

Watlington Quarry — Environmental Risk Assessment

A117209
November 2021

PRESENTED TO

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1.0 INTRODUCTION

1.1 REPORT CONTEXT

- 1.1.1 This section of the Environmental Permit application corresponds to Section 6 of Part B2 of the Environmental Permit application form, and has been prepared on behalf of the Operator, Mick George Limited (Mick George), by Tetra Tech.
- 1.1.2 Mick George seeks to gain a bespoke waste disposal permit at Watlington Quarry to facilitate the restoration scheme approved under planning permission FUL/2021/0007.
- 1.1.3 This Environmental Risk Assessment is limited to a qualitative assessment of the potential risks to the environment and human health specifically related to the proposed activity. This report will identify any significant risk and demonstrate that the risk of pollution will be acceptable by taking the appropriate measures to manage the risk.

2.0 ENVIRONMENTAL RISK ASSESSMENT

2.1 METHODOLOGY

2.1.1 This report has been prepared following the Environment Agency's Risk Assessment guidance. It specifically relates to the potential risks associated with the following risk types:-

- Odour;
- Noise and vibration;
- Fugitive emissions and
- Accidents and incidents.

2.1.2 This risk assessment addresses the above, and is based on the following methodology:-

- Identification of potential sources of risk;
- Identification of all potential receptors to risk; and
- Risk assessment of each risk type.

2.1.3 The ERA is a tool used to identify the pollutant linkage i.e. source – pathway – receptor. For most risks, the atmosphere is the main pathway and will always exist. Therefore, the ERA deals primarily with the sources and receptors. The ERA is provided in Appendix A of this document and is summarised below.

2.1.4 A 'Nature and Heritage Conservation Screen' (EPR/GB3805FN/A001) was requested from the Environment Agency. The screen determines the presence of any site of nature and heritage conservation, or protected species or habitats that may be impacted by the proposal. A copy of the results is in Appendix B of this document.

2.1.5 The results of the screen identified two local wildlife sites (Tottenhill Village Green and Tottenhill Row Common) and areas of deciduous woodlands which are designated as Priority Habitats.

2.2 SOURCES

2.2.1 The potential sources of risks have been considered for each risk type, as provided in Appendix A of this document and summarised below:-

Odour

- Waste materials.

Noise and vibration

- Engine noise from vehicles;
- Use of reverse vehicle warnings; and
- Use of plant and machinery.

Fugitive emissions

- Particulate matter i.e. dust;
- Scavenging birds, pests and vermin;
- Mud; and
- Litter.

Accidents

- Fire;
- Leaks and spillages;
- Flooding; and
- Unauthorised access.

2.3 PATHWAYS

2.3.1 The pathways have been identified for each risk type as shown in Error! Reference source not found.:

Table 1: Potential Pathways

Risk Type	Pathway
Odour	Atmosphere
Noise and vibration	Atmosphere
Fugitive emissions	Atmosphere
Accidents	Atmosphere
	Surface water run-off
	Infiltration
	Percolation

2.4 RECEPTORS

2.4.1 Receptors within 1km of the proposed application boundary, including those identified in the Nature and Heritage Screen, have been listed in Table 2 and are shown on the Receptor Plan (Drawing Number MGL/A117209/REC/01). The main pathway for the identified sources will be the atmosphere and as such, atmospheric conditions can affect dispersion rates and hence potential risk. As a result, the location of each receptor in relation to the site may influence the potential impact of the risk, as summarised in Table 2.

Table 2: Location of Potential Receptors in relation to waste operations

ID	Receptor	Direction from Operational Area	Minimum Distance from the Permit Application Boundary (approx. m)
Designated ecological habitats/sites of geological importance e.g. Ramsar, SAC, SPA, SSSI, LNR, NNR, LWS			
1	Tottenhill Village Green (LWS)	SE	175
2	Tottenhill Row Common (LWS)	NW	367
Domestic Dwellings			
3	Oak House	N	575
4	Residential area of Tottenhill	SE	193
5	Residential area of Watlington	SW	840
6	Residential area of Tottenhill Row	NW	560
7	Laundry Cottage	NW	460
Commercial and Industrial Premises			
N/A			
Highways or Minor Roads			
8	A10	N	590
9	Watlington Road	N	435
Priority Habitats			
10	Priority Habitat Inventory – Deciduous Woodland	E	Adjacent
11	Priority Habitat Inventory – Deciduous Woodland (Runs Wood)	S	Adjacent
12	Priority Habitat Inventory – Deciduous Woodland	NW	Adjacent
13	Priority Habitat Inventory – Deciduous Woodland (Long Wood)	W	530
14	Priority Habitat Inventory – Deciduous Woodland (Oak Wood)	N	631
15	Priority Habitat Inventory – Deciduous Woodland (The Spinney)	E	440
16	Priority Habitat Inventory – Deciduous Woodland (Willow Holt)	NE	940

17	Priority Habitat Inventory – Deciduous Woodland (Whin Common)	SE	Adjacent
18	Priority Habitat Inventory – Deciduous Woodland	S	300
19	Priority Habitat Inventory – Deciduous Woodland	SE	295
20	Priority Habitat Inventory – Deciduous Woodland	SE	617
21	Priority Habitat Inventory – Deciduous Woodland	S	772
22	Priority Habitat Inventory – Deciduous Woodland	NW	410
23	Priority Habitat Inventory – Deciduous Woodland	NW	565
24	Priority Habitat Inventory – Deciduous Woodland (Davidson's Plantation)	NW	980
25	Priority Habitat Inventory – Traditional Orchard	SW	900
Sensitive land uses e.g. farmland, allotments, commercial fish farms			
26	Woodlands Farm	E	490
27	East Hall Farm	E	894
28	Meadow Farm	SE	720
29	Thieves Bridge Farm	S	975
Surface Water e.g. rivers and streams			
N/A			
Groundwater (sensitivity)			
With reference to the Multi Agency Geographic Information for the Countryside's (MAGIC) website under the Groundwater Vulnerability Map, the site is situated within an area of Medium – Low vulnerability Minor Aquifer High vulnerability but does not lie in a Groundwater Source protection Zone.			
In terms of aquifers, the MAGIC website shows that the site doesn't overlie an aquifer in bedrock however it does overlie a secondary A aquifer in the superficial deposits			

2.5 RISK ASSESSMENT

2.5.1 The ERA (Appendix A) looks at each specific hazard identified and assesses the likelihood of those hazards impacting on the receptors. This is achieved by fulfilling the following objectives:-

- Identify the location and nature of each hazard; Identify the specific receptors potentially at risk and assess the sensitivity of each receptor;
- Provide a qualitative assessment of the risk posed to each sensitive receptor;
- Identify management and monitoring techniques; and
- Provide recommendations for more detailed assessments where necessary.

2.6 SUMMARY OF ERA

- 2.6.1 The ERA (Appendix A) indicates that the proposed inert disposal site will have no significant impacts in terms of odour, noise and vibration, and fugitive emissions, and the likelihood of accidents is minimal.

APPENDICES

APPENDIX A – ENVIRONMENTAL RISK ASSESSMENT

Table A1: Odour Risk Assessment and Management Plan

What do you do that can harm and what could be harmed?			Managing the risk	Assessing the risk		
Hazard	Receptor	Pathway	Risk Management	Probability of Exposure	Consequence	What is the overall risk?
What has the potential to cause harm?	What is at risk? What do I wish to protect?	How can the hazard get to the receptor?	What measures will you take to reduce the risk? If it occurs – who is responsible for what?	How likely is this contact?	What is the harm that can be caused?	What is the risk that still remains? The balance of probability and consequence.
Receipt and storage of odorous wastes	Occupiers of domestic dwellings listed in Table 2 above.	Atmosphere	<p>The proposed waste types are not putrescible and therefore will not biodegrade to produce offensive odours.</p> <p>There will be strict waste acceptance procedures in place to minimise the risk of non-compliant wastes being accepted. Details of the waste acceptance procedures are provided in the Operating Techniques (Appendix B of the Environmental Permit Application).</p> <p>All site operatives will be vigilant with regard to identifying non-compliant wastes and any non-conformances or odour issues will be reported to the Site Manager.</p>	Unlikely due to the nature of the proposed waste types and the measures in place.	Odour annoyance	Not significant due to management techniques employed.

Table A2: Noise Risk Assessment and Management Plan

What do you do that can harm and what could be harmed?			Managing the risk	Assessing the risk		
Hazard	Receptor	Pathway	Risk Management	Probability of Exposure	Consequence	What is the overall risk?
What has the potential to cause harm?	What is at risk? What do I wish to protect?	How can the hazard get to the receptor?	What measures will you take to reduce the risk? If it occurs – who is responsible for what?	How likely is this contact?	What is the harm that can be caused?	What is the risk that still remains? The balance of probability and consequence.
Vehicle movements on site and haul roads.	Occupiers of domestic dwellings listed in Table 2 above. Priority Habitats listed in Table 2 above. Agricultural land listed in Table 2 above. Local Wildlife Sites listed in Table 2 above.	Atmosphere.	<p>Loads will only be delivered to the site during the hours stipulated (07:00 – 19:00 Monday – Friday and 07:00-13:00 on Saturdays) in the planning permission.</p> <p>The delivery of waste will take place in a controlled manner to keep noise/vibration to a minimum.</p> <p>As shown the working plans, a number of screening bunds will be placed along the northern, southern and eastern perimeter of the site using soils that will be stripped from the site. This will minimise the potential for noise to impact receptors that are situated beyond the site boundary.</p> <p>All plant and machinery will have effective silencers where practicable and be maintained in accordance with the manufacturer’s requirements to minimise the risk of mechanical failure which could result in increased noise emissions.</p> <p>All equipment and vehicles when not in regular use shall be switched off.</p> <p>All noise and vibration generating activity will be monitored closely and site operatives will be vigilant and report any excessive noise or vibration issues to the Site Manager.</p>	Intermittent during operating hours.	Intermittent noise and vibration disturbance.	Not significant due to management techniques employed.

<p>Noise from reverse vehicle warnings</p>	<p>Occupiers of domestic dwellings listed in Table 2 above. Priority Habitats listed in Table 2 above. Agricultural land listed in Table 2 above. Local Wildlife Sites listed in Table 2 above.</p>	<p>Atmosphere.</p>	<p>All vehicles will utilise low level reversing signals where possible. As shown the Working plan, a number of screening bunds will be placed along the northern, southern and eastern perimeter of the site using soils that will be stripped from the site. This will minimise the potential for noise to impact receptors that are situated beyond the site boundary. All noise generating activities will be monitored closely and site operatives will be vigilant and report any excessive noise or vibration issues to the Site Manager. Further details regarding noise management can be found in the Noise and Vibration Management Plan that accompanies this application as Appendix F.</p>	<p>Unlikely due to measures in place.</p>	<p>Intermittent noise and vibration disturbance.</p>	<p>Not significant due to management techniques employed.</p>
<p>Noise from the loading/unloading of wastes</p>	<p>Occupiers of domestic dwellings listed in Table 2 above. Priority Habitats listed in Table 2 above. Agricultural land listed in Table 2 above. Local Wildlife Sites listed in Table 2 above.</p>	<p>Atmosphere.</p>	<p>All noise and vibration generating activities will be confined to the operating hours permitted in the Planning Permission, except for emergency repairs. As shown the Working plan, a number of screening bunds will be placed along the northern, southern and eastern perimeter of the site using soils that will be stripped from the site. This will minimise the potential for noise to impact receptors that are situated beyond the site boundary. The loading/unloading of waste will be undertaken in a controlled manner to keep noise/vibration to a minimum. Drop heights will be minimised to reduce the generation of noise. All noise generating activities will be monitored closely and site operatives will be vigilant and report any excessive noise or vibration issues to the Site Manager. Further details regarding noise management can be found in the Noise and Vibration Management Plan that accompanies this application as Appendix F.</p>	<p>Intermittent during operating hours.</p>	<p>Intermittent noise and vibration disturbance.</p>	<p>Not significant due to management techniques employed.</p>
<p>Noise from general plant and machinery</p>	<p>Occupiers of domestic dwellings listed in Table 2 above.</p>	<p>Atmosphere.</p>	<p>All noise and vibration generating activities will be confined to the operating hours permitted in the Planning Permission, except for emergency repairs. As shown the Working plan, a number of screening bunds will be placed along the northern, southern and eastern</p>	<p>Intermittent during operating hours.</p>	<p>Intermittent noise and vibration disturbance.</p>	<p>Not significant due to management techniques employed.</p>

<p>Priority Habitats listed in Table 2 above.</p> <p>Agricultural land listed in Table 2 above.</p> <p>Local Wildlife Sites listed in Table 2 above.</p>		<p>perimeter of the site using soils that will be stripped from the site. This will minimise the potential for noise to impact receptors that are situated beyond the site boundary.</p> <p>All plant and machinery will have effective silencers where practicable and be maintained in accordance with the manufacturer’s requirements. Utilisation of low level warning signals.</p> <p>All equipment and vehicles, when not in regular use, shall be switched off.</p> <p>All noise generating activities will be monitored closely and site operatives will be vigilant and report any excessive noise or vibration issues to the Site Manager.</p> <p>Further details regarding noise management can be found in the Noise and Vibration Management Plan that accompanies this application as Appendix F.</p>			
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Table A3: Fugitive Emissions Risk Assessment and Management Plan

What do you do that can harm and what could be harmed?			Managing the risk	Assessing the risk		
Hazard	Receptor	Pathway	Risk Management	Probability of Exposure	Consequence	What is the overall risk?
What has the potential to cause harm?	What is at risk? What do I wish to protect?		What measures will you take to reduce the risk? If it occurs – who is responsible for what?	How likely is this contact?	What is the harm that can be caused?	What is the risk that still remains? The balance of probability and consequence.
To Air						
Dust emissions from vehicles movements Dust generated during loading/unloading of waste Acceptance of dusty wastes Dust from screening bunds	Occupiers of domestic dwellings listed in Table 2 above. Priority Habitats listed in Table 2 above. Agricultural land listed in Table 2. Local Wildlife Sites listed in Table 2 above.	Atmosphere	Dust emissions will be managed in accordance with the Dust Management Plan that’s accompanies this environmental permit application as Appendix E. This document identifies the potential causes and effects of dust and describes the measures that will be in place to prevent the occurrence of dust at the site	Dust could potentially reach the nearby dwellings when a strong wind blows in their direction. Management actions outlined in the Dust Management Plan should prevent this happening.	Local nuisance – dust on cars, clothing, vegetation, etc. Smothering. Nutrient enrichment.	Not significant due to management techniques employed via the Dust Management Plan.
To Water						
Contaminated rainwater run-off.	Groundwater & Surface water Occupiers of domestic dwellings	Direct surface water run-off from site. Infiltration. Percolation.	The proposed waste types are inert and therefore non-hazardous. As such, any run off that is generated on site will simply be rainwater which has passed through inert soils and therefore is not likely to be hazardous. There will be strict waste acceptance procedures in place at the site to prevent the acceptance of non-conforming waste types. Details of these procedures are	Unlikely due to the nature of the proposed wastes types and the measures in place.	Contamination of surface water bodies and groundwater.	Not significant due to management techniques employed and the inert nature of the waste types.

	listed in Table 2.		detailed in the Operating Techniques (Appendix B of this Environmental Permit Application).			
Pests/Scavenging birds						
Birds and Pests.	Occupiers of domestic dwellings listed in Table 2 above. Priority Habitats listed in Table 2 above. Agricultural land listed in Table 2. Local Wildlife Sites listed in Table 2 above.	Air. Ground.	The proposed waste types are not putrescible and will not attract pests, vermin and/or scavenging birds. Strict waste acceptance procedures will be in place to ensure only permitted waste types are accepted. Details of these procedures are provided in the Operating Techniques (Appendix B of this Environmental Permit Application). The Site Manager will undertake regular reviews of pests and scavenging birds at the site. All site operatives will be vigilant and report any problems to the Site Manager.	Very unlikely.	Nuisance to local residents. Predation of species in Priority Habitats and Local Wildlife Site.	Not significant due to management techniques employed and the inert nature of the waste types.
Mud						
Mud arising from vehicles movements	Highways identified in Table 2.	Tracked by vehicles.	Any waste vehicles that gather significant amounts of mud will be dampened or washed as and when necessary. The amount of mud on local roads will monitored daily by site operatives. In the event that mud is deposited on the access road and/or highway then a road sweeper will be employed if necessary.	Unlikely due to measures in place.	Mud on roads is unsightly and can increase the risk of road traffic incidents.	Not significant due to management techniques employed.
Litter						
Litter arising from vehicle movements and high winds.	All receptors identified in Table 2.	Air Tracked by vehicles.	Due to the nature of the proposed waste types, litter will not be generated at the site. The proposed waste types are not considered to represent a significant risk of litter.	Very unlikely due to measures in place.	Local nuisance.	Not significant due to the inert nature of waste received and management

			<p>Strict waste acceptance procedures will be in place to ensure only permitted waste types are accepted. Details of these procedures are provided in the Operating Techniques (Appendix B of this Environmental Permit Application).</p> <p>A vigilant watch for litter will be undertaken by site operatives. In the unlikely event that litter is generated by the activity, the Site Supervisor will implement a litter collection as necessary.</p>			<p>techniques employed.</p>
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Table A4: Accident and Incident Risk Assessment and Management Plan

What do you do that can harm and what could be harmed?			Managing the risk	Assessing the risk		
Hazard	Receptor	Pathway	Risk Management	Probability of Exposure	Consequence	What is the overall risk?
What has the potential to cause harm?	What is at risk? What do I wish to protect?	How can the hazard get to the receptor?	What measures will you take to reduce the risk? If it occurs – who is responsible for what?	How likely is this contact?	What is the harm that can be caused?	What is the risk that still remains? The balance of probability and consequence.
Fire or failure to contain firewater.	Groundwater. Surface water features identified in Table 2. Occupiers of domestic dwellings listed in Table 2 above. Priority Habitats listed in Table 2 above. Agricultural land listed in Table 2. Local Wildlife Sites listed in Table 2 above.	Infiltration. Contaminated rainwater runoff.	The risk of fire is considered to be low as the proposed waste types are not flammable. There will be strict waste acceptance procedures in place to minimise the risk of non-compliant wastes being accepted which may be combustible in nature. Details of the waste acceptance procedures are provided in the Operating Techniques (Appendix B of this Environmental Permit Application). The Operator will undertake routine maintenance of all equipment in accordance with the manufacturer’s guidance. This will minimise the risk of mechanical failure which may result in an increased risk of combustion. Site notices and training will be undertaken regarding fire hazards. The Site Manager will be responsible for actions undertaken in the event of a fire.	Very unlikely due to the nature of the waste types and the measures in place.	Contamination of local groundwater and/or surface water. Local nuisance from smoke.	Not significant due to the inert nature of waste types and likelihood of a fire on site.
Leaks/spillages of fuel/oil.	Groundwater. Surface waters identified in Table 2.	Surface run-off. Infiltration. Percolation	The operator will undertake regular maintenance of plant equipment in accordance with manufacturer’s guidance. This will minimise the risk of mechanical failure which may result in leaks. All fuel, oil and lubricants will be contained within appropriate 110% bunded tanks. The tanks will be maintained and inspected in	Unlikely due to measures in place.	Contamination of land and watercourses.	Not significant due to management techniques employed.

			<p>accordance with the manufacturer's recommendations.</p> <p>Daily vehicle / plant checks to ensure any fuel/oil leaks etc. are repaired as soon as possible.</p> <p>The Site Manager will be responsible for ensuring effective remediation and documenting any incident.</p>			
Flooding.	<p>Groundwater.</p> <p>Surface water bodies identified in Table 2.</p>	<p>Infiltration.</p> <p>Contaminated surface water runoff.</p>	<p>The proposed activity will not result in an increase of impermeable surfacing and therefore will not increase the risk flooding.</p>	<p>Unlikely due to measures in place.</p>	<p>Disruption to works on site.</p> <p>Contamination of local groundwater and/or surface water.</p> <p>Contamination of local agricultural land.</p>	<p>Not significant due to the management techniques employed.</p>
Vandalism.	<p>Groundwater.</p> <p>Surface water features identified in Table 2.</p> <p>Occupiers of domestic dwellings listed in Table 2 above.</p> <p>Priority Habitats listed in Table 2 above.</p> <p>Agricultural land listed in Table 2.</p> <p>Local Wildlife Sites listed in Table 2 above.</p>	<p>Unauthorised entry to the site.</p>	<p>The site is surrounded by security fencing and site entrances are protected by lockable gates, which are kept locked outside of operating hours.</p> <p>The security fencing and gates will be inspected on a regular basis. Any identified damage to the fence or gates that could compromise the site security will be recorded and temporarily repaired as necessary before the end of that working day. Permanent repair or replacement will be undertaken as soon as practicable.</p> <p>There will be procedures in place which will require all visitors to the site to sign in on arrival and sign out on departure.</p>	<p>Unlikely due to measures in place.</p>	<p>Release of polluting materials to air (smokes or fumes) water or land.</p>	<p>Not significant due to management techniques employed.</p>

APPENDIX B

Nature and Heritage Conservation Screen EPR/GB3805FN/A001

Nature and Heritage Conservation

Screening Report: Bespoke waste

Reference	EPR/GB3805FN/A001
NGR	TF 63536 11427
Buffer (m)	362
Date report produced	30/04/2020
Number of maps enclosed	2

The nature and heritage conservation sites and/or protected species and habitats identified in the table below must be considered in your application.

Nature and heritage conservation sites	Screening distance (m)	Further Information
Local Wildlife Sites (LWS) Tottenham Village Green Tottenham Row Common	200	Appropriate Local Record Centre (LRC)

Protected Habitats	Screening distance (m)	Further Information
Deciduous woodland	up to 500m	Natural England

Where protected species are present, a licence may be required from [Natural England](#) to handle the species or undertake the proposed works.

The relevant Local Records Centre must be contacted for information on the features within local wildlife sites. A small administration charge may also be incurred for this service.

Please note we have screened this application for protected and priority sites, habitats and species for which we have information. It is however your responsibility to comply with all environmental and

planning legislation, this information does not imply that no other checks or permissions will be required.

Please note, the enclosed pre-application map(s) is valid for a period of **6 months**. If you plan to submit your application more than 6 months after the map(s) was generated, you must request that the screen is re-run. This will ensure that you have used the most current information on heritage and nature conservation interests in your application.

customer service line
03708 506 506

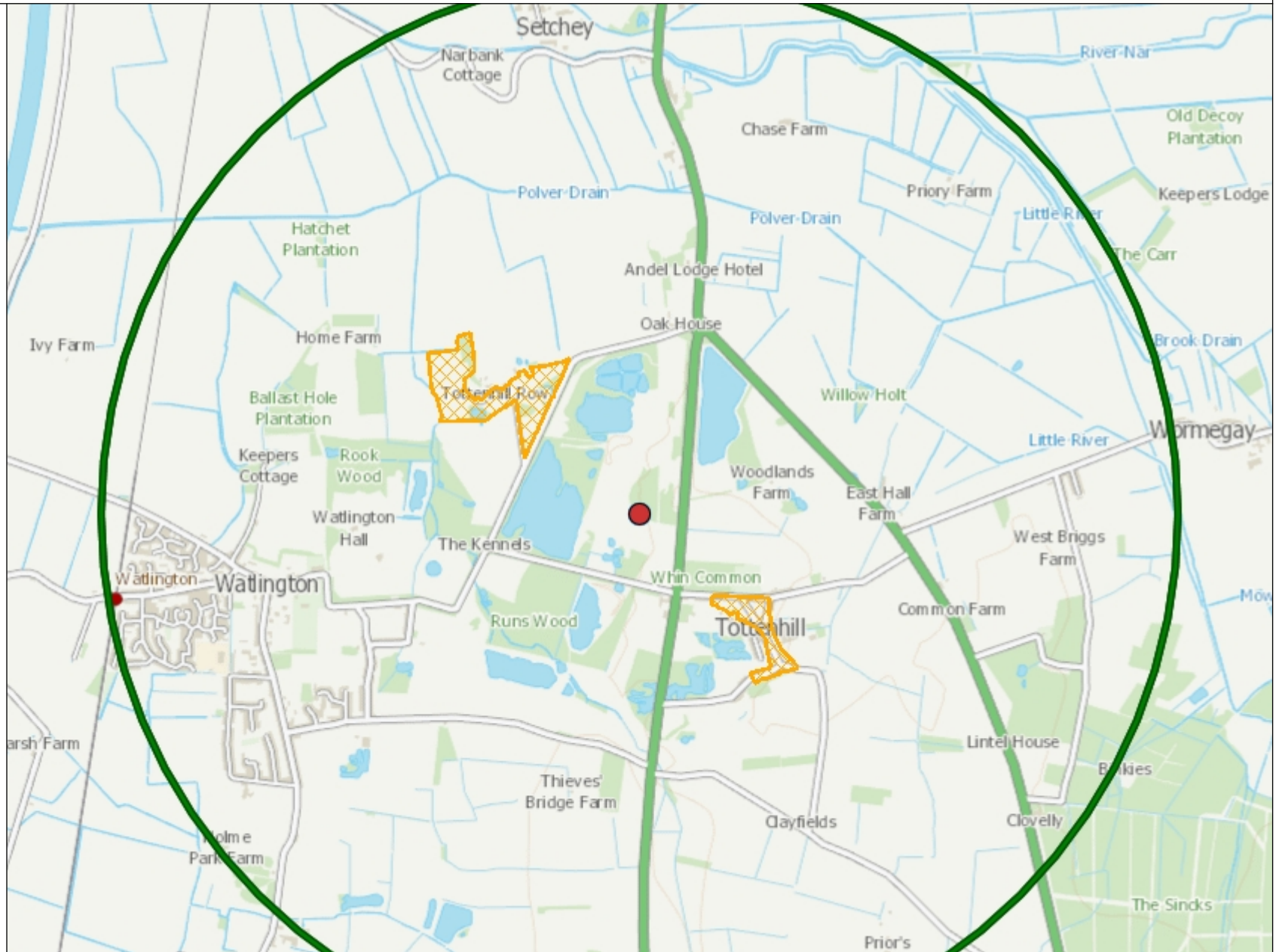
incident hotline
0800 80 70 60

floodline
0845 988 1188

www.environment-agency.gov.uk

Legend

 Local Wildlife Sites



1: 25,000


0 625

Metres



Protected habitats

Legend

-  Protected Habitats screened for En Permits

