

From: [Padgett, Andrew](#)
To: [Raymond, Sarah](#)
Cc: [Environment Reg](#); [Singer, Helen](#)
Subject: RE: Application reference: EPR/XP3337QR/V003 Southport WwTW Duly Making Response - Further clarification
Date: 14 November 2022 15:47:44
Attachments: [image010.gif](#)
[image011.gif](#)
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[image014.gif](#)
[image015.png](#)
[image016.png](#)
[image003.png](#)
[Southport IED FPR_XP3337QR_V003 Clarification UU response V2.pdf](#)

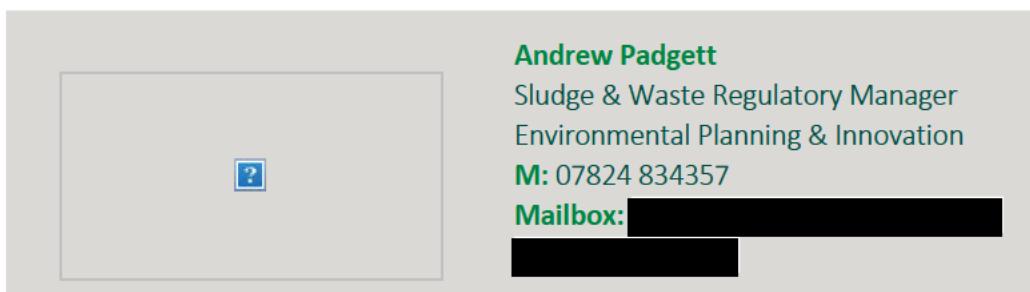
Good Afternoon Sarah,

Please find attached our technical report in response to your request for further clarification on 07/11/2022. It outlines the operation of Southport secondary digesters and the associated waste gases to be abated in line with BREF guidance and BAT conclusions.

We would be happy to discuss this in more detail to clarify any questions you may have.

Kind regards,

Andrew



From: Raymond, Sarah [mailto:[redacted]]
Sent: 07 November 2022 09:32
To: Padgett, Andrew [redacted]
Cc: Environment Reg [redacted]
Subject: Application reference: EPR/XP3337QR/V003 Southport WwTW Duly Making Response - Further clarification

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Hello Andrew,

Following on from our conversation of the 07/11/2022, we require further clarification before we can make our decision on whether we can duly make your application. As

such please can you response to the queries below by 14/11/2022.

In relation to the approach you have adopted for the containment of emissions from Emission points A10 – A21 (Secondary Digester Tanks Air Vents) we do not currently have sufficient information to enable us to duly make your application.

While you have advised that biogas generation from sludge in the secondary digesters is low and insufficient to warrant a connection to the biogas system you have provided no evidence to demonstrate low or insufficient levels of biogas, you have not provided evidence to demonstrate the odour control unit proposed would effectively treat the gas stream, and you have not provided evidence to demonstrate how the system would be maintained under adequate pressure to prevent the release of emissions from the identified vents.

We currently review your approach as an “alternative technique” and under guidance [Best available techniques: environmental permits - GOV.UK \(www.gov.uk\)](https://www.gov.uk/guidance/best-available-techniques-environmental-permits) you must demonstrate that “your alternative technique will provide a level of environmental protection that’s equivalent to the BAT”, and “explain how it will do so”.

BAT 14 requires that in order to prevent or, where that is not practicable, to reduce diffuse emissions to air, in particular of dust, organic compounds and odour, BAT is to use an appropriate combination of techniques identified as:

- storing, treating and handling waste and material that may generate diffuse emissions in enclosed buildings and/or enclosed equipment (e.g. conveyor belts);
- maintaining the enclosed equipment or buildings under an adequate pressure;
- collecting and directing the emissions to an appropriate abatement system (see Section 6.6.1 of guidance [JRC113018_WT_Bref \(5\).pdf](#)) via an air extraction system and/or air suction systems close to the emission sources.

We would also refer you to BAT 23 Energy Efficiency, which requires that you must ensure that energy is used efficiently. Section 2.3.9 of guidance [Best Available Techniques \(BAT\) Reference Document for Waste Treatment Industrial Emissions Directive 2010/75/EU Integrated Pollution Prevention and Control \(europa.eu\)](#) sets out applicable techniques that should be considered, and we would expect in determination further information to demonstrate how the approach you have applied meets the relevant techniques.

Section 2.3.5.5 (Flaring) of guidance [JRC113018_WT_Bref \(5\).pdf](#) requires that “uncontrolled emissions (especially VOCs) from vents and relief valves should be routed to recovery systems”

As such to enable us to duly make your application provide the following information:

- 1) A full written explanation of how the alternative technique will provide the same level of environmental protection as “storing, treating and handling waste and material that may generate diffuse emissions in enclosed buildings and/or enclosed equipment”.
- 2) A written explanation of how this system will be maintained under adequate pressure to ensure that gas is not emitted from the vents.
- 3) A written explanation and supporting evidence of how the proposed OCU will effectively treat the gas.
- 4) A written explanation of how this proposal is considered to be energy efficient in

line with the techniques set out in BAT.

- 5) Alternatively, provide written proposals to contain and direct emissions to your gas management system.

Kind regards

Sarah Raymond

Senior Permitting Officer – Installations

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From: Padgett, Andrew [REDACTED]
Sent: 31 October 2022 16:57
To: Raymond, Sarah [REDACTED]
Cc: Singer, Helen [REDACTED]
Subject: RE: Application reference: EPR/XP3337QR/V003 Southport WwTW Duly Making Response - Further clarification

Hi Sarah,

Further to your points below I can provide the following responses;

1. Auxiliary Boilers

We don't believe that Boiler 2 satisfies the exemption requirements 'less than 500 operating hours per year exemption'. If there is a requirement for an air quality risk assessment for MCP below 1MW then could the H1 assessment be utilised? (as per our previous discussion)

2. Emission points A10 – A21 Secondary Digester Tanks Air Vents

We acknowledge that there could be some residual potential for biogas generation from sludge in the secondary digesters. However, we maintain that the potential is low and insufficient to warrant a connection to the biogas system and also this might not be acceptable creating a process safety risk. The process is designed to maximise biogas production in the primary digesters by maintaining optimum conditions for methanogenesis over a sufficient retention period (minimum 12 days). The secondary digesters are designed to stabilise the sludge and inhibit further methanogenesis (aerobic conditions, tanks not heated or agitated) such that methane production is

intended to cease in the secondary digesters. Creating anaerobic conditions in the secondary digesters would change the process intent from sludge stabilisation. Connecting the tanks to an odour control unit with biological scrubbing followed by carbon adsorption will remove odour and VOCs from the treated gas, including any low levels of methane present. Exact removal details cannot be confirmed ahead of full design.

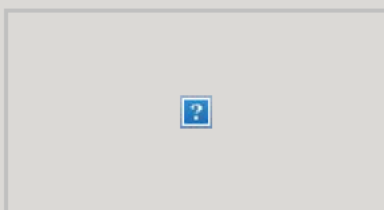
In order to confirm that levels of biogas (methane) in the tank headspace are low, a programme of monitoring will be instigated. We propose to undertake monitoring to the appropriate standard for ammonia (EN SIO 21877), hydrogen sulphide (CEN TA 13649 for sampling NIOSH 6013 for analysis), methane (EN 2513) and volatile organic compounds (CEN TS 13649) to characterise and quantify emissions from the digested sludge. Currently we have assumed that this monitoring will be undertaken either as grab samples or using hand held instruments in line with the MCERTS Performance Standard for Handheld Emission Monitoring Systems (Version 4, September 2018).

The monitoring will be carried out on 2 occasions in order to consider seasonality (i.e. winter and summer and conditions). Each monitoring event will be carried out over a 28 day period in order to understand the variability of emissions as the process within the digested sludge tanks progresses. This is based on the expectation that emissions will deteriorate from day 1 to day 28, representing the expected retention time within the digested sludge tanks. The monitoring results will be used to inform the detailed design. Our aim is to complete monitoring by the summer of 2023 and the detailed design would be completed following the monitoring which we aim to complete by Oct 2023. The proposed timescale for implementation of the solution is October 2024. As indicated in our previous submission, in developing dates for delivery our approach has been to model the timeline for completion and use our P50 estimate (50% likelihood of completion) as the target date (which is our standard delivery model) and also to look at a P25 best case scenario. The dates we are providing are based on our P25 estimate assuming we need to deliver a new control system to treat emissions rather than utilising existing units.

I trust the above clarifies the points raised if you require any further explanation please let Helen or I know.

Kind regards,

Andrew



Andrew Padgett

Sludge & Waste Regulatory Manager
Environmental Planning & Innovation

M: 07824 834357



From: Raymond, Sarah [<mailto:> [REDACTED]]
Sent: 19 October 2022 15:56
To: Padgett, Andrew <[REDACTED]>
Subject: Application reference: EPR/XP3337QR/V003 Southport WwTW Duly Making Response - Further clarification

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Hello Andrew,

Following on from our conversation of the 19 October, I have some points I need further clarification on before we can make our decision on whether we can duly make your application. As such please can you respond to the queries below by the 31st October 2022.

1) Auxiliary Boilers

You have advised within your response that only boiler 2 is in operation, and that it is an existing MCP below the MCP threshold limit of 1MW. We can confirm that boilers with a less than 1MWth must be included in any air quality risk assessment and limits may be applied if there is a potential impact under guidance [Environmental permitting: air dispersion modelling reports - GOV.UK \(www.gov.uk\)](https://www.gov.uk/guidance/environmental-permitting-air-dispersion-modelling-reports), However it is our understanding that Boiler 2 (identified as an auxiliary boiler) may meet the requirements for 'less than 500 operating hours per year exemption' in line with guidance ([Medium combustion plant \(MCP\): comply with emission limit values - GOV.UK \(www.gov.uk\)](https://www.gov.uk/guidance/medium-combustion-plant-mcp-comply-with-emission-limit-values)). Please confirm if boiler 2 will meet the requirements of the 'less than 500 operating hours per year exemption'.

2) Emission points A10 – A21 Secondary Digester Tanks Air Vents

In your response you have advised the digesters will be connected to a BAT compliant Odour Control Unit(s) (OCUs), with OCU extractor fan(s) drawing air through the system from the tanks, and that the existing roof mounted vents will remain to allow "clean air" to be drawn into the tank to prevent negative pressures and allow the atmosphere to be exchanged. On reviewing this proposal we require further information as it is our understanding that the secondary digesters are biologically active, holding displaced primary digester sludge for a minimum of 12 days.

BREF guidance for the waste treatment sector BAT conclusion 14 states that you must ensure that diffuse emissions are contained. This includes techniques such as storing, treating and handling waste and material that may generate diffuse emissions in enclosed buildings and/or equipment, and collecting and directing the emissions to an appropriate abatement system. If digestate is still biologically active, and you are producing combustible biogas as indicated by the storage time of your secondary digesters, you must take steps to collect the biogas. Biogas should not be vented to the environment through open vents. If the source does not produce an explosive environment (i.e. less biologically active) you will need to propose plans to enclose, collect and direct the waste gas emissions to an

appropriate abatement system.

On assessment of your response to the request for further information dated 30/09/2022 we are unclear on how your solution will collect and direct biogas produced within the secondary digesters to an appropriate gas management system, or how you will ensure that diffuse emissions will not be emitted from the existing vents. We can see no evidence to demonstrate that your proposals are suitable for the tank. You must clearly demonstrate how you will meet the requirements set out in BAT which are to contain diffuse emissions. As such we require further clarification on your proposed solutions for controlling emissions from the secondary digester tanks air vents to be able to duly make your application.

Should you need any further clarification on the above, then please do not hesitate to contact me.

Kind regards

Sarah Raymond

Permitting Officer – Installations

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