inspection and certification to the BCS by completing a simple application form and sending it together with a cheque for the appropriate fee, to one of the selected Certification Bodies listed on the REA website

A copy of the PAS110:2010, ADQP, ASRS and other documents may be downloaded free of charge from the BCS website on <http://www.biofertiliser.org.uk/>, together with a more detailed application form and proforma documents that may be helpful for developing a HACCP plan and Quality Management System for an AD site, if they are not already in place.

Once the full application documents have been returned to the Certification Body, they will be assessed by a Certification Officer, or equivalent<sup>6</sup>. If it appears that documentation, systems and process controls are suitable, a site inspection will be arranged. Otherwise further documentation will be requested and time given to allow the site to put in the systems and controls required for PAS110:2010 certification, before the inspection takes place.

This period between application and certification is known as the initial validation period. During the validation period an Inspector, appointed by the Certification Body, will visit the AD facility, at least once, to examine whether the facility is operated and the digested materials being considered for the BCS Logo, are produced in a manner that complies with the Standards. The Inspector may require additional documents to be available to enable them to inspect.

The inspection will depend on the size of the plant and site and if all relevant documentation and records are available. When the inspection is finished, the Inspector will explain any non-compliances found and will ask the Operator to commit to corrective actions. These may include carrying out further sampling and testing, improving quality systems or documentation.

The Inspector will complete an inspection report, which the Applicant will sign, if they are content that it is a valid report. The inspection report is then returned to the Certification Body, where it is assessed by a Certification Officer (CO), or equivalent, together with any information sent in before the inspection. Any information sent subsequently, as a result of the non-compliances noted by the Inspector, is also taken into consideration at this time.

If no non-compliances have been raised by the Inspector and the CO, or equivalent, when reviewing the report, and the test results from the laboratories are within the parameters specified in the PAS110:2010, the site is awarded certification and put on a rota for annual re-inspections.

---

<sup>6</sup> See definition of Certification Officer

If the non-compliances raised by the Inspector have not been satisfactorily resolved, or if further non-compliances are raised when assessing the inspection report, the CO or equivalent writes to the Operator, explaining what is wrong/lacking and requests corrective actions. When details of these have been received and judged satisfactory, the site is awarded certification and put on a rota for annual re-inspections.

Where the inspection report and/or subsequent review by the CO or equivalent raise serious non-compliances, the Operator is informed, asked to correct the non-compliances and may be required to undergo a further inspection, at the Operator's cost, when the site is judged ready.

Application to the Scheme does not guarantee certification. This can only be achieved by compliance with the requirements of the PAS 110:2010, and ADQP or ASRS with BCS Scheme Rules.

Once a site is certified, it will be re-inspected annually. Any non-compliances found will need to be resolved before certification for the following year is awarded. The site may also be subject to spot or unannounced inspections if there are concerns about procedures there.

Please note that the CO or equivalent is allowed to offer guidance about interpretation of the requirements of the PAS 110:2010, the AQDP and ASRS but is not allowed to offer advice.

Communication between the Applicant and the Certification Body will normally be via the Certification Officer.

The Applicant should be aware that it may not be advisable for them to make an application until they believe that their management system, AD and associated processes and digested materials are ready for inspection.

### 7.3 Award of BCS membership number

When an Applicant receives certification for any digested product they will be allocated a BCS membership number. The BCS membership number is specific to the AD site and the organisation that produces the digested product(s), rather than to the individual products. The Member retains the same BCS membership number so long as he/she has at least one digested product certified within the BCS.

### 7.4 The Agreement

Applicants will be asked to sign the BCS Standard Terms and Conditions agreement as early in the process as possible and always before the award of the certificate. This includes restrictions on the use of the logo

### 7.5 BCS Logo Renewal

Continued use of the BCS logo requires an annual re-inspection and certification and payment of an annual fee. The Certification Body will send to the Members, a reminder and all relevant documents, at least one month prior to the annual re-inspection date. The Member must complete the re-application documents and supply all the requested information prior to the inspection date.

An Inspector, appointed by the Certification Body, will visit the AD facility at least annually or more often if concerns about compliance with the PAS110:2010 and ADQP or ASRS have been raised, to examine whether the facility is operated and the digested materials, being considered for the BCS Logo, continue to be produced in a manner that complies with the Standards. The Certification Body will use the inspection report and any other relevant information to evaluate whether the digested products have been produced and utilised in accordance with the ADQP or ASRS and review the way in which the BCS Logo

is being used by the Member. Compliance review and certification will be carried out as per 7.2 above.

If a Certificate is refused for any digested material, that material is not eligible to use the BCS Logo. The BCS Logo must be removed immediately upon notification, from all documentation, product information or other notice relating to a digested material that is not certified. Notification will be made in writing and delivered by registered post.

## 7.6 Re-validation

As per the reasons specified in PAS110:2010 it may become necessary for some digested materials to be re-validated. Whether or not a digested product may continue to use the BCS Logo during re-validation will depend on the circumstances in each case, and will be at the discretion of the Certification Body and in accordance with the requirements of the relevant Regulatory bodies.

During the re-validation period an Inspector, appointed by the Certification Body, will visit the AD facility, at least once, to examine whether the facility is operated and the digested materials being considered for the BCS Logo, are produced in a manner that complies with the Standards. The Inspector may require additional documents to be available for clarification. The criteria specified in the general and post-validation sections of PAS110:2010 and the ADQP must be met.

The Inspector's report must be reviewed by the Certification Officer, who will make the decision whether the right to retain or remove the right to use the BCS Logo on the digested material(s) that required re-validation. The Operator has the right of appeal via the Certification Body's Impartial (Certification) Committee. At this stage, the BCS Oversight Panel will be informed that there is an issue, without the identity of the Operator being revealed.

## 7.7 Spot Check

During the course of a year, a minimum of 5% of Members and Applicants will be subject to an unannounced inspection (spot check), that will be in addition to the scheduled inspections. This may be unannounced but generally it is preferred to give 24 hours' notice, to ensure the Operator is present. Members will be chosen for spot checks, either by the Certification Committee or on a random basis by the Certification Officer.

## 8 7.8 The Certificate

The Certificate states

- The Member's individual or company name, and the AD facility premises that are licensed.
- The BCS Logo number of the Member
- The digested products that have been certified
- The expiry date of the Certificate. The Certificate is usually valid for 14 months from the date of its issue.
- The Certification Body's name, address and UKAS accreditation number
- Signature of authorised person within the CB. The award of the Certificate confers the right to use the BCS Logo on the digested products specified on the Certificate, which are produced by the Member at the premises identified on the Certificate.

## 9 Use of the BCS Logo

The BCS Logo may only be used in conjunction with the digested products as specified on the Certificate and in the Agreement and that continue to be produced in compliance with the Standards and are understood to be going to be used in accordance with the ADQP or ASRS, and only in association with the Member's name shown on the Certificate and in the Agreement. Where the BCS Logo is displayed on a digested product it must also be accompanied by at least the Member's BCS Logo number.

The BCS Logo may only be used in the form and size as stipulated by REAL, and, for example, must not be reduced to a size that makes it illegible.

Invoices, delivery dockets or other documents relating to certified digested products may state that the product is certified under the BCS and display the BCS Logo, if it also states the Member's BCS Logo number and name and the address of the AD facility where it was produced, along with the certification body's contact details. However, these documents must make it clear which products are certified and which are not.

### 9.1 Disciplinary Procedures

In situations where it is found that there are one or more critical non-compliances, with the requirements of the Rules of the BCS, PAS110:2010 and ADQP or ASRS, disciplinary procedures will be initiated. The type of disciplinary procedure will depend on the nature of the non-compliance. The definitions of the disciplinary procedures that could be applied in relation to each type of non-compliance, will be developed by the Oversight Panel, in conjunction with the Certification Bodies and in accordance with relevant Regulations. Information on these disciplinary procedures and the manner in which they would be applied, will be made available to BCS Members.

## 10 Appeals and Complaints

### 10.1 Appeals

All decisions of the Certification Officer or equivalent, will be communicated in writing to the appropriate Member/Applicant. That Member/Applicant can appeal any such decision if the following Appeals procedure or equivalent is followed<sup>7</sup>.

- The appeal must be lodged, in writing, to the Certification Body concerned within 14 days of the date of the notification of the specific decision of the Certification Officer, or equivalent. The Member/Applicant must furnish a detailed written explanation for the particular appeal and any substantiating information not previously supplied. The Certification Body, if there is precedent, can rule on the appeal, otherwise it will then be forwarded to their Certification Committee or equivalent within 5 days of receipt.
- The Certification Committee, or equivalent, of the Certification Body will consider the details of the appeal and advise the Certification Officer, or equivalent, of the outcome of their deliberations, within 14 days of receipt of the appeal. The Certification Officer or equivalent will notify the Member/Applicant of the decision of the Certification Committee within 5 days of being informed of that decision.

---

<sup>7</sup> Procedures within individual CBs may vary

- If the Member/Applicant is dissatisfied with the Certification Committee's, or equivalent, decision, they can appeal, in writing, to the Oversight Panel. This appeal will be decided within 20 working days of receipt and the Member/Applicant informed of that decision. When considering the appeal, the Oversight Panel must have a minimum quorum of five members and the Chair shall have the casting vote.
- If the Member/Applicant is dissatisfied with the decision of the Oversight Panel an independent arbitrator can be assigned that is mutually agreeable to the Chair of the Oversight Panel and the Member/Applicant. The decision of the Arbitrator is final.
- Before the Appeal is considered, the Operator must pay a charge to Renewable Energy Assurance of £875 plus VAT, which is refundable if the appeal is upheld.
- Sanctions imposed on a Member/Applicant shall remain in force during the entire period of any subsequent appeal.

## 10.2 Complaints

The responsibility for compliance with the Standards (PAS 110:2010) and the ADQP and the obligations of the Agreement rests absolutely with the Member.

If a BCS Member receives a complaint about a digestate product, the AD facility or concerning other digested materials that they produce, they shall investigate that complaint, and if necessary take appropriate action. The BCS Member shall record all complaints received and the action taken to investigate it and any remedial action taken. These records will be examined as part of the inspection process.

Any written complaint about a digestate product, the AD facility or about other digested materials they produce that is received by the Certification Body or the REAL will be dealt with by the Certification Officer within fifteen working days, and if appropriate the Certification Committee. If necessary an inspector will be sent out to investigate the complaint, and prepare a report for consideration by the Certification Committee, who will then take appropriate action. Any costs incurred related to a valid complaint may be charged to the Member concerned.

## 10.3 Complaints about the BCS

Written complaints concerning the BCS, shall be dealt with by the Scheme Administrator in conjunction, where appropriate, with the Oversight Panel. The following procedure will be completed

- The complaint will be acknowledged in writing
- The complaint will be investigated and a report prepared which will be considered by the Oversight Panel
- The Oversight Panel will decide on any appropriate action to be taken and the means by which it will be carried out
- The complainant will be informed of the decision and the action to be taken
- The action is completed

If the complainant is not satisfied the matter may be taken to an independent arbitrator.

## 11 Documents and the Control of Documents

The following documents will be issued and maintained by REAL

- BCS Scheme Rules
- Guidance notes or templates (as available) for Members and Applicants concerning the Standards (PAS110:2010) and the ADQP or ASRS
- Membership Listing of BCS Logo Holders
- ASRS

The current issues of all documents are held in the REAL's office and are the property of REAL. Amendments and/or updates to these documents may be made from time to time, and will be published on the BCS website, as soon as they are made. Amendments and/or updates made will also be issued with documents sent at re-application for the BCS Logo.

## 12 Requirements for Certification Bodies

The following are the minimum qualifications for a Certification Body for the BCS. The Certification Body

- For this Scheme, will only offer Certification within the defined scope of the BCS
- Will safeguard impartiality
- Must be accredited by UKAS to the European Standard EN45011 *General Requirements for Bodies Operating product Certification Schemes*.
- Shall ensure that all confidential information particular to an Applicant or Member of the BCS, shall not be disclosed. Where information that is not of a generic nature has to be disclosed to those involved in the certification process, the Certification Body shall ensure that the Applicant or Member has agreed to the intended disclosure of the specific information. Wherever possible and practical anonymity will be maintained.
- Will appoint a Certification Officer or equivalent, who will be the point of contact in the Certification Body for all communication with Members, Applicants, Inspectors, Certification Committee, or equivalents and the Scheme Administrator in REAL.
- Will ensure the Certification Committee or equivalent has sufficient technical expertise to advise and make certification decisions on the BCS.
- Will appoint Inspectors to undertake the inspections and make reports. The Inspectors shall be sufficiently qualified to undertake the inspections, and must meet the requirements for Inspectors agreed between the REAL and the Certifying Body. The Inspector must not be currently engaged in the production of digested materials or have a commercial involvement in the AD or waste industry. All Inspectors must make a declaration in relation to any 'conflicts of interest' and undertake to notify the Certification Body if any such interests arise.
- Will contribute through the Oversight Panel to the development of the PAS110:2010, ADQP, ASRS and BCS Rules
- Will operate an internal auditing system
- May sub-contract any part of the certification process, except the Certification decision. However, prior specific agreement must be obtained from REAL

- Will ensure that all documentation produced that relates to the BCS, includes reference to the REAL as the BCS owners and that they have given authority for operation of the BCS to the Certification Body.
- Will provide information to applicants about certification to the BCS within 5 days of receiving an enquiry and will provide timely information to Operators when re-inspection is due.
- Ensure that all their staff involved in the operation of the BCS have adequate relevant training and/or experience. And that such staff conduct themselves professionally at all times, be objective, and have good communication skills. Staff must maintain the integrity of themselves, the Certification Body, the BCS, the PAS110:2010, the ADQP and ASRS at all times.
- Is responsible for supplying updated documents relating to the BCS to all relevant Members, Applicants, Certification Officers, Inspectors, Certification Committee or equivalents and anyone else working on behalf of the Certification Body
- Shall maintain a record of complaints received and ensure that appropriate follow-up and corrective actions are done.
- Shall provide a summary report of all non-complaint feedback received about the BCS, so that it may be considered at each meeting of the Oversight Panel.
- Shall ensure that each person who enquires about joining the BCS is informed where all the relevant documents can be obtained and will maintain a list of all enquiries that will be provided on a monthly basis to REAL.

### 12.1 The Certification Body Certification Committee

Due to the range of skills and knowledge required and the number of sectors in the supply chain of feedstock production to food consumption, issues and appeals regarding Certification of digested materials will be resolved by a Certification Committee or equivalent rather than by one individual. The Certification Committee or equivalent may be an established body which considers BCS amongst other schemes. The Certification Committee or equivalent should comply with the following:

- Members must sign a confidentiality agreement
- Operate in accordance with the Certification Committee, or equivalent, rules that will be developed by the Certification Body and approved by UKAS
- Ensure that inspection and certification to the BCS is consistent, impartial, audited, fair and continues to meet the requirements of EN 45011
- Receive suitable training, prior to making decisions regarding certification and on-going as necessary
- Makes decisions concerning certification, suspension, penalties or withdrawal. These decisions shall be based on the inspection report and the verification of any required corrective action having been taken, the use of the BCS Logo, the adherence to the requirements of the PAS110:2010, ADQP and ASRS requirements and on any other relevant information
- Maintain an overview of the appointment, training and performance review of the Certification Officer, the Inspectors and trainers or equivalents.
- Consist of a minimum of three and no more than twelve people, appointed by the Certification Body and approved by the BCS Oversight Panel. The individuals, or representative of a particular stakeholder group, should be selected for their

personal attributes and technical skills in their particular field. The Certification Committee may include persons who have an input to the BCS or AD and associated processes or the AD supply chain. The Certification Committee must include someone with experience in one or more of the following categories

- food quality assurance
  - farming production
  - agricultural advisor
  - waste management
  - AD operations
- Be able to have technical advisers available to it as necessary

Certification Committee, or equivalent, members must agree to the obligation of attending the necessary meetings as laid down within the framework of the Certification Committee rules.

## 12.2 The Inspector

All inspection work must be carried out by an approved inspector who is contracted by the Certification body to undertake the work of inspection. The inspector will

- Visit an Applicant/Members AD premises at least once per year
- Undertake spot checks as required
- Not be currently engaged in commercial activities related to the production of digested materials, or waste management or to the sale of AD technology
- Have at least the following qualifications
  - Training or one years experience in the AD Industry
  - Some relevant agricultural experience
  - Knowledge of HACCP and quality management systems
- Receive training regarding inspection within EN45011 requirements and other training as necessary to the requirements of the BCS and in inspection skills
- Inspect the applicants compliance or otherwise with the Standards, the ADQP and the BCS Rules
- Write an Inspection Report on the inspections and provide this report to the Certification Officer, or equivalent, within 5 days of the inspection
- Maintain as confidential all relevant information given to them during an inspection
- Not provide advice to the Applicant/Member during an inspection
- Take pictures or samples if required
- Allow their details to be published in an approved list of inspectors



David Collins  
Head of Biofertiliser Certification Scheme  
Renewable Energy Assurance Ltd

## **ANNEX A - Additional Scheme Rules for Scotland (ASRS)**

### **1 Introduction**

Producers of digestate in Scotland must conform to the following requirements in order to meet both the demands of the Scottish Environment Protection Agency (SEPA) regulatory position and the conditions of the Biofertiliser Certification Scheme:

- the standards contained in BSI PAS110:2010
- the conditions in the SEPA regulatory position<sup>8</sup> listed below
- the additional conditions contained in the Quality Protocol document<sup>9</sup> listed below

### **2 Conditions for the spreading of AD digestates on land under the SEPA regulatory position:**

- 2.1 AD plants and processes that produce the digestates from waste must have and operate in compliance with the relevant environmental authorisation.
- 2.2 The AD process and any digestates produced must be certified to conform to the standards contained in BSI PAS110:2010 without having to be blended with any other materials including other digestates, composts, materials, products or additives.
- 2.3 The PAS 110:2010 certification process must be carried out by a third party accredited by the United Kingdom Accreditations Service to carry out this certification.
- 2.4 Only waste that conforms with the following criteria can be used to produce the digestates – it is derived from animal or plant origin; and it has been collected separately from other wastes and not combined with any other waste; and it is capable of being decomposed by microorganisms or other soil-born organisms or enzymes; and steps must have been taken to ensure no potentially polluting or toxic materials or products are used, including invasive plant species such as Giant Hogweed, Japanese Knotweed and Himalayan Balsam or toxic species such as Ragwort and Yew.

---

<sup>8</sup> SEPA Regulatory Position Statement: the Use of PAS 110 certified Digestate from Anaerobic Digestion - National Waste Policy, 23 February 2010

<sup>9</sup> Quality Protocol for Anaerobic Digestate – Note: this document has no legal status in Scotland and is to be treated purely as a reference

- 2.5 No waste from the leather industry (i.e. those listed in the European Waste Catalogue under chapter 04.01) or sludge from sewage treatment processes can be included as input material to the AD process producing the digestates.
- 2.6 The digestates must be used without requiring any further processing or recovery operations. They must not be used in quantities or reapplied on the same land at frequencies that will result in any risk of adverse impact on the environment or human health. Otherwise, this is likely to be regarded as a disposal operation (i.e. a landfill).
- 2.7 All non-waste regulatory controls must be complied with for the use of the digestates and they must be used in accordance with good practice. For use in agriculture, such requirements include:
- Prevention of Environmental Pollution From Agricultural Activity Code of good practice (PEPFAA code)
  - Four Point Plan
  - Nitrate Vulnerable Zones regulations (NVZ regulations).

### **3 Additional conditions contained in the Quality Protocol document<sup>10</sup>**

The following conditions contained in the AD Quality Protocol sections of the Quality Protocol must also be complied with:

- Appendix A - Definitions
- Appendix B - Biowaste types acceptable for the production of quality digestate - With exception of the plant species described in section 2.4 and those wastes described in sections 2.5
- Appendix G - Supply documentation
- Appendix F - Records to be kept for certification purposes

---

<sup>10</sup> Quality Protocol for Anaerobic Digestate – Note: this document has no legal status in Scotland and is to be treated purely as a reference

## ANNEX B - Laboratory Test Requirement Amendments

1. The test parameter required in Tables 1,2,3 & 5 in PAS110:2010 is:

*SOP Z/004. The determination of ammonium in organic wastes (liquid or solid), Standard Operating Procedure Z/004, Edition 05, 31.01.2006, Eurofins Laboratories Ltd, Wolverhampton.*

**Amendment** - This can be replaced with the following equivalent test. Standard Operating Procedure SOP JAS - 083. The determination of ammonium in organic wastes (liquid or solid), NRM Ltd, Coopers Bridge, Braziers Lane, Bracknell, Berkshire RG42 6NS

2. The Quality Protocol Appendix H section 9 states:

*The quality digestate producer must supply the land manager with analytical results that indicate the plant nutrient content of the material supplied. The analysis should include pH, total and available (NH<sub>4</sub>)nitrogen, total phosphorus, potassium and sulphur.*

**Amendment** - In the case of sulphur only, it is not now necessary to provide analytical results. This is replaced by a requirement that soil sulphur supply be estimated according to the recommendations of RB209 (8th Edition 2010), rather than testing for total-S. For auditing purposes, the CBs will include a checkbox to ensure that soil sulphur supply has been considered. This change has been logged with the Quality Protocols team at WRAP, and the text will be reviewed with the rest of the QP in due course.

## **ANNEX C - Sampling Guidance for Liquid Materials**

Adapted for PAS 110:2010 from  
Chapter I - Methodsbook BGK  
Sample taking and sample preparation

### **A 2.1 Preface**

The British Standards Institution's Publicly available specification for whole digestate, separated liquor and separated fibre derived from the anaerobic digestion of source-segregated biodegradable materials (PAS 110:2010) requires producers to take and send representative samples of digested materials to suitable laboratories for testing.

Please refer to clause 10 of PAS 110:2010 for digested material sampling requirements and brief guidance. This document provides more detailed guidance on the sampling of whole digestates and separated liquors, in a liquid, pumpable state. Separate guidance on sampling the separated fibre fraction derived from whole digestates can be obtained from the certification scheme owner or certification body.

A sufficient number of individual samples should be taken and combined to derive a final sample for testing that is representative of the sampled portion of production. The digested material should be thoroughly mixed before any individual samples are taken. This is especially important when the portion of production to be sampled includes liquids and solids of different densities with a tendency to separate into stratified layers.

### **A 2.2 Terms and definitions**

Please refer to PAS 110:2010 for definitions of terms used in this document.

### **A 2.3 Equipment**

Equipment and containers used for sample taking and storage should be made from materials that do not influence sample characteristics.

- Sample scoop, if necessary with telescope rod, for individual samples taken from storage or transport containers.
- Sealed plunging siphon to take individual samples from different depths of storage or transport containers.
- Pump to extract individual samples.
- Plastic measuring jug for checking individual sample volume (maximum 1 litre of sample).
- Containers (small to medium size) for storing individual samples.
- Container (large tub or open topped drum with capacity of at least 20 litres) and other equipment for mixing combined individual samples.
- Robust, sealable container for storage and transport of the final sample for testing, with a capacity of at least 10 litres.

### **A 2.4 Stage at which to take samples**

Please refer to PAS 110:2010 clause 10.2 for requirements about the stage at which samples of digested material should be taken from identifiable portions of production. In summary, the sampling stage corresponds with when the digested material is ready for use.

Individual samples must be taken and combined to derive a final sample for testing that is representative of the sampled portion of production. If a portion of production cannot easily

be distinguished from other portions of production, the producer may take traceable samples at defined production time intervals. This may be the case in a continuous flow anaerobic digestion process.

Under ‘fill and draw’ operational conditions, the timing of the operational cycle may be critical and need to be considered when taking samples.

In order to assess the efficacy of the pasteurisation step, samples may be taken in addition to those required by PAS 110:2010. Any such samples must be taken immediately after the material has completed the pasteurisation step e.g. when being discharged from the pasteurizing unit or the digester. Results from testing any such samples cannot be part of evidence of PAS 110:2010 conformance or non-conformance, because their characteristics are unlikely to be the same as after completion of the anaerobic digestion process and any applicable, minimum maturation and/or storage period.

### **A 2.5 Size and number of individual samples**

The number of individual samples depends on the volume of the portion of production to be sampled. When taking them from storage tanks, the volume of the samples as a proportion of the volume of the sampled portion must be considered.

In order to achieve a representative, final sample for testing, the following number of individual samples should be taken. Each individual sample should be taken from a thoroughly mixed, pumpable, liquid portion of production. Each individual sample should comprise at least 1 litre, and in the case of a sampled portion less than 1,000 m<sup>3</sup>, at least 2 litres.

**Table 1. Number of individual samples according to volume of the sampled portion of production**

Volume of sampled portion	Number of individual samples
< 1,000 m <sup>3</sup>	10
1,000 – 3,000 m <sup>3</sup>	20
3,000 – 5,000 m <sup>3</sup>	30
> 5,000 m <sup>3</sup>	40

#### **A 2.6.1 Taking individual samples from closed storage tanks**

Before individual samples are taken from the storage tank, thoroughly mix the portion of production to be sampled. After mixing, no ‘float’ and ‘sink’ layers should exist in the tank.

In some cases the complete mixing of float layers can be omitted if they persist when the digested material is discharged for use. In such cases, the producer should ensure that the material below the float layer is thoroughly mixed before any individual sample is taken and that samples do not contain components of the float layer.

#### **A 2.6.2 Taking individual samples from open topped storage tanks without sampling nozzles**

Health and Safety Regulations have to be considered when taking individual samples from open topped tanks. The required number of individual samples should be taken from the tank at different places and possibly at different time periods and collected in a suitable container (e.g. plastic bucket).

When taking individual samples, use sample scoops with a telescope rod, sealed plunging siphons or pumps, as appropriate.

### **A 2.6.3 Taking individual samples from open topped storage tanks with sampling nozzles**

Before taking an individual sample from a sealing valve / sampling nozzle in the storage tank, remove the digested material in the supply pipe between the tank and valve (dead area). Drain out at least double the dead area's volume before taking an individual sample.

Take individual samples by opening and closing the valve at regular time intervals. Catch each individual sample in a container suitable for checking the sample volume, e.g a plastic measuring jug. Each one can then be poured into a larger container, e.g. a plastic bucket.

### **A 2.6.4 Taking individual samples from pipes to / from an external circulation pump**

Some digested material storage tanks are used in conjunction with an external pump that circulates the material via pipes running to and from the storage tank and pump. If any of the pipes have a sealing valve / sampling nozzle, individual samples may be taken via the valve.

Use the pump and any other necessary equipment to thoroughly mix the portion of production immediately prior to taking any individual sample. No float or sink layers should exist when samples are being taken.

Before taking any individual sample from a sealing valve / sampling nozzle in the pipe, remove at least double the volume of the digested material in the pipe between the tank and valve. The period of time required to flush the pipe will depend on the pipe's length and diameter, the available 'head' (i.e. the pressure exerted by the bulk of sludge stored above the sample line) and, if a pump is fitted, the pump rate.

Take individual samples by opening and closing the valve at regular time intervals. Catch each individual sample in a container suitable for checking the sample volume, e.g a plastic measuring jug. Each one can then be poured into a larger container, e.g. a plastic bucket.

### **A 2.6.5 Taking individual samples when discharging or dispatching digested materials for use**

Individual samples can be taken when digested material is ready to use, such as when being discharged from the storage tank or after it has been discharged into the transport container(s).

Prior to discharge, ensure that the digested material is thoroughly mixed. Catch each individual sample in a container suitable for checking the sample volume, e.g. a plastic measuring jug. Each one can then be poured into a larger container, e.g. a plastic bucket.

If taking individual samples from the transport container(s), thoroughly mix the digested material in the container and take individual samples immediately afterwards.

## **A 2.7 Deriving a final sample for testing**

Combine the individual samples in a suitable container (e.g. a large, plastic open topped tub or drum). The combined sample should comprise at least 20 litres and be thoroughly mixed. From this, take sufficient partial quantities that together make up one final sample of at least 10 litres.

If 'sink' and 'float' layers seem to be developing when taking the partial quantities, repeat the thorough mixing step and take the necessary further partial quantities as quickly as practicable.

## **A 2.8 Final sample container**

Place the final sample in a clean, dry, gas and liquid tight container. The sample is likely to form gasses and consequently the closed container should be able to resist the pressure exerted by the gasses.

### **A 2.9 Final sample labelling**

Final sample labelling requirements are specified in section of 9.1.5 of PAS 110:2010.

### **A 2.10 Final sample storage**

Final samples should be stored in the dark, preferably at temperatures between 2 and 8 degrees centigrade. This will minimise time-related changes in the characteristics of the sample.

### **A 2.11 Final sample transport**

The guidance in this sub-section comprises excerpts from SCA MSS Part 2 (see section A 2.13 of this document for the reference).

Final samples should be transported to the laboratory in for example, insulated cool boxes, small refrigerators or refrigerated vans. These transport containers should be used exclusively for this purpose and be kept clean and dry, particularly the inside surfaces. They should also be regularly disinfected. Van storage racks or boxes should be treated similarly.

### **A 2.12 Time between obtaining the final sample and testing it**

Final samples should be tested as soon as practicable, preferably on the day of collection from the anaerobic digestion facility. In exceptional circumstances, for example if there is a delay, final samples should be stored in the dark at temperatures between 2 and 8 degrees centigrade until being prepared for testing. It may be useful to note details of the storage time and temperature as well as the time that sample preparation for testing commences.

To date, there seems to be no published data on the effects of storage time and temperatures between obtaining and testing final samples of digested materials, in terms of their microbial populations.

### **A 2.13 References**

- PAS 110:2010. Publicly Available Specification for whole digestate, separated liquor and separated fibre derived from the anaerobic digestion of source-segregated biodegradable materials, the British Standards Institution, London.
- Bioabfallverordnung
- Klärschlammverordnung, DIN 38414
- Probenahme und Analyseverordnung-Düngemittel
- LAGA-Richtlinien PN 2/78, PN 2/78K, PN 98
- Müllhandbuch Kennziffer 1859
- VDLUFA-Methodenbuch
- Güte- und Prüfbestimmungen (RAL-GZ 245) BGK
- SCA MSS Part 2. Standing Committee of Analysts, April 2003. The Microbiology of Sewage Sludge (2003) – Part 2 – Practices and procedures for sampling and sample preparation. Methods for the Examination of Waters and Associated Materials, Environment Agency.

[http://www.environment-agency.gov.uk/commondata/acrobat/mss2003\\_\\_part\\_2\\_604558.pdf](http://www.environment-agency.gov.uk/commondata/acrobat/mss2003__part_2_604558.pdf)