Olfasense Measurement plan and Method Statement

1A Project details

Scope of work		Odour sampling at Afan WwTW to inform an odour impact assessment of the site.					
Project No.	DCWW22E	Project Manager	Oliver Carter	Client	Dwr Cymru Welsh Water (DCWW)	Site name	Afan WwTW
Site address	Afan WwTW Unnamed Road Port Talbot SA13 1RB			Client contact	Mike Lloyns	Site contact (if different to client contact)	Leon Jones & TATA emergency number
Proposed sampling date(s)	May 22 (provisionally 23/05 till 26/05)			Client contact tel	07825 508 415	Site contact (if different to client contact) tel	07920 849 778 & 01639 872222
Date form completed	16/05/2022	Form completed by	Ewan Cox	Sample team - lead ST	Ewan Cox	Sample team - 2nd ST	Dan Honour
Hours which site is accessible between	Unknown. Attend from 0900 D1 and obtain acess times.	Form authorised by	Oliver Carter	Lead ST contact tel	07870 544345	2nd ST contact tel	TBC

1B Site H&S information

Pre-site review form	Date sent	N/A - information obtained from a site inspection.	Sent to	N/A	Sent by	N/A
	Received from client?		Notes	Required information obtained from site inspection.		
Photos/plans of sampling locations	Received from client?		Notes			
Platform inspection reports for each elevated work platform	Received from client?	None provided.	Notes	ST's to check all access equipment for defects (e.g. missing bolts, excessive rust) prior to use. Equipment is not to be used if defects are observed during onsite check. STs to contact office where required.		
Type of inspection report received (commissioning, periodic inspection, before use check/inspection)		None provided. Access equipment/platforms to be inspected by STs prior to use. Work not to proceed if concerns are raised by STs.				

2A Summary of monitoring scope

Scope
Olfasense have been commissioned to undertake an odour study of Afan WwTW. In order to inform this assessment and define site specific odour emission estimates for key odour sources at the site the below odour survey is to be completed.

Scope of monitoring					
Ref	Stage of treatment	Sampling location	Sampling method	Analysis (in addition to Odour, H2S)	Comments (does source require dust filters)
1	Preliminary treatment	Inlet channels pre-screens	Lindvall hood		
2		Screening skips	Lindvall hood	HT & character	
3		Detritor	Lindvall hood		Onsite assessment & RA required.
4	SBR	SBR basin - Fill/aerate stage	Lindvall hood	HT & character	Sample set collected over course of the day
5		SBR basin - Decant stage	Lindvall hood		Sample set collected over course of the day
6	Sludge treatment	SAS holding tank	Lindvall hood		
7		Sludge screen skip	Lindvall hood		
8		Sludge centrifuge room	Ambient	Smoke testing	Test with internal doors closed.
9		Imported cake bin	Lindvall hood	Smoke testing	Onsite discussion & RA required.
10		Secondary digester	Inverted hood		Access unknown. Ops assistance required.
11		Post-THP belt press building	Ambient	Smoke testing	
12		Digested sludge cake - Fresh	Lindvall hood		
13		Digested sludge cake - Aged	Lindvall hood	HT & character	
14		Siloxane filter - During regeneration	Point	HT & character	EX Zone. Onsite discussion & RA needed.
15	Odour control units	OCU 1 - Inlet	Point		
16		OCU 1 - Mid stage	Point		
17		OCU 1 - Outlet	Point	HT & character	Telescopic pole sampling.
18		OCU 2 - Inlet	Point		
19		OCU 2 - Outlet	Point	HT & character	Understood to be non operational.

2B Summary of monitoring methods - Lindvall hood sampling

The sampling methods are summarised below and should be reviewed in conjunction with the individual source pages in Section 4.

Sampling from liquid or solid surfaces
e.g. Barriers & ASPs

Equipment used	
Lindvall Hood (aluminium metal hood)	Portable petrol generator, drip tray and spill kit
Nalophan sheeting	Sample pump
Sample barrel	Nalophan ventilation tubing
Nalophan sample bags and PTFE sample lines	110V clean air blower

Services used
110V power supply for clean air blower (supplied from portable petrol generator)
12V battery for sampling pump

Procedure
The Pre-sampling RA and the specific source location information will be appraised and updated as necessary based on an onsite review at the sample location.
Sampling equipment is set up at sampling location.
An aluminium Lindvall hood of approximately 1 x 1m area is lowered onto the surface of the material to be sampled (using ropes where necessary and remaining behind any barriers/railings etc).
Ventilation air is blown through the Lindvall hood via a length of nalophane tubing which is connected at one end to a clean air blower (powered by petrol generator) and at the other end to the 'inlet' of the Lindvall hood as shown below.
3 air samples are collected by means of pneumatic extraction using a sample barrel and Nalophan sample bag. To achieve this the sample bag is inserted into the barrel, connected to the line connection (the line is connected to the 'outlet' of the sample hood) and the barrel lid fastened. The air from the barrel is extracted by a 12v powered sampling pump which extracts air from within the barrel via a pump line.
After completion of sampling, the Lindvall hood is removed from the surface of the material being sampled, the sample line and Nalophan are removed, and the hood is washed down with clean water where available, or brushed off where water is not available.

Figure 1 Picture of a Lindvall hood on a liquid surface

Figure 2 Picture of a Lindvall hood on a solid surface

Sampling from liquid or solid surfaces where Lindvall hood cannot be used (inverted hood technique)
Where a Lindvall hood cannot be used to sample (for example where access restricts insertion of hood into a tank) a bucket will be lowered on a rope into the tank in question from a safe location (behind any railings) and material to be tested will be extracted. This material (approx. 20 litres is required) will then be poured into inverted Lindvall hood and a lid/cover placed on the hood.
The above procedure will then be adopted to collect the odour samples, and once complete the material will be returned to the tank and the hood cleaned with washings also returning to the tank.

2B Summary of monitoring methods - ambient, duct or headspace sources

The sampling methods are summarised below and should be reviewed in conjunction with the individual source pages in Section 4.

Sampling from ambient, duct or headspace sources
e.g. buildings, OCUs and storage tanks.

Equipment used	
Sample barrel	Sample line
Nalophan sample bags	Sample pump

Services used
12V battery for sampling pump

Procedure
The Pre-sampling RA and the specific source location information will be appraised and updated as necessary based on an onsite review at the sample location.
Sampling equipment is set up at sampling location.
The sampling port or hatch lid or similar is identified.
A sample line is inserted into the port or opened hatch lid and the line inserted before closing. Using pneumatic extraction (utilising a sampling vessel and sampling pump) the samples are collected (see picture below).
Once sampling is completed the equipment is removed, and any ports or lids closed.

Figure 1 Point source odour sampling

Figure 2 headspace sampling

3A Pre-site Risk Assessment (to be assessed prior to attending site)

Are the controls in place are considered adequate to reduce the risk of the identified hazards to a minimum?		Yes	
Signature of Site Safety Co-ordinator/Safety Manager		Approval date	16/05/2022
		Approved by	Oliver Carter

Stage 1: List significant potential hazards	Stage 2: List people who are at risk from significant hazards	Stage 3: List controls or where information may be found relating to existing controls (e.g. other risk assessments)	Is the risk adequately controlled?	Describe additional actions or controls required
Driving	Sampling team	Drivers are consulted on the length of the drive before agreeing to the work. Drives are shared when necessary and expenses are provided for subsistence. Time is planned to allow rest breaks. These are considered on a case-by-case basis.	Yes	None
Site traffic	Olfasense staff	High visibility jackets.	Yes	None
		Particular caution when sampling in areas where vehicles routinely operate, ensure drivers are aware of your presence (e.g. sludge tanker loading/unloading points, cake pads).		
		Site specific training as identified by the site operator.		
		Hazard awareness training provided by the Source Testing Association (STA) (refer to the "Yellow Booklet" current version, located in H&S file and van sampling folder).		
Mechanical plant and process	Sampling team/consultants on site	Site specific training as identified by the site operator.	Yes	None
		Keep clear of all rotating/moving plant, note machinery/plant can start automatically without warning. Do not interfere with site plant.		
		Hazard awareness training provided by the Source Testing Association (STA) (refer to the "Yellow Booklet" current version, located in H&S file and van sampling folder).		
Electric shock	Consultant/sampling technician on site	Staff will not interfere with site electrics, nor use without prior consent. This includes sockets both 110v and 230v, any electronic equipment fixed or portable and any control panels. Staff shall report any obvious defects of site equipment.	Yes	None
		If the tool / equipment has a power cable, this will be checked for obvious defects prior to starting work. The power cable will be placed safely away from the work area.		
		Equipment will be checked for obvious defects prior to use.		
		The operator manual will be consulted prior to using electrical equipment. Equipment will be used in accordance with manufacturers instructions.		
		Electrical equipment will be regularly PAT tested.		
		All electrical cables/extension cables will be fully uncoiled and placed safely away from the work area.		
		110v supplies should be used at all time on site.		
Sampling operations near deep/negatively buoyant water	Sampling team/ consultants on site	Olfasense staff will not pass railings at the edge of tanks.	Yes	Refer to specific method of work for the detritor sampling as detailed on the respective source tab (Source 3). Onsite discussion and RA required.
		Provision of flotation aids when working near tanks or water courses (if railings are not considered to provide adequate barrier).		
		Hazard awareness training provided by the Source Testing Association (STA) (refer to the "Yellow Booklet" current version, located in H&S file and van sampling folder).		

Biological hazards (handling of biologically active material)	Sampling team/ consultants on site	All staff are provided with inoculations for Hepatitis, tetanus.	Yes	None
		Gloves are worn when collecting odour samples from biologically active materials.		
		Face masks are provided for use when sampling from turbulent locations causing splashing.		
		Face masks are provided for use when sampling form open sewage channels (and other biological hazards) in windy conditions.		
		Hand wipes and disinfectant sprays are provided within the site van.		
		Staff are trained in the hazards associated with handling of sewage (refer to COSHH sheet).		
		To minimise the risk of infection from pathogens (e.g. Leptospirosis, Hepatitis) through injection or open wounds the following measures should be followed: Clothes, gloves and safety glasses and suitable footwear should be worn when sampling from sewage sources. In addition to gloves open wounds shall be covered with plasters. Hands should be washed immediately after completion of sampling activities, using an appropriate disinfectant. No eating or drinking should be undertaken prior to this.		
Contact with hypodermic needles (eg. In rag skips and waste handling sites)	Sampling team/consultants on site	Specialist needle-proof gloves are worn when collecting odour samples from locations that may contain sharps and / or needles.	Yes	None
Positive pressure within stack	Sampling team/ consultants on site/anyone with access to the sampling area	Pre-site review form checks with client for any hazardous substances which may be present within stack. Where not otherwise stated, no hazardous substances have been identified (in sufficient concentrations) with potential to cause harm at this location.	Yes	None
		Sample port only to be opened where required to limit exposure. When sample port is opened and in use, the port will be blocked (around the inserted instrument) to effectively reduce the emission of sample gas from this point. Sampling team/consultants are issued with Toxipro personal safety monitors.		
High temperature gas streams (burns)	Sampling team/consultants on site/site staff	Sample team to take care when opening ports, especially for positive pressure airstreams. Do not stand Infront of sample ports, stand to the side.	Yes	
		Safety glasses and long sheeve clothing to be worn at all times.		
		Provision of heat proof welding gauntlets for use where required.		
		Following insertion of sampling equipment and for the duration of sample extraction the port shall be blocked with appropriate packing material (such as a ceramic based fibre blanket).		
High levels of H2S	Sampling team/consultants on site	Personal H2S monitors are provided for use when sampling at sites which may experience high levels of H2S (eg. sewage).	Yes	None
Chemical hazards (e.g. ozone, stack gas constituents, variation in emissions, nearby site chemical storage)	Sampling team/consultants on site	Chemical hazards (other than H2S) are likely from time to time within some or all of the airstreams being monitored. Such as: DMS, mercaptans and other thiols.	Yes	None
		H2S will be used as a marker compound to identify potentially hazardous airstreams & samples. Multigas personal monitors will be worn. Long term H2S limit: 5 ppm Short term H2S limit: 10 ppm		
		Chemicals could be present in the sewage water and in the sludge (liquid and solid), guidance set out within the sewage COSHH should be followed at all times.		
		Other chemicals, solvents, greases, fuels and/or influent dosing chemicals are likely to be present. Staff should not interfere with, or go near dosing equipment or chemical stores, any spillages should be reported to site ops immediately.		
		Hazard awareness training provided by the Source Testing Association (STA) (refer to the "Yellow Booklet" current version, located in H&S file and van sampling folder). Chemical could be present in the sewage water and in the sludge (liquid and solid)		

Potentially explosive atmospheres	Sampling team/consultants on site	Personnal multigas/LEL monitors to be worn at all times.	Yes	The siloxane filter (source 14) is likely to be located with an EX zone. Full details of site EX zoning to be obtain during induction/onsite discussions prior to starting work. Onsite RA's to be conducted for all sources within or in the vicinity of EX zones.
		Only intrinsically safe electrical equipment to be used in zoned areas.		
		Toughbook, phones, sampling pumps, key fob etc must not be taken into EX zoned areas.		
		Ensure when sampling nearby assets that non-ATEX equipment does not inadvertently enter zoned area.		
		No lone working within or in the vicinity of zoned areas.		
Use of petrol generator for sampling operations	Sampling team/ consultants on site	Generator to be inspected for damage prior to use.	Yes	None
		Generator to be operated within a drip tray (part of spill kit present in each work van) at all times.		
		In the event of petrol or oil spill use the spill kit provided. Stop the leak if safe to do so. Prevent entry into water courses, confined spaces etc.		
		In the event of fire use foam, dry chemical or carbon dioxide fire extinguisher, if safe to do so. Dry chemical extinguishers are present in each work van.		
		Refer to petrol COSHH assessment (located in H&S file and van sampling folder).		
		Petrol to be stored within generator tank or complaint container.		
Climatic conditions, hot/cold sampling conditions	Sampling team/ consultants on site	Provision of sufficient all weather clothing/PPE (including thermals, water proofs; gloves, jackets etc), and any other items to enable safe/comfortable conditions for working in extreme conditions (e.g. sunscreen).	Yes	None
Wind	Sampling team/consultants on site/site staff	Refer to risk assessment SRA2 ‘Working at Heights’.	Yes	None
		Wind speed is to be monitored using a hand held anemometer or estimated using the Beaufort scale. Do not go up to the working platform if the ground wind speed exceeds 30 mph.		
		If the wind speed at the working platform exceeds 30 mph during sampling, stop work and come down if it is safe to do so.		
		When using equipment at the working platform it should be stored in its case when not in use. Equipment should be placed inside the stack sack when not in use. The stack sack should be anchored to the lifting strop.		
Sampling at Heights	Sampling team/ consultants on site	Hazard awareness training provided by the Source Testing Association (STA) (refer to the "Yellow Booklet" current version, located in H&S file and van sampling folder).	Yes	None
		Refer to risk assessment SRA2 ‘Working at Heights’. Refer to SRA3 ‘Use of Mobile Elevated Work Platforms’. Barrier tape will be used to cordon off the area around the base of the platform where possible.		
		Emergency plan - in the event of emergency requiring medical attention or evacuation from an elevated platform, the site team will contact (one of) the nominated first aider on the site operations team and emergency services if necessary. If emergency services must be contacted, the client is required to provide guidance and access for the emergency services to get to the area required.		
Lifting and Hoisting	Sampling team	Refer to risk assessment SRA6 - Lifting and hoisting onsite.	Yes	None
Manual Handling	Sampling team/ consultants on site	Awareness training provided to all employees in the form of the manual handling guidance issued by the HSE (refer to document ‘Getting to grips with manual handling – A short Guide).	Yes	None
Slips and falls	Sampling team/ consultants on site	Hazard awareness training provided by the Source Testing Association (STA) (refer to the "Yellow Booklet" current version, located in H&S file and van sampling folder).	Yes	None
		Provision of safety harnesses when working at heights (Refer to risk assessment SRA2)		
Head injuries	Sampling team/ consultants on site	Provision of hardhats.	Yes	None
		Hazard awareness training provided by the Source Testing Association (STA) (refer to the "Yellow Booklet" current version, located in H&S file and van sampling folder).		

Foot injuries	Sampling team/ consultants on site	Provision of protective footwear.	Yes	None
		Hazard awareness training provided by the Source Testing Association (STA) (refer to the "Yellow Booklet" current version, located in H&S file and van sampling folder).		
Lone working	Consultant/sampling technician on site	Staff will not enter areas where uncontrolled hazards are identified to be present.	Yes	Lone working onsite is likely to be limited to the project manager undertaking in independent walk around the site. Lone working procedures will be followed.
		Staff will ensure that the site operator is aware of their work and that they will be working alone. All signing in/out procedures should be followed.		
		Staff will retain a method of contacting the site operator/Olfasense office and/or emergency services (eg. Mobile phone).		
		Upon arrival to site, the staff member will contact (email/call) to the Olfasense office to inform that they will be starting work. An office based member of staff will be nominated to regularly (approx. every 60 mins) check on the location of the sampling staff member through shared live location on WhatsApp phone app.		
		Upon finishing work, the staff member will contact the Olfasense office to confirm that they have finished and left site.		
Welfare facilities	Sampling team/consultants on site/site staff	Provision of welfare facilities (i.e. breakroom/toilets/handwashing facilities, drinking water).	Yes	None
Exposure to and transmission of Coronavirus (COVID-19)	Sampling team/site personnel/members of the public	Site team are to consider and follow current guidance included in SRA12: Coronavirus Covid-19 & Site Work, Olfasense's Coronavirus policy and government advice. Site team are to follow any site-specific guidance and procedures.	Yes	See current SRA12, Olfasense Coronavirus policy, and government guidance.
Nearest A&E hospital	Neath Port Talbot Hospital (minor injury unit)	Baglan Way Port Talbot SA12 7BX 01639 862160	4 miles.	
	Cimla Hospital	Cimla Neath SA11 3SU 01639 862000	9.5 miles.	
Specific H&S requirements not in standard OSUK PPE	Standard Olfasense PPE (Hisvis long sleeves & trousers, glasses, gloves and safetly boots), additional specific PPE includes: **Harnesses and lanyards, Multigas monitors including LEL.**			

The details required in the section below should be entered into the applicable daily electronic sample sheet. Where no applicable sample sheet is being used (i.e. site inspection no sampling) the below sections must be completed by hand and scanned to the project H&S folder upon return to the office.

3B On Site risk assessment (to be assessed on-site prior to commencing work)

Stage 1: List significant potential hazards	Stage 2: List people who are at risk from significant hazards	Stage 3: List controls or where information may be found relating to existing controls (e.g. other risk assessments)	Is the risk adequately controlled?	Describe additional actions or controls required

Olfasense Site Team (All Staff)		**Name**	**Signature**	**Date**
Risk Assessment read and understood (including additional risk and COSHH assessments)				
Site Induction attended				

4 Site review and measurement plan

Sampling Location 1			
Location	Inlet channel pre-screens	Date source to be sampled	1 No. occasion during sampling campaign
Process characteristics (eg. continuous/batch, operational times, variations in feedstock)	Continuous	Operating conditions under which sampling should take place (where applicable)	Normal operational conditions. Where possible, sampling conducted during dry weather conditions (<5mm rain preceding 3 No. days, no storm tank utilisation).
Time of sampling (where applicable)	n/a	Sampling duration (where applicable - eg. batch processes)	Standard triplicate lung method odour sampling - 30 minutes.
Sampling method to be used	Lindvall hood sampling	Sample port availability (size, number of ports, location)	n/a
Duct dimensions at the sampling location	n/a	Temperature/humidity of the gas stream (where known)	n/a
Required deviations from OSUK quality procedures	None anticipated.	Expected emissions (where known)	Unknown. Concentrations anticipated to result from hood sampling unlikely to be hazardous.
Access to sampling location	Ground level. Railings/barriers in place.	Specific hazards at this sampling location. Physical restrictions on equipment use (eg. hazardous area, tight access to duct)	Site traffic, slips/trips, deep water. Potentially high H2S, H2S monitors to be worn.
Number of replicate samples	Triplicate (3)	Additional tests to be carried out at sampling location (eg. GCMS, H2S etc)	H2S, Consultant Character.
Dust at source? Does the source require dust filters?	No		

Sampling location photo (optional)

The photo should be copied into the box above, without over hanging the border to ensure it is printed on one page only.

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Sampling Location 2			
Location	Screenings skips	Date source to be sampled	1 No. occasion during sampling campaign
Process characteristics (eg. continuous/batch, operational times, variations in feedstock)	Continuous	Operating conditions under which sampling should take place (where applicable)	Normal operations. Take photo's of content of the skip and note how full they are.
Time of sampling (where applicable)	n/a	Sampling duration (where applicable - eg. batch processes)	Standard triplicate lung method odour sampling - 30 minutes.
Sampling method to be used	Lindvall hood sampling	Sample port availability (size, number of ports, location)	n/a
Duct dimensions at the sampling location	n/a	Temperature/humidity of the gas stream (where known)	n/a
Required deviations from OSUK quality procedures	None anticipated.	Expected emissions (where known)	Unknown. Concentrations anticipated to result from hood sampling unlikely to be hazardous.
Access to sampling location	Ground level.	Specific hazards at this sampling location. Physical restrictions on equipment use (eg. hazardous area, tight access to duct)	Site traffic, deep water, slips/falls. Potentially high H2S, H2S monitors to be worn.
Number of replicate samples	Triplicate (3)	Additional tests to be carried out at sampling location (eg. GCMS, H2S etc)	H2S, Consultant Character. Hedonic Tone.
Dust at source? Does the source require dust filters?	No		

Sampling location photo (optional)

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Sampling Location 3			
Location	Detritor	Date source to be sampled	1 No. occasion during sampling campaign
Process characteristics (eg. continuous/batch, operational times, variations in feedstock)	Continuous	Operating conditions under which sampling should take place (where applicable)	Normal operational conditions. Where possible, sampling conducted during dry weather conditions (<5mm rain preceding 3 No. days, no storm tank utilisation).
Time of sampling (where applicable)	n/a	Sampling duration (where applicable - eg. batch processes)	Standard triplicate lung method odour sampling - 30 minutes.
Sampling method to be used	Lindvall hood sampling - section of grating to be removed.	Sample port availability (size, number of ports, location)	n/a
Required deviations from OSUK quality procedures	None anticipated.	Expected emissions (where known)	Unknown. Concentrations anticipated to result from hood sampling unlikely to be hazardous.
Access to sampling location	Section of detritor grating to be removed to facilitate sampling. 2 No access options: 1. Section of grating removed, with sampling being undertaken from ground level behind concrete walls of detritor. 2. Section of grating removed, with sampling being undertaken from grated walkway using half hood. **NOTE further control measures required.** Discsussion to be held with site ops and project manager prior to sampling.	Specific hazards at this sampling location. Physical restrictions on equipment use (eg. hazardous area, tight access to duct)	Site traffic, deep water, slips/falls. Potentially high H2S, H2S monitors to be worn. **Accesss method 2:** Increased risk of falling/drowning. The section of grating removed should be as small as possible, half hood to be used. Where possible secure temporary barriers should be set up. Where this isnt possible work restraint harnesses will need to be worn to prevent ST's from being able to lean over or fall in open section of grating. **Onsite method derivation and RA required. Do not proceed with work if unsure whether the work is safe.**
Number of replicate samples	Triplicate (3)	Additional tests to be carried out at sampling location (eg. GCMS, H2S etc)	H2S, Consultant Character.
Dust at source? Does the source require dust filters?	No.		

Sampling location photo (optional)

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Sampling Location 4			
Location	SBR - during Fill/aerate	Date source to be sampled	1 No. occasion during sampling campaign
Process characteristics (eg. continuous/batch, operational times, variations in feedstock)	Follows cycle of filling/aeration to decanting.	Operating conditions under which sampling should take place (where applicable)	During fill/aerate process. Where possible, sampling conducted during dry weather conditions (<5mm rain preeeding 3 No. days, no storm tank utilisation).
Time of sampling (where applicable)	Sample set collected over the course of the day during fill/aerate cycles.	Sampling duration (where applicable – eg. batch processes)	3 samples spread over the course of the day.
Sampling method to be used	Lindvall hood sampling	Sample port availability (size, number of ports, location)	n/a
Duct dimensions at the sampling location	n/a	Temperature/humidity of the gas stream (where known)	n/a
Required deviations from OSUK quality procedures	None anticipated.	Expected emissions (where known)	Unknown. Concentrations anticipated to result from hood sampling unlikely to be hazardous.
Access to sampling location	Stair access to platform/walkway. Barriers/railings and toeboards in place.	Specific hazards at this sampling location. Physical restrictions on equipment use (eg. hazardous area, tight access to duct)	Deep water/negatively buoyant water, slips/falls. Potentially high H2S, H2S monitors to be worn.
Number of replicate samples	Triplicate (3) collected over the course of the day.	Additional tests to be carried out at sampling location (eg. GCMS, H2S etc)	H2S, Consultant Character. Hedonic Tone.
Dust at source? Does the source require dust filters?	No		

Sampling location photo (optional)

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Sampling Location 5			
Location	SBR - during decant	Date source to be sampled	1 No. occasion during sampling campaign
Process characteristics (eg. continuous/batch, operational times, variations in feedstock)	Follows cycle of filling/aeration to decanting.	Operating conditions under which sampling should take place (where applicable)	During decant process. Where possible, sampling conducted during dry weather conditions (<5mm rain preeeding 3 No. days, no storm tank utilisation).
Time of sampling (where applicable)	Sample set collected over the course of the day during decant cycle.	Sampling duration (where applicable – eg. batch processes)	3 samples spread over the course of the day.
Sampling method to be used	Lindvall hood sampling	Sample port availability (size, number of ports, location)	n/a
Duct dimensions at the sampling location	n/a	Temperature/humidity of the gas stream (where known)	n/a
Required deviations from OSUK quality procedures	n/a	Expected emissions (where known)	Unknown. Concentrations anticipated to result from hood sampling unlikely to be hazardous.
Access to sampling location	Stair access to platform/walkway. Barriers/railings and toeboards in place.	Specific hazards at this sampling location. Physical restrictions on equipment use (eg. hazardous area, tight access to duct)	Deep water/negatively buoyant water, slips/falls. Potentially high H2S, H2S monitors to be worn.
Number of replicate samples	Triplicate (3) collected over the course of the day.	Additional tests to be carried out at sampling location (eg. GCMS, H2S etc)	H2S, Consultant Character.
Dust at source? Does the source require dust filters?	No		

Sampling location photo (optional)

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Sampling Location 6			
Location	SAS holding tank	Date source to be sampled	1 No. occasion during sampling campaign
Process characteristics (eg. continuous/batch, operational times, variations in feedstock)	Continuous	Operating conditions under which sampling should take place (where applicable)	Normal operational conditions. Check with site ops, where required.
Time of sampling (where applicable)	n/a	Sampling duration (where applicable - eg. batch processes)	Standard triplicate lung method odour sampling - 30 minutes.
Sampling method to be used	Lindvall hood sampling	Sample port availability (size, number of ports, location)	n/a
Duct dimensions at the sampling location	n/a	Temperature/humidity of the gas stream (where known)	n/a
Required deviations from OSUK quality procedures	n/a	Expected emissions (where known)	Unknown. Concentrations anticipated to result from hood sampling unlikely to be hazardous.
Access to sampling location	Ladder access to small raised platform.	Specific hazards at this sampling location. Physical restrictions on equipment use (eg. hazardous area, tight access to duct)	Deep water, slips/falls, falls from height, lifting and hoisting. Limited space on platform, none essential equipment to remain at ground level. Potentially high H2S, H2S monitors to be worn.
Number of replicate samples	Triplicate (3)	Additional tests to be carried out at sampling location (eg. GCMS, H2S etc)	H2S, Consultant Character.
Dust at source? Does the source require dust filters?	No		

Sampling location photo (optional)

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Sampling Location 7			
Location	Sludge screenings skip	Date source to be sampled	1 No. occasion during sampling campaign
Process characteristics (eg. continuous/batch, operational times, variations in feedstock)	Continuous	Operating conditions under which sampling should take place (where applicable)	Normal operations. Take photo's of content of the skip and note how full they are.
Time of sampling (where applicable)	n/a	Sampling duration (where applicable - eg. batch processes)	Standard triplicate lung method odour sampling - 30 minutes.
Sampling method to be used	Lindvall hood sampling	Sample port availability (size, number of ports, location)	n/a
Duct dimensions at the sampling location	n/a	Temperature/humidity of the gas stream (where known)	n/a
Required deviations from OSUK quality procedures	None anticipated.	Expected emissions (where known)	Unknown. Concentrations anticipated to result from hood sampling unlikely to be hazardous.
Access to sampling location	Ground level.	Specific hazards at this sampling location. Physical restrictions on equipment use (eg. hazardous area, tight access to duct)	Site traffic, deep water, slips/falls. Potentially high H2S, H2S monitors to be worn.
Number of replicate samples	Triplicate (3)	Additional tests to be carried out at sampling location (eg. GCMS, H2S etc)	H2S, Consultant Character.
Dust at source? Does the source require dust filters?	No.		

Sampling location photo (optional)

The photo should be copied into the box above, without over hanging the border to ensure it is printed on one page only.

4 Site review and measurement plan

Sampling Location 8			
Location	Sludge centrifudge room	Date source to be sampled	1 No. occasion during sampling campaign
Process characteristics (eg. continuous/batch, operational times, variations in feedstock)	Continuous	Operating conditions under which sampling should take place (where applicable)	Normal operational conditions - **with all doors closed**. DCWW to notify fire department regarding smoke testing. DCWW to temporarily deactivate fire alarms
Time of sampling (where applicable)	Liaise with site for when building can be vacated for smoke testing.	Sampling duration (where applicable - eg. batch processes)	Standard triplicate lung method odour sampling - 30 minutes. Smoke testing dependent on size of room.
Sampling method to be used	**Ambient sampling:** Samples to be collected from across the building (consider use of extension pole for sample line. **Smoke testing:** A portable 110v smoke machine (with auxiliary fan, where required) will be used to fill the building/building areas/covered assets with smoke. Observations of smoke movement, volumes and clearance times (where possible) will be made. Observations/instances of smoke leakage will be recorded using video, photos and notes, where relevant. Areas of local extraction will also be tested (where present), in terms of their ability to draw smoke in their vicinity. **Airflow through building defects:** will be estimated using a hotwire anemometer. **Building/tank static pressure testing:** Building static pressure will be determined using a manometer where building extraction systems are present. **Estimation of windspeed:** To be undertaken at time of testing using vanewheel/hotwire anemometer. **Extraction system airflow testing:** For builds with are actively extraction airflow measurements should be from safely accessible ductwork, onsite RA's required before proceeding with measurements.		
Duct dimensions at the sampling location	n/a	Temperature/humidity of the gas stream (where known)	n/a
Required deviations from OSUK quality procedures	None anticipated.	Expected emissions (where known)	Unknown. Trace gas concentrations within the general building atmosphere aren't anticipated to be hazardous. However a risk of localised areas of elevated concentrations remains, personal monitors to be worn at all times.
Access to sampling location	Mainly ground level. Some stair or fixed ladder access may be required.	Specific hazards at this sampling location. Physical restrictions on equipment use (eg. hazardous area, tight access to duct)	Slips/trips, Mech plant, falls from height. Potentially high H2S, H2S monitors to be worn.
Number of replicate samples	Triplicate (3)	Additional tests to be carried out at sampling location (eg. GCMS, H2S etc)	H2S, Consultant Character.
Dust at source? Does the source require dust filters?	No		

Sampling location photo (optional)
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4 Site review and measurement plan

Sampling Location 9			
Location	Imported cake bin - *cake surface emissions*	Date source to be sampled	1 No. occasion during sampling campaign
Process characteristics (eg. continuous/batch, operational times, variations in feedstock)	Continuous	Operating conditions under which sampling should take place (where applicable)	Smoke testing - normal operational conditions - **with all doors closed**. DCWW to notify fire department regarding smoke testing. DCWW to temporarily deactivate fire alarms associated with areas under test.
Time of sampling (where applicable)	Liaise with site for when building can be vacated for smoke testing.	Sampling duration (where applicable – eg. batch processes)	Standard triplicate lung method odour sampling - 30 minutes. Smoke testing dependent on size of room.
Sampling method to be used	**Lindvall hood sampling** - Site ops to assist in obtaining sludge cake sample (small portion of cake to be dropped on floor from lorry during routine delivery), inverted hood sampling to be undertaken on cake sample obtained. **Smoke testing -** A portable 110v smoke machine (with auxiliary fan, where required) will be used to fill the building/building areas/covered assets with smoke. Observations of smoke movement, volumes and clearance times (where possible) will be made. Observations/instances of smoke leakage will be recorded using video, photos and notes, where relevant. Areas of local extraction will also be tested (where present), in terms of their ability to draw smoke in their vicinity. **Airflow through building defects:** will be estimated using a hotwire anemometer. **Building/tank static pressure testing:** Building static pressure will be determined using a manometer where building extraction systems are present. **Estimation of windspeed:** To be undertaken at time of testing using vanewheel/hotwire anemometer.		
Duct dimensions at the sampling location	n/a	Temperature/humidity of the gas stream (where known)	n/a
Required deviations from OSUK quality procedures	None anticipated.	Expected emissions (where known)	Unknown. Trace gas concentrations within the general building atmosphere aren't anticipated to be hazardous. However a risk of localised areas of elevated concentrations
Access to sampling location	Ground level access. Do not approach hopper. Sample of imported cake to be provided by site ops.	Specific hazards at this sampling location. Physical restrictions on equipment use (eg. hazardous area, tight access to duct)	Slips/trips, mech plant, falls from height. **Do not approach or lean into hopper, site ops to provide a sample of imported cake for inverted hood sampling.** Potentially high H2S, H2S monitors to be worn.
Number of replicate samples	Triplicate (3)	Additional tests to be carried out at sampling location (eg. GCMS, H2S etc)	H2S, Consultant Character.
Dust at source? Does the source require dust filters?	No		

Sampling location photo (optional)

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4 Site review and measurement plan

Sampling Location 10			
Location	Secondary digester	Date source to be sampled	1 No. occasion during sampling campaign
Process characteristics (eg. continuous/batch, operational times, variations in feedstock)	Continuous	Operating conditions under which sampling should take place (where applicable)	Normal operational conditions, confirm with site ops (visual observation not possible).
Time of sampling (where applicable)	n/a	Sampling duration (where applicable - eg. batch processes)	Standard triplicate lung method odour sampling - 30 minutes.
Sampling method to be used	Inverted Lindvall hood sampling - **digested sludge sample to be obtained by site ops, circa 30L .**	Sample port availability (size, number of ports, location)	n/a
Duct dimensions at the sampling location	n/a	Temperature/humidity of the gas stream (where known)	n/a
Required deviations from OSUK quality procedures	Inverted hood with liquid sample obtained by site ops.	Expected emissions (where known)	Unknown. Concentrations anticipated to result from hood sampling unlikely to be hazardous.
Access to sampling location	Ground level, near the secondary digester. Site ops to obtain sludge sample from tank, circa 30L (or two buckets) required.	Specific hazards at this sampling location. Physical restrictions on equipment use (eg. hazardous area, tight access to duct)	Site traffic, slips/trips, deep water. Potentially high H2S, H2S monitors to be worn.
Number of replicate samples	Triplicate (3)	Additional tests to be carried out at sampling location (eg. GCMS, H2S etc)	H2S, Consultant Character.
Dust at source? Does the source require dust filters?	No		

Sampling location photo (optional)
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Sampling Location 11			
Location	Post-THP belt press building	Date source to be sampled	1 No. occasion during sampling campaign
Process characteristics (eg. continuous/batch, operational times, variations in feedstock)	Continuous	Operating conditions under which sampling should take place (where applicable)	Normal operational conditions - **with all doors closed**. DCWW to notify fire department regarding smoke testing. DCWW to temporarily deactivate fire alarms associated with areas under test.
Time of sampling (where applicable)	Liaise with site for when building can be vacated for smoke testing.	Sampling duration (where applicable - eg. batch processes)	Standard triplicate lung method odour sampling - 30 minutes. Smoke testing dependent on size of room.
Sampling method to be used	**Ambient sampling:** Samples to be collected from across the building (consider use of extension pole for sample line. **Smoke testing:** A portable 110v smoke machine (with auxiliary fan, where required) will be used to fill the building/building areas/covered assets with smoke. Observations of smoke movement, volumes and clearance times (where possible) will be made. Observations/instances of smoke leakage will be recorded using video, photos and notes, where relevant. Areas of local extraction will also be tested (where present), in terms of their ability to draw smoke in their vicinity. **Airflow through building defects:** will be estimated using a hotwire anemometer. **Building/tank static pressure testing:** Building static pressure will be determined using a manometer where building extraction systems are present. **Estimation of windspeed:** To be undertaken at time of testing using vane wheel/hotwire anemometer. **Extraction system airflow testing:** For builds with are actively extraction airflow measurements should be from safely accessible ductwork, onsite RA's required before proceeding with measurements.		
Duct dimensions at the sampling location	n/a	Temperature/humidity of the gas stream (where known)	n/a
Required deviations from OSUK quality procedures	None anticipated.	Expected emissions (where known)	Unknown. Trace gas concentrations within the general building atmosphere aren't anticipated to be hazardous. However a risk of localised areas of elevated concentrations remains, personal monitors to be worn at all times.
Access to sampling location	Mainly ground level. Some stair or fixed ladder access may be required.	Specific hazards at this sampling location. Physical restrictions on equipment use (eg. hazardous area, tight access to duct)	Slips/trips, Mech plant, falls from height. Potentially high H2S, H2S monitors to be worn.
Number of replicate samples	Triplicate (3)	Additional tests to be carried out at sampling location (eg. GCMS, H2S etc)	H2S, Consultant Character.
Dust at source? Does the source require dust filters?	No		

Sampling location photo (optional)

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4 Site review and measurement plan

Sampling Location 12			
Location	Digested sludge cake - Fresh	Date source to be sampled	1 No. occasion during sampling campaign
Process characteristics (eg. continuous/batch, operational times, variations in feedstock)	Continuous.	Operating conditions under which sampling should take place (where applicable)	Sample from fresh cake (there should be a fresh cake day pad located below the belt presses/conveyor). Take photos of cake storage quantities.
Time of sampling (where applicable)	Liaise with site regarding an appropriate time to sample with least vehicle movements.	Sampling duration (where applicable - eg. batch processes)	Standard triplicate lung method odour sampling - 30 minutes.
Sampling method to be used	Lindvall hood sampling	Sample port availability (size, number of ports, location)	n/a
Duct dimensions at the sampling location	n/a	Temperature/humidity of the gas stream (where known)	n/a
Required deviations from OSUK quality procedures	None anticipated	Expected emissions (where known)	Unknown. Concentrations anticipated to result from hood sampling unlikely to be hazardous.
Access to sampling location	Ground level	Specific hazards at this sampling location. Physical restrictions on equipment use (eg. hazardous area, tight access to duct)	Slips/trips site traffic. Note the floor in the cake barn is likely to be extremely slippy, exercise extreme care. Be aware of site traffic, consider requesting vehicle movements to be stopped during sampling and/or using van to shield working area. Potentially high H2S - monitors to be worn.
Number of replicate samples	Triplicate (3)	Additional tests to be carried out at sampling location (eg. GCMS, H2S etc)	H2S, Consultant Character.
Dust at source? Does the source require dust filters?	No		

Sampling location photo (optional)

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4 Site review and measurement plan

Sampling Location 13			
Location	Digested sludge cake - Aged	Date source to be sampled	1 No. occasion during sampling campaign
Process characteristics (eg. continuous/batch, operational times, variations in feedstock)	Continuous.	Operating conditions under which sampling should take place (where applicable)	Sample from aged cake (confirm with site ops). Take photos of cake storage quantities. Note approx. age of cake is info available.
Time of sampling (where applicable)	Liaise with site regarding an appropriate time to sample with least vehicle movements.	Sampling duration (where applicable - eg. batch processes)	Standard triplicate lung method odour sampling - 30 minutes.
Sampling method to be used	Lindvall hood sampling	Sample port availability (size, number of ports, location)	n/a
Duct dimensions at the sampling location	n/a	Temperature/humidity of the gas stream (where known)	n/a
Required deviations from OSUK quality procedures	n/a	Expected emissions (where known)	Unknown. Concentrations anticipated to result from hood sampling unlikely to be hazardous.
Access to sampling location	Ground level	Specific hazards at this sampling location. Physical restrictions on equipment use (eg. hazardous area, tight access to duct)	Slips/trips site traffic. Note the floor in the cake barn is likely to be extremely slippy, exercise extreme care. Be aware of site traffic, consider requesting vehicle movements to be stopped during sampling and/or using van to shield working area. Potentially high H2S - monitors to be worn.
Number of replicate samples	Triplicate (3)	Additional tests to be carried out at sampling location (eg. GCMS, H2S etc)	H2S, Consultant Character. Hedonic Tone.
Dust at source? Does the source require dust filters?	No		

Sampling location photo (optional)

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Sampling Location 14			
Location	Siloxane filter during regeneration	Date source to be sampled	1 No. occasion during sampling campaign
Process characteristics (eg. continuous/batch, operational times, variations in feedstock)	Runs over operational cycle.	Operating conditions under which sampling should take place (where applicable)	Sample during regen cycle. Check operational condtions with site ops prior to testing.
Time of sampling (where applicable)	During regen, time of day unknown.	Sampling duration (where applicable - eg. batch processes)	Standard triplicate lung method odour sampling - 30 minutes.
Sampling method to be used	Point source sampling using telescopic pole and stainless steel sample line extentions with u bend at end. SS U bend to be inserted into outlet stack.	Sample port availability (size, number of ports, location)	Not known
Duct dimensions at the sampling location	Not known	Temperature/humidity of the gas stream (where known)	Not known
Required deviations from OSUK quality procedures	n/a	Expected emissions (where known)	Unknown. Treated air stream, unlikely to be hazardous, monitors worn.
Access to sampling location	Ground level access using a telescopic sampling probe.	Specific hazards at this sampling location. Physical restrictions on equipment use (eg. hazardous area, tight access to duct)	Site traffic, pontentially high H2S - monitors to be worn. **Discussions to be held during site inductions regarding EX zoning.** Siloxane filter stack is likely to be located within a zoned area. No none-ATEX rated equipment to be taken into Zoned areas. Sampling equipment (such as pumps, phones, flow kit, Toughbook etc) to be kept outside zoned area, long sample line to be run from outside zoned area. **Personnel multi gas monitors to be worn at all times.** Consider the requirement to red cable tie bags.
Number of replicate samples	Triplicate	Additional tests to be carried out at sampling location (eg. GCMS, H2S etc)	H2S, Consultant Character. Hedonic Tone.
Dust at source? Does the source require dust filters?	No		

Sampling location photo (optional)

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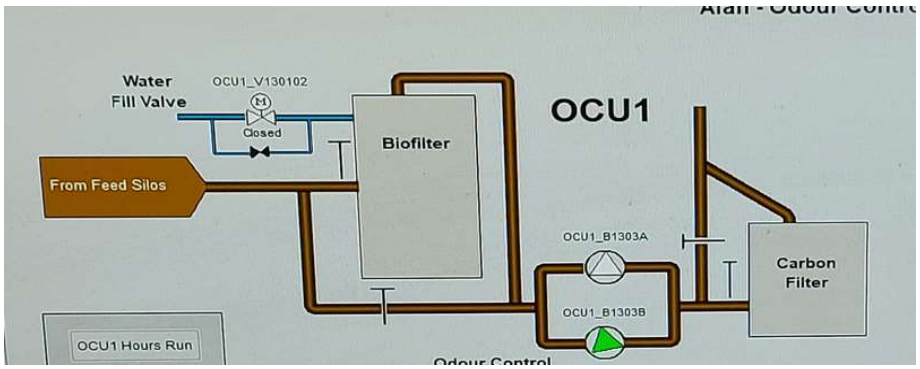
4 Site review and measurement plan

Sampling Location 15			
Location	OCU 1 - Inlet	Date source to be sampled	1 No. occasion during sampling campaign
Process characteristics (eg. continuous/batch, operational times, variations in feedstock)	Continuous	Operating conditions under which sampling should take place (where applicable)	Normal operation conditions, check with site ops prior to sampling.
Time of sampling (where applicable)	Simultaneous with remaining OCU 1 sampling locations.	Sampling duration (where applicable - eg. batch processes)	Standard triplicate lung method odour sampling - 30 minutes.
Sampling method to be used	Point source sampling	Sample port availability (size, number of ports, location)	1 No. port vertical duct (see photo below).
Duct dimensions at the sampling location	Not known, circa 0.5m	Temperature/humidity of the gas stream (where known)	Not known
Required deviations from OSUK quality procedures	Only one measurement axis available.	Expected emissions (where known)	Unknown. Potential to be hazardous. Consider red cable tie on odour bags.
Access to sampling location	Ground level	Specific hazards at this sampling location. Physical restrictions on equipment use (eg. hazardous area, tight access to duct)	Site traffic, slips/trips, head injury, mech plant. Potentially high H2S - monitors to be worn.
Number of replicate samples	Triplicate (3)	Additional tests to be carried out at sampling location (eg. GCMS, H2S etc)	H2S, Consultant Character.
Dust at source? Does the source require dust filters?	No		

Sampling location photo (optional)



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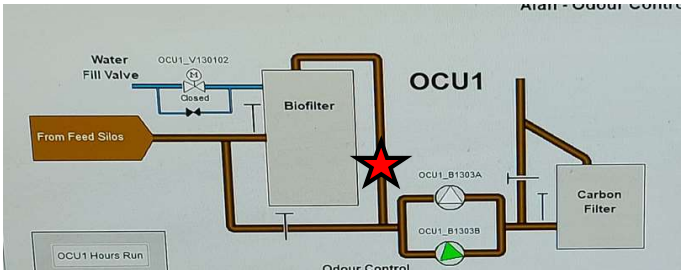
Sampling Location 16			
Location	OCU 1 - Mid stage	Date source to be sampled	1 No. occasion during sampling campaign
Process characteristics (eg. continuous/batch, operational times, variations in feedstock)	Continuous	Operating conditions under which sampling should take place (where applicable)	Normal operation conditions, check with site ops prior to sampling.
Time of sampling (where applicable)	Simultaneous with remaining OCU 1 sampling locations.	Sampling duration (where applicable - eg. batch processes)	Standard triplicate lung method odour sampling - 30 minutes.
Sampling method to be used	Point source sampling	Sample port availability (size, number of ports, location)	1 No. port vertical duct (see photo below).
Duct dimensions at the sampling location	Not known, circa 0.5m	Temperature/humidity of the gas stream (where known)	Not known
Required deviations from OSUK quality procedures	Only one measurement axis available.	Expected emissions (where known)	Unknown. Potential to be hazardous. Consider red cable tie on odour bags.
Access to sampling location	Ground level	Specific hazards at this sampling location. Physical restrictions on equipment use (eg. hazardous area, tight access to duct)	Site traffic, slips/trips, head injury, mech plant. Potentially high H2S - monitors to be worn.
Number of replicate samples	Triplicate (3)	Additional tests to be carried out at sampling location (eg. GCMS, H2S etc)	H2S, Consultant Character.
Dust at source? Does the source require dust filters?	No		

Sampling location photo (optional)



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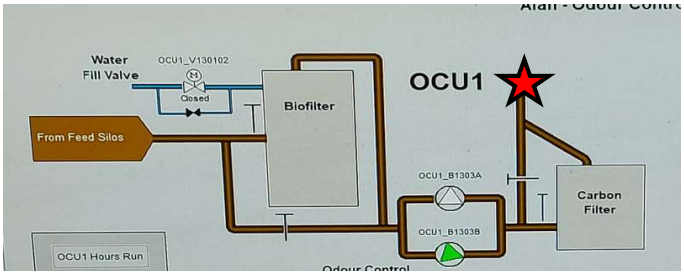
4 Site review and measurement plan

Sampling Location 17			
Location	OCU 1 - Outlet	Date source to be sampled	1 No. occasion during sampling campaign
Process characteristics (eg. continuous/batch, operational times, variations in feedstock)	Continuous	Operating conditions under which sampling should take place (where applicable)	Normal operation conditions, check with site ops prior to sampling.
Time of sampling (where applicable)	Simultaneous with remaining OCU 1 sampling locations.	Sampling duration (where applicable - eg. batch processes)	Standard triplicate lung method odour sampling - 30 minutes.
Sampling method to be used	Point source sampling using telescopic pole and stainless steel sample line extensions with u bend at end. SS U bend to be inserted into outlet stack.	Sample port availability (size, number of ports, location)	No sample port, sample from discharge stack.
Duct dimensions at the sampling location	Not known.	Temperature/humidity of the gas stream (where known)	Not known
Required deviations from OSUK quality procedures	Sampling from a ground level using extended sample line. Non-UKAS accredited.	Expected emissions (where known)	Unknown. Treated air stream, unlikely to be hazardous, however do not assume airstream is non hazardous, monitors to be worn.
Access to sampling location	Ground level access using extended sample line.	Specific hazards at this sampling location. Physical restrictions on equipment use (eg. hazardous area, tight access to duct)	Site traffic, slips/falls, Potentially high H2S, H2S monitors to be worn.
Number of replicate samples	Triplicate (3)	Additional tests to be carried out at sampling location (eg. GCMS, H2S etc)	H2S, Consultant Character. Hedonic Tone.
Dust at source? Does the source require dust filters?	No		

Sampling location photo (optional)



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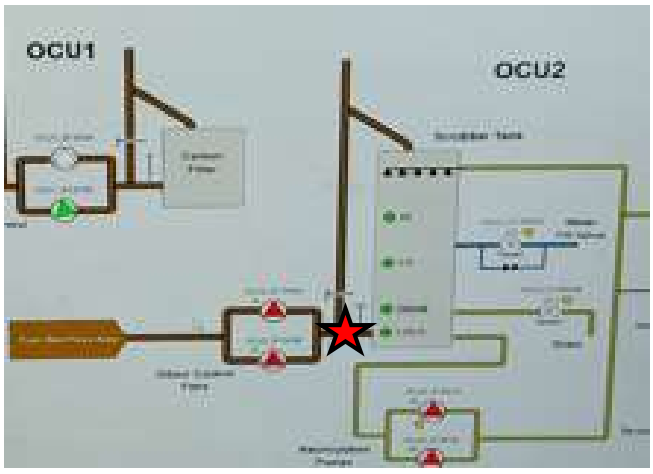
4 Site review and measurement plan

Sampling Location 18			
Location	OCU 2 - Inlet NOTE: currently out of commission check with site ops at time of survey.	Date source to be sampled	1 No. occasion during sampling campaign
Process characteristics (eg. continuous/batch, operational times, variations in feedstock)	Continuous	Operating conditions under which sampling should take place (where applicable)	Note whether OCU is operational.
Time of sampling (where applicable)	Simultaneous with remaining OCU 2 sampling locations.	Sampling duration (where applicable - eg. batch processes)	Standard triplicate lung method odour sampling - 30 minutes.
Sampling method to be used	Point source sampling	Sample port availability (size, number of ports, location)	1 No. port diagonal duct (see photo below).
Duct dimensions at the sampling location	Not known, circa 0.5m	Temperature/humidity of the gas stream (where known)	Not known
Required deviations from OSUK quality procedures	Only one measurement axis available.	Expected emissions (where known)	Unknown. Potential to be hazardous. Consider red cable tie on odour bags.
Access to sampling location	Ground level	Specific hazards at this sampling location. Physical restrictions on equipment use (eg. hazardous area, tight access to duct)	Site traffic, slips/trips, head injury, mech plant. Potentially high H2S - monitors to be worn.
Number of replicate samples	Triplicate (3)	Additional tests to be carried out at sampling location (eg. GCMS, H2S etc)	H2S, Consultant Character. Hedonic Tone.
Dust at source? Does the source require dust filters?	No		

Sampling location photo (optional)



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4 Site review and measurement plan

Sampling Location 19			
Location	OCU 2 - Outlet Note: currently out of commission	Date source to be sampled	
Process characteristics (eg. continuous/batch, operational times, variations in feedstock)		Operating conditions under which sampling should take place (where applicable)	
Time of sampling (where applicable)		Sampling duration (where applicable – eg. batch processes)	
Sampling method to be used		Sample port availability (size, number of ports, location)	
Duct dimensions at the sampling location		Temperature/humidity of the gas stream (where known)	
Required deviations from OSUK quality procedures		Expected emissions (where known)	
Access to sampling location		Specific hazards at this sampling location. Physical restrictions on equipment use (eg. hazardous area, tight access to duct)	
Number of replicate samples		Additional tests to be carried out at sampling location (eg. GCMS, H2S etc)	
Dust at source? Does the source require dust filters?			

Sampling location photo (optional)

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