

ADBA EXPO: 3rd July 2019

PRACTICAL MANAGEMENT OF ODOUR EMISSIONS

PERCEPTIONS & WORKLOAD

A CASE STUDY

BORE HILL FARM BIODIGESTER



www.malabybiogas.com



BORE HILL FARM BIODIGESTER

- 28,000 tpa food waste
- Excellent road connections
- Operational June 2012
- High visibility:
 - Visitor Centre
 - Exemplar Design
 - Innovation & Excellence
- Flexible Inputs
- Bespoke In House Odour Control System



Bore Hill Farm Biodigester



LOCATION - RECEPTORS

Roads

- A36 trunk road & A350 on doorstep

Edge of Town

- 45 neighbours – 200 - 300m

- Roads & roundabout

- Pavement & public foot path

Countryside

- Salisbury Plain

- AONB

- River Avon SAC



FOOD WASTE TYPES

- **C & I Waste**
- **Liquids**
- **Loose Primary Packaged**
- **Palletised Secondary & Tertiary Packaged**
- **Containerised: Dolavs, IBCs, Barrels**



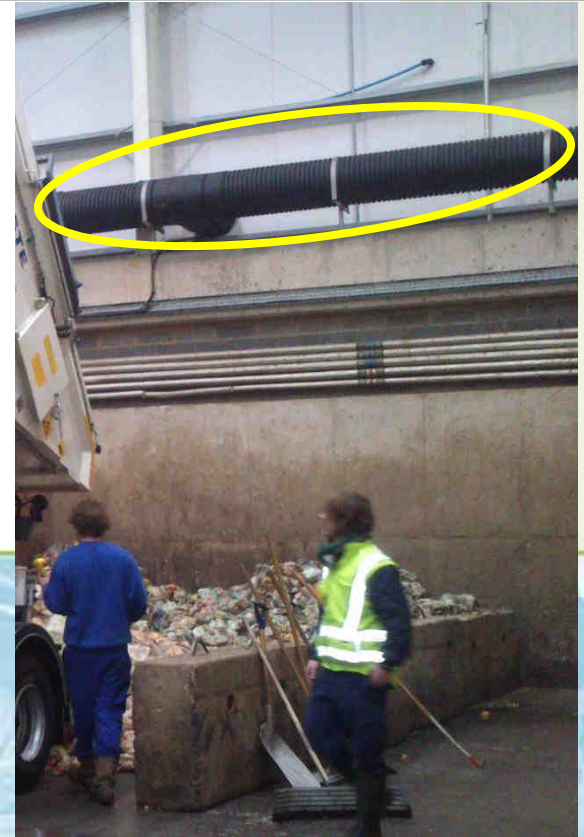
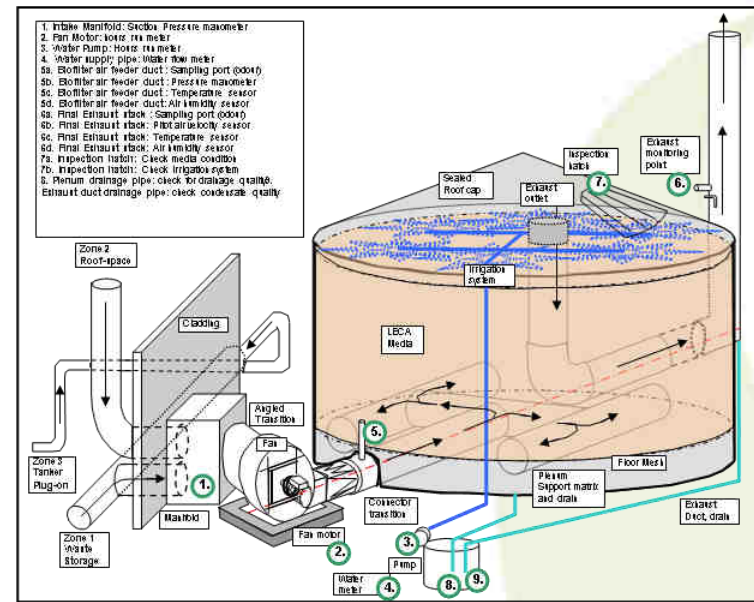
ODOUR CONTROL

Odour Management

- Design out issues
- Easy to Implement
- Regular Monitoring
- Proportionate Response

Key Principles

- **Prevention** – known inputs, delivery methods, reception procedures
- **Reduction** – timely processing, staff awareness, point source extraction, regular washing down
- **Treatment** – flexible air rate, variable filter contact time, robust design



ODOUR TREATMENT

■ Collect as close to source as possible

- Reduces air handling volume
- Reduces risk of leaks / fugitive emissions

■ Variable volume throughput

■ Trickling bio-scrubber

- irrigation (rain water harvesting + top up)
- Clay aggregate media
- Variable air flow fan draws air to scrubber
- Upward air flow through scrubber
- Variable flow irrigation
- Closed loop dirty water processing
- Emission stack



ODOUR MONITORING & RESPONSE

Daily Walk Round Checks

Site Activity Records

Site diaries – manager, reception hall, process technician

Differential pressure logs throughout scrubbing process

Front door control – sign in/out, manned reception, inductions

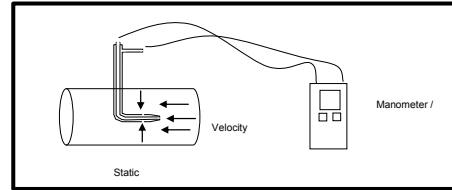
Complaints – date, time, location, odour characteristics, prompt response & engagement

Stakeholder engagement

Uninformed - public, visitors, site tours/events

Informed - EA, staff, deliveries & collections

Be open to improvements



DAILY WALK THROUGH CHECKLIST
 (Prefix: WT) DATE: 10/05/18
 Document Purpose: To act as a regular method of monitoring and to collate maintenance work tasks
 EMPLOYEE: COLIN + MIKE DAY: THURS

Weather			
Time:	18:15	Precipitation:	0
Temperature:	18°C	Sun/Cloud:	M/1/2/8
		Wind Speed:	0 MPH
		Wind direction (to):	E

#	Description/Check	Action/Notes
A Site Opening Check		
1	Enter via main gates. Open front gates. Open reception door, sign in, change into PPE & collect keys. Unlock all doors/gates during walk through.	
a	Ground floor pedestrian doors	<input checked="" type="checkbox"/>
b	Building perimeter security	<input checked="" type="checkbox"/>
2	Enter via plant room. Walk through internal area. Make visual check that everything is working properly. Note checks made, all observations & any actions to be taken.	
a	Plant room	<input checked="" type="checkbox"/>
b	Control room	<input checked="" type="checkbox"/> ALL GREEN
c	Mezzanine	<input checked="" type="checkbox"/> Water tank: W/SPRM
c	Reception hall	<input checked="" type="checkbox"/> W/SPR FULL
d	Spot wash	<input checked="" type="checkbox"/> Fan speed: 15
e	Security	<input checked="" type="checkbox"/>
f	Fire egress	<input checked="" type="checkbox"/>
g	Welfare & admin areas	<input checked="" type="checkbox"/>
h	Friday - weekly fire alarm test	<input checked="" type="checkbox"/> MCP ID Location: 10/1/18
3	Exit via reception door. Walk upstairs, through visitors centre, unlock rear gate & fan house. Make visual check of all areas that everything is working properly. Note checks made, all observations & any actions to be taken.	
a	Visitors centre	<input checked="" type="checkbox"/>
b	Air handling areas	<input checked="" type="checkbox"/>
B Ventilation Check		
1	Walk around air handling area & up to ventilation stack checking for noise & odour levels. Make visual check of all areas that everything is working properly. Manometer readings to be entered on the Readings Sheet on the shed wall. Note checks made, all observations & any actions to be taken.	
a	Water tanks	<input checked="" type="checkbox"/> 2x water
b	Fan house	<input checked="" type="checkbox"/> Biolifter water meter: 102.756
c	Ducks	<input checked="" type="checkbox"/>
d	Biofilter	<input checked="" type="checkbox"/> Check landscape
e	Vent stack	<input checked="" type="checkbox"/> Check bottom pipe
f	Smell test along walk through	<input checked="" type="checkbox"/> Vegetation
g	Diff pressure	<input checked="" type="checkbox"/> Scale of 0-8 mm
C Ridge Check		
1	Walk from vent stack down landscape ridge to Pumping Station & then around rear of Phase 2 yard to enter yard via open barn ending at Visitors car park. Make visual check of all areas that everything is working properly. Note checks made, all observations & any actions to be taken.	
a	Security fencing	<input checked="" type="checkbox"/>
b	Landscaping condition	<input checked="" type="checkbox"/> Stream
c	Smell test along ridge	<input checked="" type="checkbox"/> Scale of 0-8
d	Plant roses along ridge	<input checked="" type="checkbox"/> Scale of 0-8
e	Phase 2	<input checked="" type="checkbox"/> Check stream
D Road Check		
1	Walk from Visitors Car Park, along access road to Deverill Road, along Deverill Road to roundabout & back. At outer gates walk up soak away bank to soak away access covers & then along soak away ridge to substitution area. Make visual check of all areas that everything is working properly. Note checks made, all observations & any actions to be taken.	
a	Access road gutters are clean	<input checked="" type="checkbox"/>
b	Verges clear of litter	<input checked="" type="checkbox"/>



ODOUR COMPLAINT MANAGEMENT

■ Work Load (min 3.5 hrs per complaint)

■ Multiple Community Engagement

■ Site events – open house/learning/tours/discussions

■ Open door policy

■ Group stakeholders – town council/eco groups/community action groups/neighbours

■ Individual stakeholders – vocal minority/other agendas/**NIMBYism**

■ Scalable comms: Website/email/telephone

■ **Controllable** comms

■ Regulator Engagement

■ Recipient-based comms



CONCLUSION



- 6.5+ yrs operations
- High standards
- Visible & Approachable
- Integrated site
- Early stage design mitigation
- Operational Control
- Continual Communication
- Proportionate response
- Aim to be Best in Class
- Collaboration & Innovation



THANK YOU

- Thomas Minter
- Thomasminter@malabybiogas.com
- www.malabybiogas.com



www.malabybiogas.com

