

## Proposal to Undertake Stack Emission Testing at Biotage GB Ltd, Hengoed

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Quote Ref: **Q26062**

## **1. Introduction**

Biotage GB Ltd operates a facility in Hengoed, Caerphilly and is authorised in accordance with Natural Resources Wales Permit Reference EPR/DP3832EF

This proposal for stack emission testing has been prepared following discussions with Mr Paul Davies, of Biotage GB Ltd., Hengoed, Caerphilly.

## 2. Scope of Work

Each monitoring team will comprise of at least two people, one consultant will be a MCERTS Level 2 Team Leader with MCERTS technical endorsements TE1, TE2, TE3 and TE4.

All testing will be undertaken in accordance with requirements of the following:-

- EA Technical Guidance Document M1
- EA Technical Guidance Document M2
- EA Performance Standards
- EA Method Implementation Documents (MIDS)
- Environmental Evaluation Limited's UKAS Schedule Scope of Accreditation
- Environmental Evaluation Limited's Method Statement
- STA Risk Assessment Guide
- Client's Environmental Permit Requirements

The scope of work for this project, including accredited methods to be used, is detailed in Table 1 below:

**Table 1 Stack Emissions Testing Scope of Work**

Emission Point Reference	Parameter	Test Duration	Monitoring Method
A1 Main Building EP1	Hydrogen Chloride	3 hours	BS EN 1911:2010 (c)
	Methanol	1 hour	BS EN 13649:2002 (c)
A1 Main Building EP2	Hydrogen Chloride	1 hour	BS EN 1911:2010 (c)
	Methanol	1 hour	BS EN 13649:2002 (c)
A1 Main Building EP3	Oxides of Nitrogen	1 hour	BS EN 14792:2005 (b)
	Methanol	1 hour	BS EN 13649:2002 (c)
A4 Resin Shed EP4	Hydrogen Bromide	4 hours	USEPA Method 26 and 26a (c)

Moisture will be tested as required to BS EN 14790:2005 or by methods prescribed in the relevant standard or MID.

Airflows, temperature and pressure will be measured to BS EN 13284-1:2002.

NOTE: UKAS/MCERTS status:-

(a) Accredited for sampling.

(b) Accredited for sampling and analysis.

(c) Accredited for sampling, accredited analysis conducted by subcontract laboratory.

To ensure compliance with our UKAS and MCERTS accreditation the work will be undertaken in accordance with the technical requirements detailed in 'Appendix 2 - Sampling Requirements for Stack Emission Testing'.

### 3. Proposed Schedule and Timescale

**2 days have been allocated for the sampling to be undertaken.** Further time has been allowed for data analysis and reporting.

**It is envisaged that a report will be issued within fifteen working days of completion of site work.**

As part of Environmental Evaluation Ltd's Environmental Management System ISO14001 we now issue all reports electronically in pdf format. We do not issue paper copies of report as standard; however, if you should require a paper copy please advise your EE contact.

### 4. Fees

Our fees for undertaking the above testing programme inclusive of preparation, travel, site time, analysis and reporting will be:

**£2550.00 (Two Thousand Five Hundred and Fifty Pounds) + VAT**

Our price is fully inclusive of all our costs, and is based on all the testing being completed during a single visit to site lasting the stated number of consecutive, normal working days detailed in Section 3.

#### Delays on Site

Additional visits to site, or time spent on site, for reasons beyond our control, would be charged at a rate of £120+VAT per hour per two-man site team. If the location of the site necessitates an overnight stay to facilitate the work a further subsistence delay charge of £200 per team per day would be applied.

#### Postponement/Cancellation Policy

Any postponement/cancellation of confirmed work by the client with less than 5 working days notice may be applied up to the following limits:

<5 days	25% of Quoted Fees
<3 days	35% of Quoted Fees
<2 days	50% of Quoted Fees
<1 day	75% of Quoted Fees

If the site work is cancelled by the client when the site team are already on site then Environmental Evaluation Limited reserve the right to invoice the full cost of the project.

Please use our reference number **Q26062** when making an enquiry or placing your order. Thank you.

## Appendix 1. Terms and Conditions

All prices are quoted exclusive of VAT

Payment would be due within 30 days of invoice date.

This proposal is valid for a period of 60 days.

Provisionally agreed dates for this project will only be honoured and remain unaffected for a period of, at the most, two working days after the date when the provisional booking is made without a written purchase order.

**Postponement/Cancellation Policy** - Any postponement/cancellation of confirmed work by the client with less than 5 working days notice may be applied up to the following limits:

<5 days	25% of Quoted Fees
<3 days	35% of Quoted Fees
<2 days	50% of Quoted Fees
<1 day	75% of Quoted Fees

If the site work is cancelled by the client when the site team are already on site then Environmental Evaluation Limited reserve the right to invoice the full cost of the project.

If, in the opinion of Environmental Evaluation, it is not possible to undertake the work safely, the work will not proceed and charges may be incurred as if the work had been cancelled on arrival.

In the event of any disruption beyond the control of Environmental Evaluation any additional time required to complete the work will be charged pro rata.

Where this proposal has been based on information received (such as area of building, accessibility, occupancy etc.) and that information is subsequently found to be inaccurate, Environmental Evaluation reserves the right to vary the charge levied.

Environmental Evaluation require that you provide staff, on your site, with any instruction, equipment or any other item required under Health and Safety legislation, as if Environmental Evaluation's staff was your own employees.

The client may be liable to the costs of any damage to Environmental Evaluation's equipment caused by faulty process or deliberate damage by personnel working for or on behalf of the client.

The Contracts (Right of Third Parties) Act 1999 shall not apply to this agreement.

## Appendix 2 Sampling Requirements for Stack Emission Testing

To ensure that Stack Emission Testing is carried out as accurately and safely as possible, Environmental Evaluation has certain criteria and expectations that must be adhered to in order for a successful testing campaign to be conducted. In particular, emission testing requires appropriate measurement ports and working platforms, to ensure safe, accurate working in compliance with the monitoring standards and our accreditations.

### A 2.1 Sampling Ports

Sampling must be carried out at a suitable location on the stack. Bends, branches, obstructions, fans and leaks can all cause undesirable variations in the velocity profiles, which may make the location unsuitable for sampling. Suitable flow conditions usually exist in sections of ductwork with constant shape and cross-sectional area, at least 5 x hydraulic diameters upstream and 2 x hydraulic diameters downstream of a disturbance (or 5 hydraulic diameters from the top of the stack). See Figure 1 below.

The hydraulic diameter is defined as:

$$\frac{4 \times \text{area of sampling plane}}{\text{length of sample plane perimeter}}$$

In order to sample in accordance with the monitoring standards, two sampling points will be required on each sampling plane. If these are not already in place on the stack then they need to be installed by the Client prior to the monitoring visit. Sampling ports should be 4" BSP sockets where particulate monitoring is required. See figure 1 below

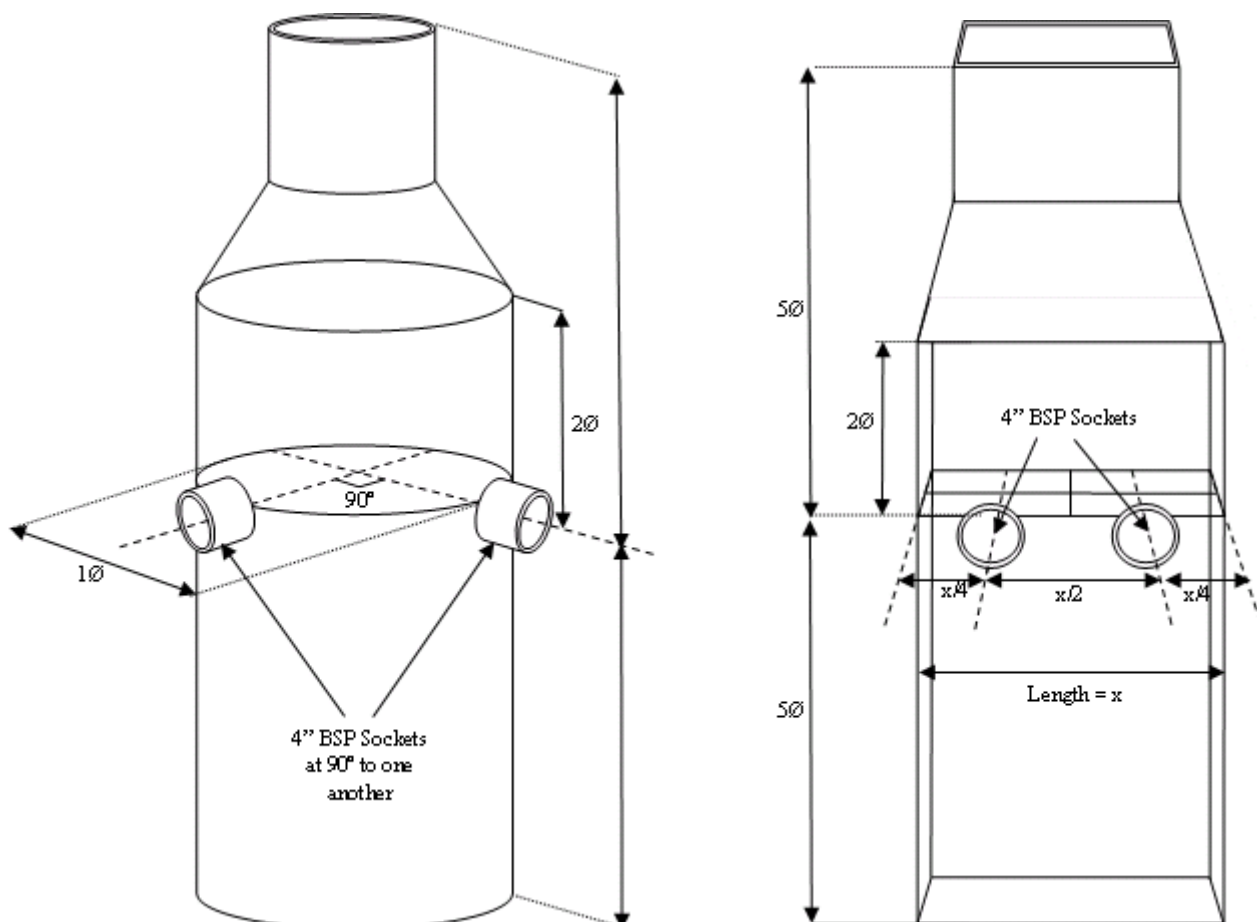
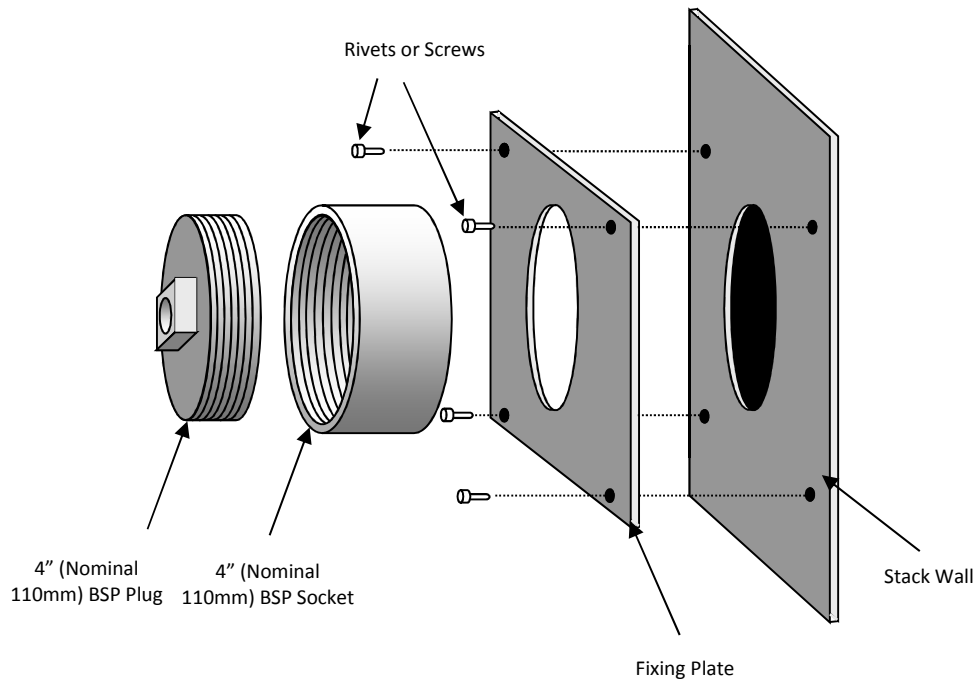
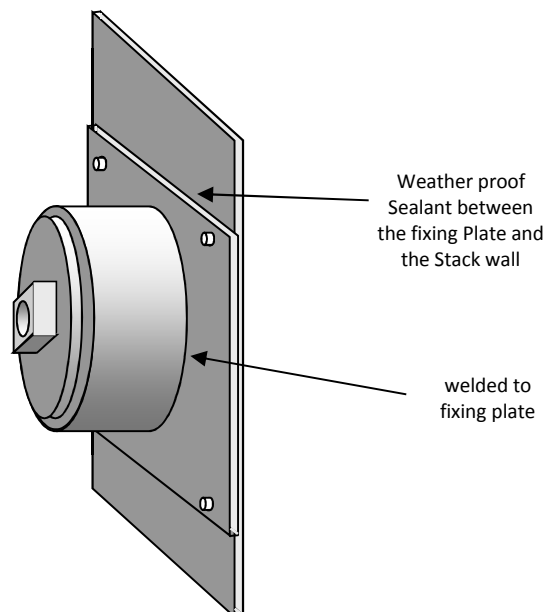


Figure 1 - Port Positions on Circular and Rectangular Ducts Stacks

## A2.2 Recommended Method of Attachment of BSP Socket



### "Exploded" BSP Socket Components

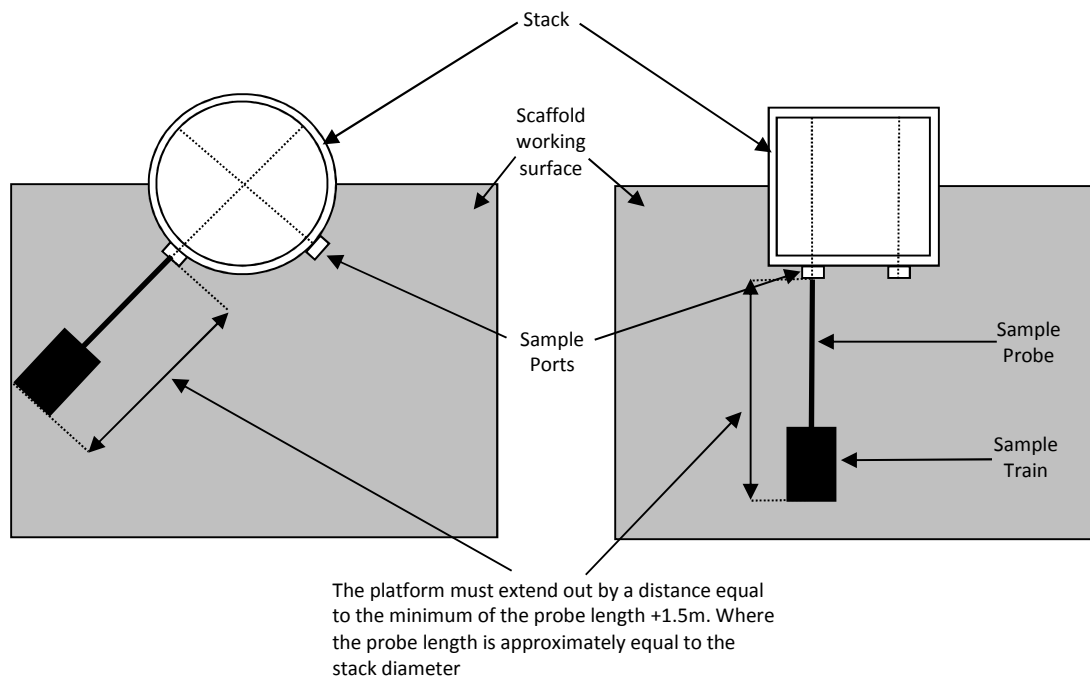


### Attached BSP Socket

BSP Sockets should be of a similar material to the stack to ensure that it is resistant to the pollutants being emitted. BSP sockets and ports can be obtained from Pipe Supply Stores.

### A2.3 Health and Safety for Stack Emissions Testing

Safe access will be required to each sample point. This should be by a suitable platform with a platform inspection record verifying it's safety or by scaffolding with a Scafftag verifying it's safety. Temporary scaffold platforms should be constructed to a specific minimum Scafftag® category of "heavy duty" or meet the requirements stated in the monitoring standard. Permanent platforms must be provided with handrails and kick-boards that meet the requirements of the Workplace (Health, Safety and Welfare) Regulations 1992, (regulation 13) for permanent platforms and the Health and Safety in Construction Regulations (HS(G)150) for temporary platforms.



Platforms must have a sufficient working area to manipulate the sampling probe and operate the measuring instruments without equipment overhanging the guard rails. Protection from adverse weather may be desirable for an exposed sampling position; however it should be recognised that any protective cladding installed at high levels will affect wind loading on the stack and will be vulnerable to damage during high winds. At elevated positions it may be preferable to ensure sampling is only carried out during relatively calm weather.

**Sampling from a MEWP (Mobile Elevated Work Platform) is unacceptable for the vast majority of Stack Testing. Sampling from a MEWP is only considered acceptable if the majority of equipment is to be kept at ground level and Environmental Evaluation Staff only work from the MEWP for short periods of time i.e. less than half an hour. A MEWP may be used if it is decided that it is the best way to minimise the risk involved and a scaffold would be inappropriate or impractical; however, this cannot be to reduce costs. If a MEWP is provided when it shouldn't have been, MCERTS will not be able to be claimed for the tests on the MEWP accessed stack.**

Sampling from roofs or the tops of arrested equipment, vessels and ducts is unacceptable unless they have been assessed by the client as being suitable by meeting the requirements for platforms described in The Work at Height Regulations (WAHR) 2005, Regulations 8 and Schedule 3. <http://www.legislation.gov.uk/uksi/2005/735/contents/made>

**N.B. Due to the risks involved it is unacceptable to sample from ladders.**

#### Power Supply

Due to the nature of the sampling equipment used, a designated & available electricity power supply will be required within 50 metres of each sampling point. The sampling equipment requires a single phase 110V supply. Environmental Evaluation Ltd will supply a 240V step down transformer if a 110V supply is not available.