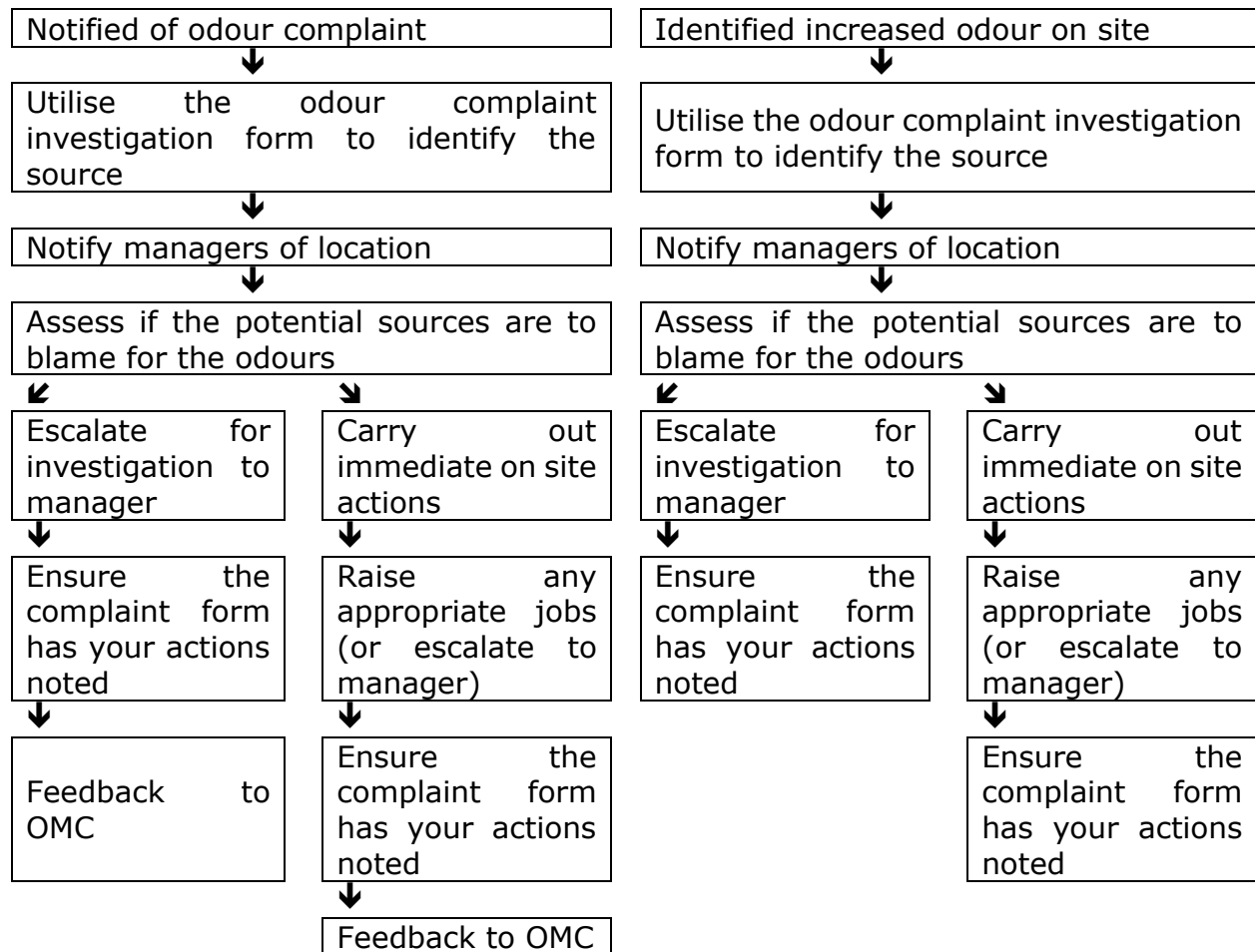


Anglian Water Services Ltd

Odour Management Plan

Site name	Anglian Water Great Billing
Address	23 Crow Lane, Little Billing, Northampton
Post code	NN3 9BX
Short code	GBILST
Grid Reference	SP8151161873
Permit	Permit AWNNF/13052
References	Variation AWNNF/13052/V003



Introduction

This plan refers to the site mentioned on the cover sheet and is in response to the First Odour Risk Assessment (FORA) process having been completed.

Details of the FORA process can be found on HAWK (<http://newhawk/Docs/PoliciesProcedures/Pages/POSWASTE-section-10.aspx>) and the outcome for this site shows that an OMP is required.

This plan will be reviewed every 12 months, and will be audited as part of the wider business audit programme.

Any significant changes, including process changes, plans changes or increase in complaints or odours detected will result in this plan being reviewed.

This plan will be stored on HAWK.

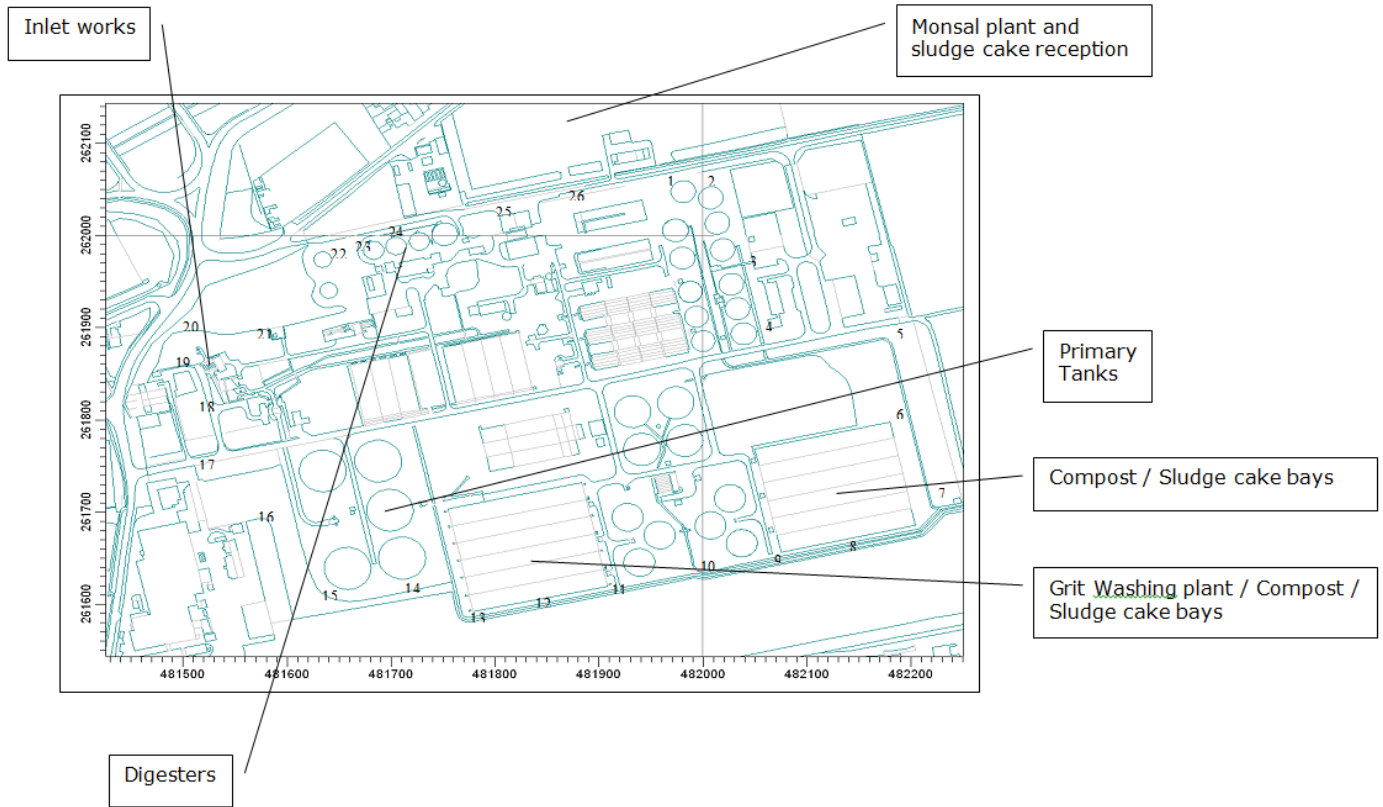
Business Management Systems

There are various documents and processes within the business management systems for AWS that address odour and the management of complaints. The list below details some of the key processes and how they can be found on HAWK:

- POSWASTE section 10 – Odour Control holds all the standard documents relating to managing odour (<http://newhawk/Docs/PoliciesProcedures/Pages/POSWASTE-section-10.aspx>)
- Where further investigation CAP process will be followed.
- Current Odour Model can be obtained from the modelling team, contact Omid Shafibeik.

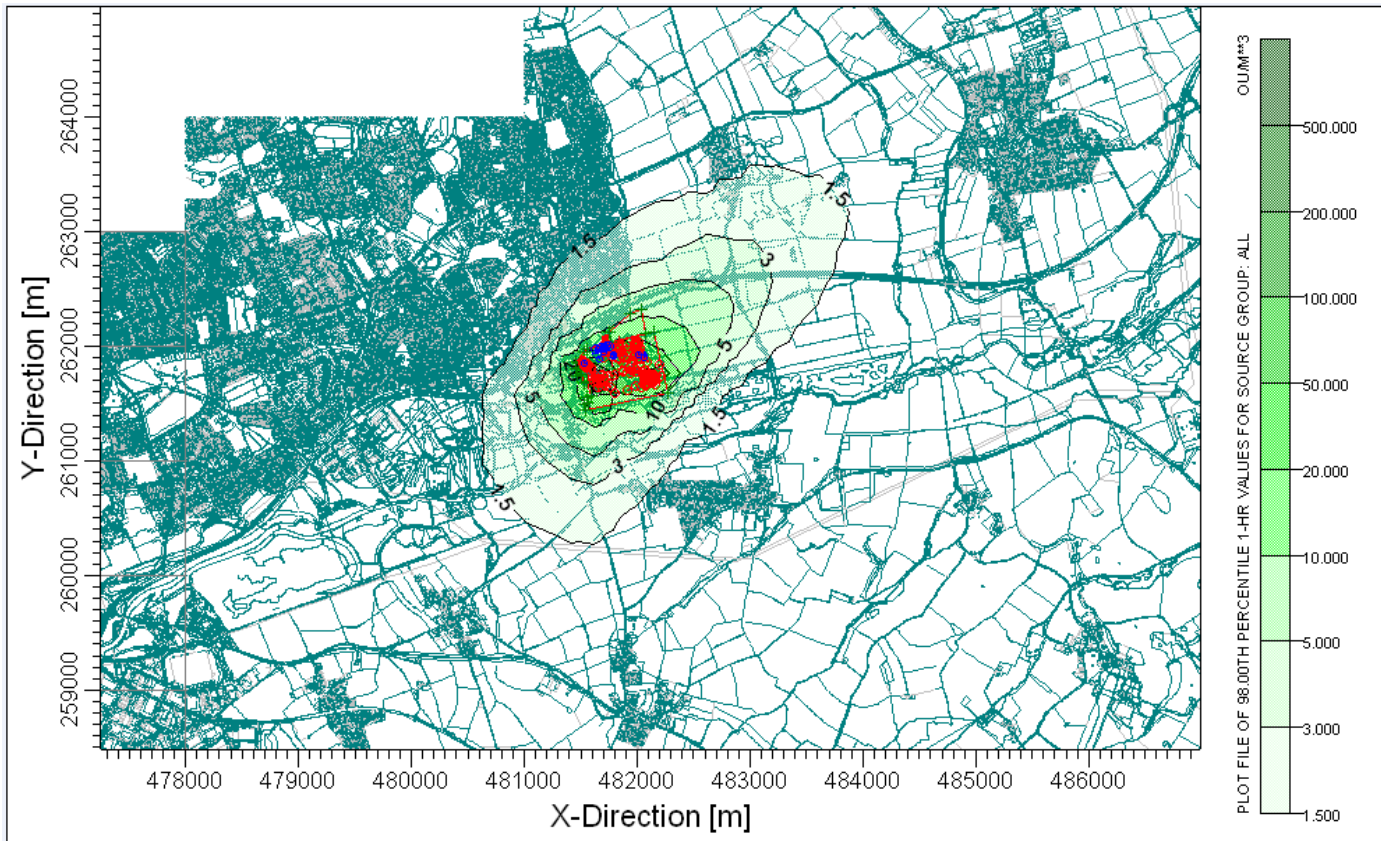
The site

The following maps show the site, odour sources, odour investigation points, weather information and sensitive/common receptors.



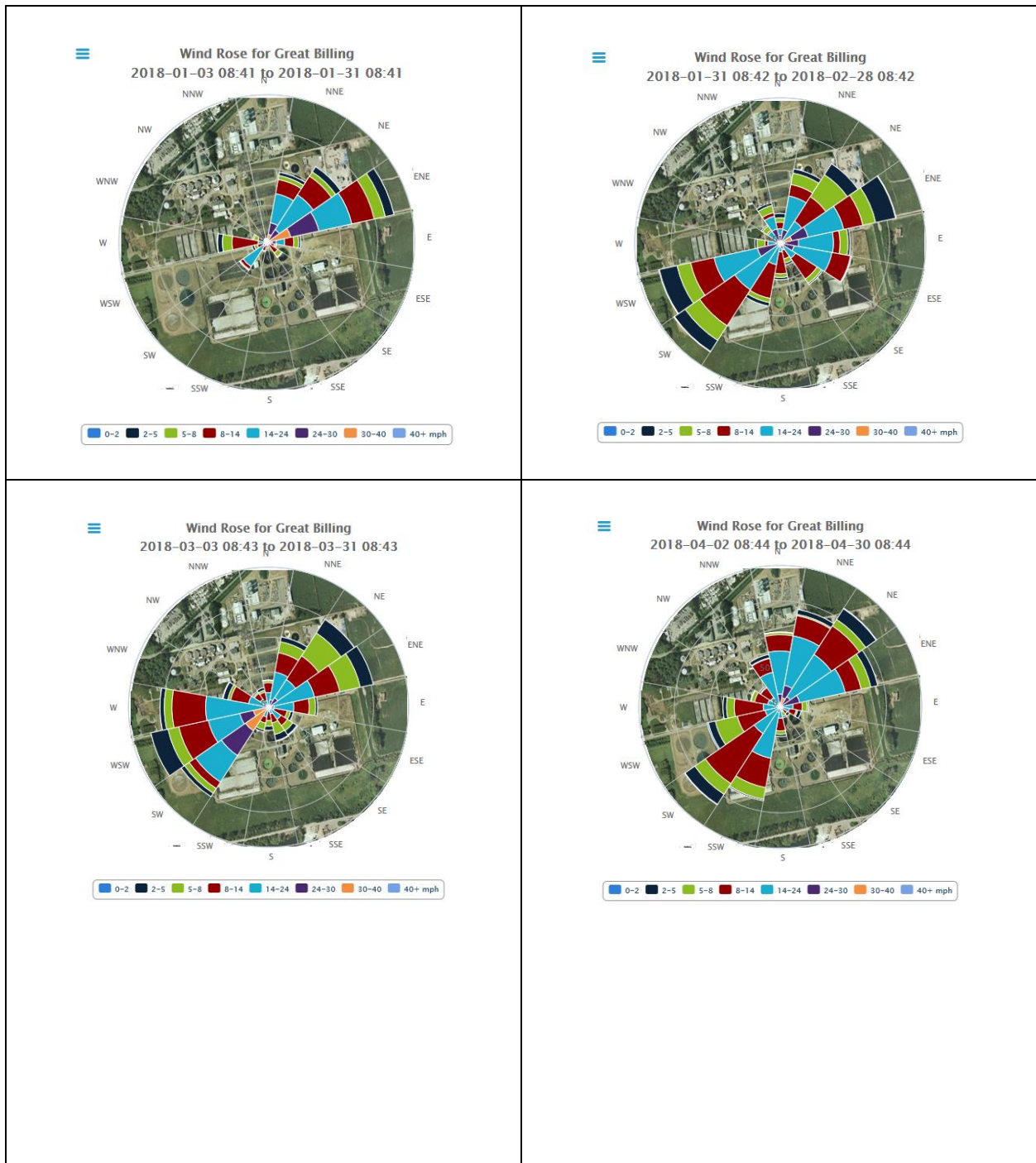
Modelling

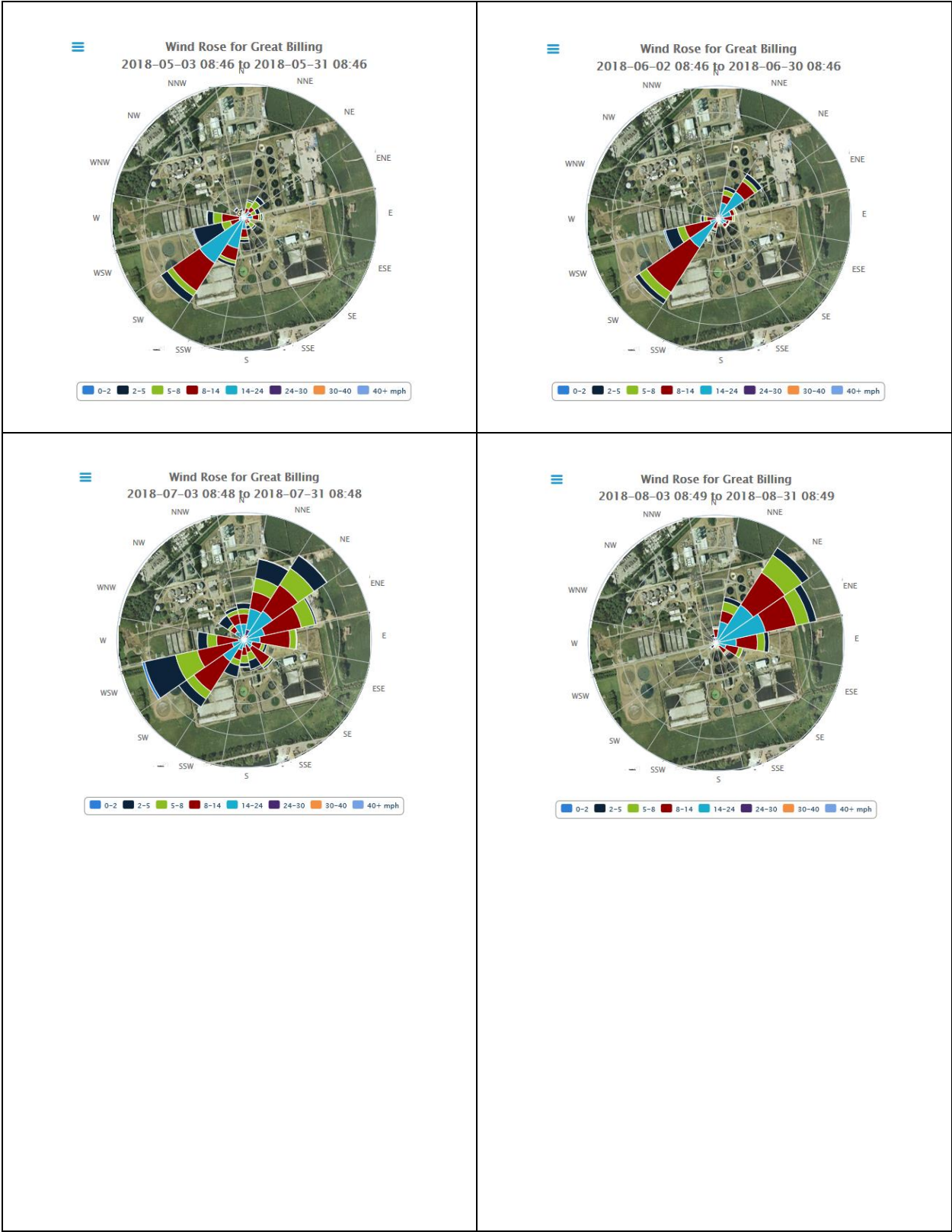
This is the model output using prevailing wind direction and current site operations (completed in 2013). This highlights the key customers likely to be impacted when odour leaves site. No significant changes to operations have taken place since the modelling was undertaken.

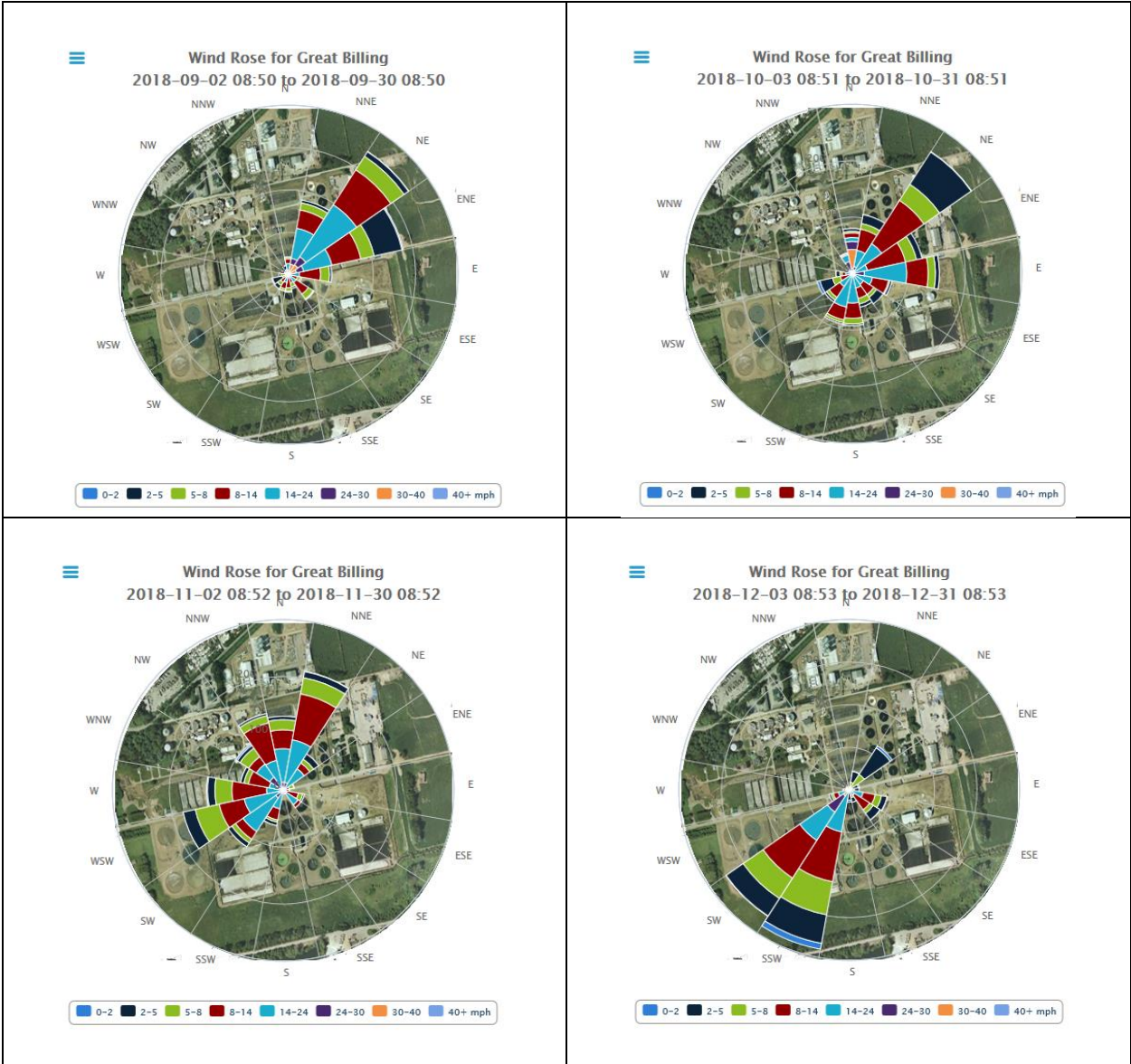


Wind Direction

On site there is a Sky Link Pro weather station (<http://www.skylink-pro.com/index.php>), which provides live weather data and historic records. Below are monthly wind rose charts showing wind direction (blowing to) for 2018.







Monitoring odour on WRC & STC site

The site has a number of potential odour sources.

This site is monitored daily by daily operational staff detecting differences but is also checked monthly by an odour modeller. The results are recorded and saved in location G:\AW_MK_US_RFD\Private\Gt. Billing STW\Compliance\Odour

It is using a Jerome odour meter

SNIFF trained personnel

Causes of odour on site

As an operational site dealing with an inherently odorous material it is to be expected that fluctuating odour levels will be detected when changes to the operational activities, or other disturbances in the process occur. This section will detail, using operational, local and scientific knowledge, areas that we feel should be checked first; together with an explanation for the management control and considerations in each case. This is not an exhaustive list and in some cases further investigation will be required.

	Potential Odour Source	Causes to consider	Control steps to take immediately
1	<p>Inlet works- septic influent. Flows discharging from off-site pumping station and gravity sewerage</p> <p>Earls Barton TPS discharge pipe. Septicity of flows discharging from the trunk sewerage. Open channels carrying sewage.</p>	<p>Turbulence caused by TPS discharge at the inlet.</p> <p>Failure of odour dosing unit</p> <p>Insufficient availability of odour masking chemical</p> <p>Septicity control failure at the TPS</p> <p>Insufficient availability of</p>	<p>In 2008, Earls Barton TPS discharge pipe was extended so that the end of the pipe is below normal sewage levels in the channel, reducing risk of turbulence, aerosols and associated odours.</p> <p>Odour masking, spray nozzles around inlet usually effective at masking odours from this area.</p> <p>Odour log is kept at inlet works to record operation and efficacy of odour masking spray</p> <p>In May 2008, pipework and nozzles replaced.</p> <p>In 2014, septicity control was installed at Earls Barton TPS</p>

		septicity control chemicals	
2	Inlet works- septic tanker discharge point Tanker discharge pipework.	Failure of odour dosing unit Insufficient availability of odour masking chemical	Odour masking, spray nozzles around inlet usually effective at masking odours from this area. In May 2008, pipework and nozzles for odour spray system replaced. Septic tank discharge pipework at inlet works extended in October 2008 to reduce turbulence, aerosols and associated odours
3	Inlet works- coarse screen Skips	Failure of odour dosing unit Insufficient availability of odour masking chemical missed skip collections allowing a backlog of rag to build	Odour masking, spray nozzles around inlet usually effective at masking odours from this area. In 2009 extra pipework and nozzles installed to provide more coverage around these skips
4	Inlet works- fine screen Skips	missed skip collections allowing a backlog of rag to build	Remove from site before screenings become excessively odorous
5	Detritors Grit skips	Availability of grit washing plant Breakdown of tractor trailer for Grit removal on Det. 1	Remove before detritus become excessively odorous

		Missed skip collections on Det. 2	
6	Primary treatment Primary settlement tanks	Carrying too much sludge in the PST's Ferric Sulphate dosing failed Insufficient availability of Ferric Sulphate	Tanks have a large surface area and therefore potential for odour emissions. Reduced operational tanks from 5 to 4 in 2014 has reduced odour potential Ferric sulphate dosing to inlet channel will reduce odour by locking up any free sulphides that may be present in the incoming sewage. Maintaining optimal sludge blanket by desludging at appropriate levels. Controlled by auto desludge system
7	Primary treatment Desludge chambers and sludge transfer pumping station	Covers damaged and/or not fitted. Primary sludge pumps failed	Desludge chambers covered and OCU's fitted in 2009 as part of improvements due to building of new sludge treatment centre.
8	Biological treatment Activated sludge plants- little potential for odour	Process running as normal	None
9	Biological treatment Final settlement tanks- little potential for odour	None	None
10	Surplus activated sludge Gravity belt thickeners- little potential for offensive odour.	Failure of odour control unit	Connected to odour control unit As part of WRC improvements, one extra GBT was installed in 2010

11	Sludge treatment processes Sludge holding tanks T1-T4	Covers damaged or missing Failure of odour control unit	All tanks are covered Connected to an odour control unit
12	Sludge treatment processes 3 strain presses for indigenous primary sludge	Missed skip collections allowing a backlog of rag to build	Remove from site before screenings become excessively odorous
13	Sludge treatment processes Sludge import tank	Covers damaged or missing	Tank covered, odour control system to be specified if necessary following odour measurement
14	Sludge treatment processes Sludge import tank strain press skips	Missed skip collections allowing a backlog of rag to build	Remove from site before screenings become excessively odorous
15	Sludge treatment processes Raw sludge blend tank (pre-belt thickeners)	Covers damaged or missing Failure of odour control unit	Tank covered and connected to odour control unit in 2010
16	Sludge treatment processes Raw sludge thickening belts	Failure of odour control unit	Connected to odour control units
17	Sludge treatment processes Raw sludge thickening belts strain press skips	Missed skip collections allowing a backlog of rag to build	Remove from site before screenings become excessively odorous
18	Sludge treatment processes Digesters- the Whesso valves	Whesso valves being serviced regularly Whesso valves not re-sealing after operating	Whesso valves are a safety feature and only operate in an emergency

19	<p>Sludge treatment processes</p> <p>Inspection chambers on pipeline delivering digested sludge to tank T4</p>	Failure of odour control unit	In May 2008, odour control units were installed on 5 chambers on pipeline.
20	<p>Centrifuge feed tank storage</p> <p>The centrifuge sludge feed holding tank is not covered.</p>	Process running as normal	None
21	<p>Centrifuge Centrate</p> <p>Centrate returns into the treatment process</p>	Process running as normal	Return point is before the PSTs ahead of the treatment processes
22	<p>Sludge cake storage</p> <p>Sludge cake stored in bays.</p>	<p>Missed collections of cake</p> <p>insufficient outlets for cake to be removed to</p>	Storage of cake kept to a minimum, target is always to remove daily make
23	<p>Centrifuge/cake storage</p> <p>Movement of cake.</p>	stockpiles of cake that have built up due to missed collections/outlets	Storage of cake kept to a minimum, target is always to remove daily make
24	<p>Storm tanks</p> <p>When full</p>	Process running as normal	None
25	<p>Storm tanks</p> <p>Delay in cleaning</p>	<p>Availability of personnel that are able to drive the tractor to clean storm tanks</p> <p>availability of the tractor that is used for cleaning</p>	Tanks are cleaned out as soon as practicable once empty

26	Sludge cake reception building	Failure of odour control unit	Cake reception hopper connected to odour control unit
27	Sludge blending tanks (Monsal Feed)	Failure of odour control unit	Connected to odour control unit
28	Sludge cake reception building	<p>Cake reception doors operating</p> <p>Insufficient availability of odour masking chemical</p> <p>Failure of odour control unit</p>	<p>Surfactant sprays to suppress odours, only operate when a lorry is in the building</p> <p>Lorries can only tip cake when the doors to the building are shut to prevent odours escaping into the atmosphere</p>
29	Whole site	Process running as normal	Monthly odour measurements taken and recorded. Copies kept at: G:\AW_MK_US_RFD\Private\Gt. Billing STW\Compliance\Odour

WRC/STC Management decisions involved

The site is operated to maximise efficiency and to ensure compliance with various operational and regulatory thresholds.

Some of the operations on site may, inadvertently, cause an odour to escape, however, this is unavoidable in these circumstances. An example of this would be the Whesso valves operating to relieve the pressure in the gas system to prevent health and safety problems. Our primary concern must be health and safety where our gas systems are concerned. Venting gas through Whesso valves also means we lose the value of that gas. If these valves operate it would be for as short a duration as possible and the odour should be minimal although unavoidable.

When investigating odour on the site it may become clear that the odour arising is caused by an off-site asset, for instance if there is a septicity issue in the network. This can occasionally be caused by a change in the dosing operations within the network and if it was identified as a septicity issue this would be passed to the relevant team within the business and would be removed from site operational control. The solution to this would be to review the dosing. There are a number of factors involved in this assessment and it is outside the site management ownership.

This section will be continually reviewed to address any longer term management changes that may impact the odour profile of the site.

WRC/STC Mitigation on site

To manage odour on site it is required that we understand the profile of the odours.

To that end a model has been carried out, extracts of which have been shared in this document. Any major operational shifts will be run through the model to ensure that the impact on odour is not unforeseen and appropriate mitigation can be included. However it is not practical to run the model for all operational changes.

To manage the day to day fluctuations in odour and operations the site has developed a fortnightly assessment of odour on site. This is the routine checks of odour at points listed as potential odour sources. It is intended that this activity will: a) give us a real data, long term profile of odours on site, b) highlight any points that deteriorate over time through the drifting upwards of odour levels recorded on the Jerome, and c) highlight any point sources that have spiked indicating potentially unidentified operational problems.

It is acknowledged that at times it is difficult for operational staff to detect odour changes, however where this occurs, or where the routine investigation highlights an issue, or a complaint is received the site personnel will use the same Jerome equipment and assess the odours off-site and at the boundary for the segment in which the odour occurs as detailed in the map earlier in this plan.

The intention of this segmented approach is to ensure that there is a recordable odour present in the area of concern and back track the source to our site. This will also involve the wind direction being considered. If the odour is close to the boundary of a segment and the wind direction indicates there is some chance of the odour crossing segments it is expected that the operative carrying out the assessment will include the second segment in their assessment.

All staff will be briefed on this new process and it will be routinely carried out and discussed.

Communications

On receiving a customer complaint we will follow our code of practice.

We will communicate planned activities with the potential to cause odours and any other identified issues on-site, to the following;

Environmental Health	<i>Name</i>	<i>email</i>
Environment Agency	Jane Mossman	jane.mossman@environment-agency.gov.uk
	General Enquires	AN-EPR-waste-suffolk@environment-agency.gov.uk
Anglian Water Customer Service	Customer Issues	CustService@anglianwater.co.uk

Version History

This plan will be reviewed annually with the WRC, STC and Compost teams.

Version	Updated by	Updated on	Changes made
Version 1	J Hay & J Cockings	14/03/2019	Review of plan and transfer to new template
Version 1	C tedder & J grace	16/11/2020	Review of plan