

CAULMERT LIMITED

Engineering, Environmental & Planning
Consultancy Services

Wootton Landfill Site
Viridor Waste Wootton Limited

Amenity and Accidents Risk Assessment

Methane Stripping Plant

Environmental Permit Variation Application

Prepared by:

Caulmert Limited

14 Farrington Way, Eastwood Link Business Park, Eastwood, Notts, NG16 3BF

Tel: 01773 749132

Fax: 01773 746280

Email: andystocks@caulmert.com

Web: www.caulmert.com

Doc ref: 4898-CAU-XX-XX-RP-V-0306.A0.C1

August 2021



APPROVAL RECORD

Site: Wootton Landfill Site

Client: Viridor Waste Wootton Limited

Project Title: Environmental Permit Variation

Document Title: Amenity and Accidents Risk Assessment

Document Ref: 4898-CAU-XX-XX-RP-V-0306.A0.C1

Report Status: **Final**

Project Manager: Andy Stocks

Caulmert Limited: 14 Farrington Way, Eastwood Link Business park, Eastwood, Notts, NG163BF

Tel: 01773 749132

Author	Samantha Bowler Environmental Consultant	Date	02/08/2021
Reviewer	Kellie-Marie Burston Senior Environmental Consultant	Date	02/08/2021
Approved	Andy Stocks Associate Director	Date	02/08/2021

DISCLAIMER

This report has been prepared by Caulmert Limited with all reasonable skill, care and diligence in accordance with the instruction of the above-named client and within the terms and conditions of the Contract with the Client.

The report is for the sole use of the above-named Client and Caulmert Limited shall not be held responsible for any use of the report or its content for any purpose other than that for which it was prepared and provided to the Client.

Caulmert Limited accepts no responsibility of whatever nature to any third parties who may have been made aware of or have acted in the knowledge of the report or its contents.

No part of this document may be copied or reproduced without the prior written approval of Caulmert Limited.

TABLE OF CONTENTS

1. INTRODUCTION	1
1.1 Report Overview	1
2. SITE LOCATION & SETTING	1
2.1 Site Location.....	1
2.2 Site Setting	1
3. SENSITIVE RECEPTORS.....	1
3.1 Overview	1
3.2 Commercial and Industrial.....	1
3.3 Residential & Recreational.....	1
3.4 Public Roads and Footpaths.....	2
3.5 Agriculture.....	2
3.6 Surface Water	2
3.7 Designated Sites of Ecological Importance & Other Habitats.....	2
3.8 Other	2
3.9 Summary of Identified Receptors	3
3.10 Meteorological Setting.....	4
4. RISK ASSESSMENTS	6
4.1 Assessments for the Proposed Operations.....	6
4.2 Risk Assessments	6
5. CONCLUSION	20
6. REFERENCES.....	21

TABLES

Table 1:	Summary of Sensitive Receptors within 1km of the Site
Table 2:	Odour risk assessment
Table 3:	Noise risk assessment
Table 4:	Fugitive emissions risk assessment
Table 5:	Visible plumes assessment
Table 6:	Accidents risk assessment

DRAWINGS

4898-CAU-XX-XX-DR-V-1800 Sensitive Receptors Plan

1. INTRODUCTION

1.1 Report Overview

- 1.1.1 This report is an Amenity and Accidents Risk Assessment for the proposed installation of a Methane Stripping Plant (MSP) at Wootton Landfill Site (hereafter referred to as 'the Site'). Caulmert Limited have been appointed by Viridor Waste Wootton Limited ('the Operator') to prepare this assessment as part of the environmental permit variation application for the Site.
- 1.1.2 The purpose of the permit variation is to vary the existing permit: EPR/UP3795NQ, to include for the installation of a new Methane Stripping Plant (MSP) with a capacity of less than 50 tonnes per day at Wootton Landfill Site. This will enable treated leachate effluent (non-hazardous) from the closed landfill to be discharged via foul sewer and piped to the nearby wastewater treatment works operated by Anglian Water Services Limited, under an existing trade effluent discharge consent, issued in 2009.
- 1.1.3 The proposed MSP will sit within an existing small rectangular compound in the north-western area of the permit boundary of Wootton Landfill Site.
- 1.1.4 This risk assessment has been compiled in accordance with the current 'Risk Assessments for your Environmental Permit' Environment Agency guidance (updated 10th December 2020).

2. SITE LOCATION & SETTING

2.1 Site Location

- 2.1.1 The Site is located on the A508 Southbound (London Road), in the Collingtree area of Northampton, postcode NN4 0LY, and lies 350m north-northeast of Junction 15 of the M1 motorway. The site location is shown in Figure 1 below:

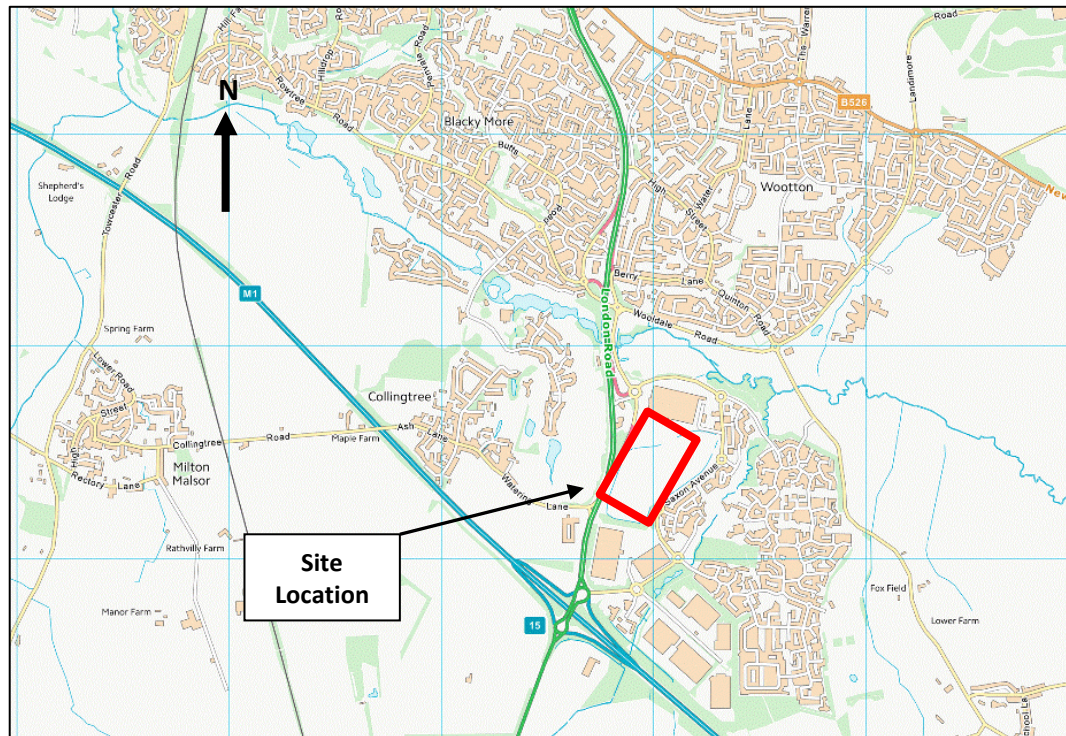


Figure 1 – Site Location

- 2.1.2 Wootton Landfill Site is a fully capped closed landfill site which formerly accepted non-hazardous wastes that is now undergoing restoration and currently permitted to accept a maximum of 50,000 tonnes of restoration materials per year.

2.2 Site Setting

- 2.2.1 Immediately adjacent to the Site is a public access road (London Road) to the west, an industrial depot to the north, Saxon Avenue and adjoining residential area to the east and a few industrial depots (including Clipper Logistics PLC) to the south.
- 2.2.2 There are a number of populated areas in the general vicinity of the Site, including the area of Grange Park (immediately adjacent on the eastern boundary), Collingtree village (350m west) and Wootton (600m north), all situated on the southern outskirts of Northampton.
- 2.2.3 Approximately 350m south of the Site is the M1 motorway, beyond which are extensive agricultural fields.

3. SENSITIVE RECEPTORS

3.1 Overview

3.1.1 The Site is situated within a very small industrial pocket bound to the south by Northampton Commercial Park and the M1 motorway. Wootton Landfill Site is surrounded to the east and north by residential areas, located on the southern outskirts of Northampton.

3.1.2 This ARA reviews the risk of nearby and sensitive receptors measured from the boundary of the MSP compound within the footprint of Wootton Landfill Site.

3.1.3 A search using Defra's Online Portal Magic Maps identified numerous sensitive receptors within a radius of 1km of the proposed MSP location and are listed below in the following categories:

- Commercial and Industrial;
- Residential and Recreational;
- Public Roads and Footpaths;
- Surface Water;
- Agriculture; and,
- Designated Sites of Ecological Importance & Other Habitats.

3.1.4 The location of the proposed MSP in relation to nearby sensitive receptors is shown on the Sensitive Receptor Plan drawing ref. 4898-CAU-XX-XX-DR-V-1800, and a summary of all identified receptors is presented in Table 1 below.

3.2 Commercial and Industrial

3.2.1 There are numerous logistics depots with lorry parks located to the east and south of the site, and commercial offices, as part of Northampton Commercial Park, just north of Junction 15 of the M1 motorway.

3.2.2 There are two fuel stations/garages located 50m and 940m northwest of the site, operated by BP and Shell respectively.

3.2.3 There are numerous hotels within 1km of the site, likely associated with the motorway.

3.3 Residential & Recreational

3.3.1 The residential areas of Wootton (610m north), Collingtree village (370m west) and Grange Park (320m east) surround the site, with associated schools, community centre, church and care home. There are no hospitals within 1km of the site.

3.3.2 Collingtree Park Golf Club, an extensive golf course with ponds and footpaths is located 50m west, across the A508 road, and extends to over 920m to the northwest of the site.

3.3.3 There are allotment gardens located within Collingwood to the west and also Grange Park to the east.

3.3.4 Collingtree Tennis Club and playing field is located 430m to the southwest and a leisure centre is located 800m to the northwest.

3.4 Public Roads and Footpaths

3.4.1 The adjacent access road (London Road) is located immediately to the west of the Site which links southwards to the A508 road along the Site boundary. This leads down to Junction 15 of the M1 motorway. There are also numerous roads around site within the residential areas.

3.4.2 There are numerous footpaths in a parkland area 300m north of the Site and also around the golf course, located 50m to the west.

3.5 Agriculture

3.5.1 There are agricultural fields located 450m to the southwest near the M1 motorway and 900m to the northeast, to the north of Grange Park.

3.6 Surface Water

3.6.1 There are surface water drains around the landfill less than 15m southeast of the location of the proposed MSP.

3.6.2 Large ponds associated with Collingtree Park Golf Course are 335m west, 470m west and 500m northwest at their closest points and link to a weir and field drains.

3.7 Designated Sites of Ecological Importance & Other Habitats

3.7.1 There are 8 small areas of Priority Habitat Deciduous Woodland within 1km of the site. They are located 440m to the northeast, 540m to the east, 600m to the southeast, 340m to the south, 610m to the southwest, 560m and 840m to the east-northeast, and 460m to the northwest.

3.7.2 There are no Sites of Special Scientific Interest (SSSIs) within 2km of the centre of the site, with the closest, Roade Cutting SSSI, over 2.5km to the southwest.

3.7.3 There are no Areas of Outstanding Natural Beauty (AONBs), Special Areas of Conservation (SACs), Local Nature Reserves (LNRs), Local Wildlife Sites (LWSs), National Nature Reserves (NNRs), Ramsar sites or Special Protection Areas (SPAs) within 2km of the site.

3.8 Other

3.8.1 There are no World Heritage Sites or Scheduled Monuments within 2km of the site. There are no Source Protection Zones (SPAs) within 2km of the site.

3.8.2 There are two Air Quality Management Areas (AQMAs) within 1km of the site:

- The Northampton AQMA No.1 declared on 06/01/2003 for Nitrogen Dioxide (NO₂ Annual Mean) which runs alongside the southbound carriageway of the M1 motorway within the boundaries of Northampton Borough Council, varying between 40 and 54m from the central reservation. This is located 720m to the southwest of the site.
- The Northampton AQMA No.5 declared on 16/04/2009 for Nitrogen dioxide (NO₂ Annual Mean) covering the areas of Wootton Hall Park, Cottesbrooke Gardens, Hermitage Ways, Stratford Drive and Chestnut Avenue, close to the A45 London Road. This is located approximately 990m to the north of the site.

3.9 Summary of Identified Receptors

3.9.1 The sensitive receptors identified within 1km of the site are presented below in Table 1:

Table 1 – Summary of Sensitive Receptors within 1km of the Site

Receptor	Land Use	Distance/Direction
London Road / A508 road	Public Road	0m W
Field Drain	Surface Water	<15m SE
Collingtree Park Golf Club	Recreational	50m W
Grange Farm Service Station - BP	Industrial / Commercial	50m NW
Public footpaths on golf course	Public Path / Access	50m W
Zara Logistics Hub	Industrial / Commercial	80m NNW
Bridge Meadow Way	Public Road	230m N
Public footpaths in green space	Public Path / Access	300m N
Grange Park residential area	Residential	320m E & SE
Large ponds on golf course with weir	Surface Water	335m W, 470m W & 500m NW
8 Areas of deciduous woodland	Habitat	340m S, 440m NE, 460m NW, 540m E, 560m ENE, 600m SE, 610m SW, 840m ENE
Saxon Avenue	Public Road	340m E
Collingtree residential area	Residential	370m W & NW
Commercial offices	Industrial / Commercial	390m NW
Amazon Logistics Hub	Industrial / Commercial	400m S
Hilton Hotel	Commercial	410m SW
Commercial offices / business park	Industrial / Commercial	430m E
Collingtree Tennis Club & fields	Recreational	430m SW
Grange Inn public house	Recreational	430m E
Agricultural fields	Agricultural	450m SW & 830m S
Field Drain	Surface Water	520m NE

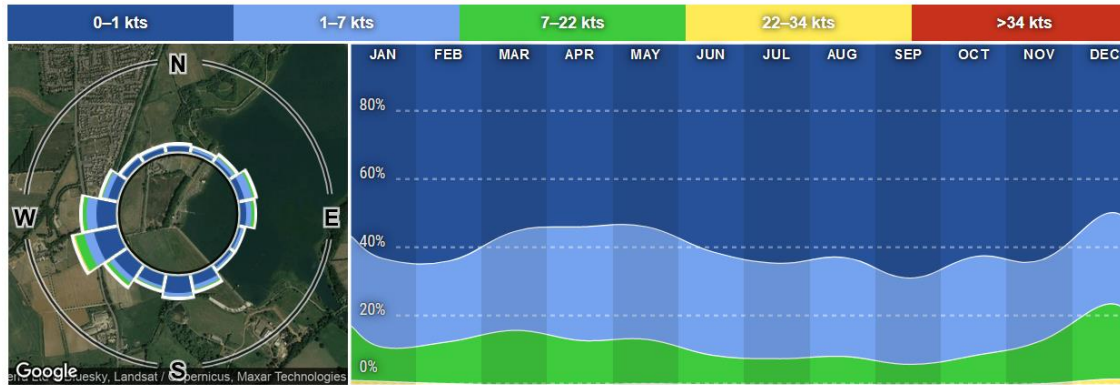
Receptor	Land Use	Distance/Direction
Collingtree Care Home	Residential	535 NW
Grange Park Community Centre	Residential	560m SE
Woodland View Primary School	Residential	570m SE
Allotment gardens	Recreational	570m SW & 800m E
Wooldale Road	Public Road	600m N
Wootton residential area	Residential	610m N
Other logistics hubs (business park)	Industrial / Commercial	700m SE
Collingtree Primary School	Residential	720m WNW
Holiday Inn Hotel	Commercial	765m S
Campanile Hotel	Commercial	765m S
M1 motorway	Public Road	790 SSW
Travelodge Hotel	Commercial	800 NNW
Leisure Centre	Recreational	800m NW
Saint Columba Parish church	Recreational	810m WNW
Agricultural fields	Agricultural	900m NE
Golf Club - Club House	Recreational	920m NW
Shell Fuel Garage	Industrial / Commercial	940m NNW

3.10 Meteorological Setting

- 3.10.1 Fugitive emissions of dust, litter, odour and noise from the Site are likely to be affected by local weather conditions, in particular by wind direction.
- 3.10.2 Wind statistics observed from Pitsford Reservoir weather station to the north of Northampton (located 13.6km north of the Site) is considered to be representative of the typical conditions at the Site (Figure 1. below). A review of the data recorded daily between 2015 and 2021 on the Windfinder.com website indicates that the most dominant wind direction is from the west-southwest towards the east-northeast.
- 3.10.3 The sensitive receptor plan shows that predominant wind conditions are likely to blow from site towards the Zara Logistics Depot to the north and the residential area of Grange Park, the commercial office buildings and the allotment gardens in the east north-east.

Figure 1 – Pitsford Reservoir wind statistics – average annual wind direction & strength between 2015 and 2021

Wind direction and strength distribution



4. RISK ASSESSMENTS

4.1 Assessments for the Proposed Operations

4.1.1 Risk assessment tables have been completed for odour, noise and vibration, fugitive emissions (dust, litter, mud and debris, pests and surface water run-off), visible plumes and accidents in line with the GOV.UK guidance 'risk assessments for your environmental permit' (updated 10th December 2020).

4.2 Risk Assessments

4.2.1 Possible hazards as a result of the proposed operations at the site that require risk assessment comprise:

- Sources of Odour (Table 2);
- Sources of Noise and Vibration (Table 3);
- Fugitive Emissions (dust, litter, mud and debris, pests, surface water run-off) (Table 4);
- Visible emissions (smoke or visible plumes) (Table 5); and,
- Accidents (leaks and spillages, fire etc.) (Table 6).

4.2.2 The hazards identified above have the potential to escape beyond the permit boundary and cause an amenity nuisance to sensitive receptors or harm the environment and human health. For each possible hazard, an assessment of the risk that it poses to potential sensitive receptors has been carried out, taking into account the control measures that will be in place.

4.2.3 The following Tables 2 to 6 give further detail on each hazard source, pathway and sensitive receptor, the risk management measures to be implemented, probability of exposure, consequences of exposure and an overall risk rating from Low (little or no risk) to High, once all risk management measures have been taken into account.

Table 2 - Odour Risk Assessment

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
Odour from leachate storage & methane stripping plant	Local human population in Grange Park residences, particularly off Saxon Avenue to ENE Nearby commercial premises including users of petrol station to NW and logistics depot to N and S Users of public domestic roads and footpaths	Through air	Raw leachate will be pumped via sealed pipework directly from the existing raw leachate tanks via a duty/standby progressing cavity (PC) feed pump into the MSP. Raw leachate will enter each reaction tank at the top and flow downwards, exiting via a pipe carrying liquid up into the next tank and eventually the de-gassing tank. Treated leachate is then discharged to sewer by pump via sealed pipework. There is a very low potential for odour release from untreated leachate as tanks are sealed. It is not anticipated that odours will be detected beyond the permit boundary. There will be adequate volumes of air used during the methane stripping process to ensure methane concentrations in the exhaust gases will be minimal and well below explosive limits. The planned preventive maintenance (PPM) programme for the new plant will also include regular maintenance to ensure odours are	Frequency of exposure is likely to be medium/low as: Odour plumes are transient in nature – unlikely to travel great distances and will dissipate with wind movement. Nearest receptors downwind are local human population in commercial and residential properties and users of local roads to the ENE and NE.	May cause annoyance to road users and people nearby.	Low – if control measures are implemented

			<p>minimised, and staff training in monitoring for odours. The odour control measures for the MSP will be monitored regularly and remain under review.</p>			
--	--	--	--	--	--	--

Table 3 - Noise & Vibration Risk Assessment

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
Noise from methane stripping plant	Local human population in nearby residential properties in Grange Park Local workers in including the fuel station to the NW and the depot to the N Users of local roads and paths	Through air	The potential noise generation from the electric powered MSPs with pumps, bubble tube diffusers and blowers has been assessed. It is considered that the MSP is unlikely to generate noise levels that would impact as a nuisance/disturbance on local receptors. The manufacturer performance guarantee states maximum noise of equipment heard from 1m outside of MSP enclosure will be 45dB – so unlikely to even impact closest receptors. A planned preventative maintenance (PPM) programme will be in place for all parts of the plant and will include routine maintenance and servicing of parts that could give rise to increases in noise.	Unlikely due to road network and logistics depots in surrounding area already creating high background noise levels, therefore the low noise emissions from the MSP are unlikely to significantly impact on receptors.	Noise may cause annoyance to people nearby.	Low– if control measures are implemented
No sources of vibration identified.	Local human population and users of domestic roads.	Through the ground.	N/A	Very unlikely.	Nuisance.	Very low

Table 4 - Fugitive Emissions Risk Assessment

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
To Air						
Dust	Local human population and users of domestic roads Disturbance to wildlife, birds and habitats of nearby woodlands and habitat designations Smothering of fauna wildlife	Through air	N/A - The nature of the operation will not generate any dust emissions.	N/A	N/A	N/A

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
To Water						
Contaminated run-off	Drains located on landfill landform to SE. Surface water in field drains further north. Ponds located in golf course to the west within 1km of the site.	Surface water drainage system.	Any potentially contaminated surface water from within the bunded area will be pumped into the methane stripping tank before being discharged via dedicated constructed pipework from the MSP effluent discharge pipe, which connects to the Anglian Water public foul sewer network. Storage and treatment vessels will be subject to secondary containment measures that will conform with CIRIA C736 Class 2 Containment (UK ICOP The Establishment of Appropriate Containment Standards for Leachate Storage Infrastructure). The bunded area shall have a bund depth of 0.7m and a capacity of at least 110% of the largest vessel or 25% of the total tankage volume, whichever is the greater. Bunds shall be regularly inspected to ensure that bunds filled by rainwater are regularly emptied – otherwise the purpose of the bunding provided is lost. Connections and fill points should be within the bunded area and no pipework should penetrate the bund wall. Any rainwater falling into the bund will be pumped out and into the leachate tanks. The raw	Unlikely given that tanks are situated within self-contained bunds. No direct linkages or emissions to surface water from MSP to nearby surface water receptors	Detriment to the quality of surface water; could affect fish and other wildlife within the watercourse.	Low – if control measures are implemented

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
			<p>materials of anti-scaling and anti-foam liquids will also be stored in 25litre drums within a bunded area.</p> <p>Bunding is sufficient to contain the quantity of any potential spillage from the particular operation.</p> <p>Tanks and vessels will be equipped so that a high -level alarm is activated if filling becomes excessive. A ‘high-high’ alarm will switch off the supply of leachate before a spillage occurs.</p> <p>Spillage pads and/booms will be provided.</p> <p>A Planned Preventative Maintenance programme is in place for all critical equipment and infrastructure.</p>			
Contaminated run-off.	Groundwaters	Through soil/ groundwater.	<p>Any potentially contaminated surface water from within the bund is pumped into the methane stripping tank before being discharged via dedicated constructed pipework from the MSP effluent which connects to the Anglian Water public foul sewer network.</p> <p>Storage and treatment vessels will be subject to secondary containment measures that will conform with CIRIA C736 Class 2 Containment (UK ICOP The Establishment of Appropriate Containment Standards for Leachate Storage Infrastructure).</p>	Very unlikely.	Detriment to the quality of ground- and surface water; could affect habitats down gradient/ downstream of the site.	Low – if control measures are implemented

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
			<p>The bunded area shall have a bund depth of 0.7m and a capacity of at least 110% of the largest vessel or 25% of the total tankage volume, whichever is the greater.</p> <p>Bunds shall be regularly inspected to ensure that bunds filled by rainwater are regularly emptied – otherwise the purpose of the bunding provided is lost. Connections and fill points should be within the bunded area and no pipework should penetrate the bund wall. Any rainwater falling into the bund will be pumped out and into the leachate tanks. The raw materials of anti-scaling and anti-foam liquids will also be stored in 25litre drums within a bunded area.</p> <p>Bunding is sufficient to contain the quantity of any potential spillage from the particular operation.</p> <p>Tanks and vessels will be equipped so that a high -level alarm is activated if filling becomes excessive. A ‘high-high’ alarm will switch off the supply of leachate before a spillage occurs.</p> <p>Spillage pads and/booms will be provided.</p> <p>A Planned Preventative Maintenance programme is in place for all critical equipment and infrastructure.</p>			

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
Pests						
Rats, flies and other pests carrying pathogens or harmful microorganisms.	Local human population	Rats or other pests migrating onto any nearby premises and then humans or farm animals getting into contact with them.	N/A - It is considered that a methane stripping plant will not result in any risk of rats, flies and other pests due to sealed containment and regular maintenance of plant.	Very unlikely.	Nuisance.	Very low
Mud/Litter						
Mud/debris from delivery/ collection vehicles.	Humans.	Mud/debris being dragged onto public highway.	N/A – not applicable as proposed location of MSP compound covered with gravel and hardstanding.	Very unlikely.	Nuisance.	Very low

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
Litter.	Local human population.	By wind.	N/A – no litter will be generated by the proposed operations	Very unlikely.	Nuisance.	Very low

Table 5 - Visible Plumes Risk Assessment

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
Potential visible plumes.	Nearby receptors.	Air.	N/A – no visible plumes will be generated by the proposed operation. Only one point releasing to air will be to relieve pressure in the system and not be visible.	N/A	N/A	N/A

Table 6 - Accidents Risk Assessment

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
Leak or spillage from tank or vessels containing liquid material (leachate) Spillage from raw/process materials (anti-foam and anti-scalant)	Surface water drain on landfill and also to north of site. Ponds located on golf course to W and NW.	Via surface water drains.	Bunded tanks with bund depth of 0.7m with 110% capacity to provide CIRIA C736 compliant bunding in respect of hydraulic containment, jetting and surge. The bund will have a small sump and pump with level controls and a high float switch. Leachate levels within tanks controlled by pneumatic floats that cut off pumps to avoid overfilling. The anti-scalant and anti-foam raw materials are stored in 25litre drums within a bunded area with impermeable surfacing. All pipework is above ground and contained within the bunding. No pipework will penetrate any of the bunding (as it could compromise the integrity). All tanks and pipework will be above ground and will undergo visual inspections to identify any leaks. In addition, pressure testing will be carried out detect any leaks in the MSP infrastructure. A Planned Preventative Maintenance programme to be put in place for all critical	Unlikely to impact as there are no direct linkages or emissions to surface water from MSP to nearby surface water receptors Small spillages should they occur will be cleaned up immediately. Large (catastrophic) failure of tanks/vessels is very unlikely to occur.	Detriment to the quality of surface water with severity dependant on size of the spill;	Low – if control measures are implemented

			<p>equipment and infrastructure. Regular inspection of surface integrity, container and bunding integrity.</p> <p>Emergency management plan to include: - Spillage action plan with training of all relevant staff on implementing the plan.</p> <p>The manager also responsible for review of what caused the incident and whether changes in procedures are needed as a result.</p>			
As above.	Groundwater.	Direct run-off from site across ground, then ground infiltration.	As above.	Very unlikely. Even in the event of any spillages onto unsurfaced ground, migration through soil to groundwater will cause further degradation and retardation of organic material.	Detriment to the quality of ground- and surface water; could affect habitats down gradient/ downstream of the site.	Low – if control measures are implemented
Fire.	Local human population & surface water/ groundwater. Road users Local businesses	Air transport of smoke and vapours	<p>A Planned Preventative Maintenance programme in place for all critical equipment and infrastructure which will minimise the risk of fire caused by equipment failure.</p> <p>Emergency procedures which forms part of the site's Integrated Management System.</p> <p>The manager also responsible for review of what caused the incident and whether changes in procedures are needed as a result.</p>	Unlikely - due to the nature of the waste, it is unlikely to result in any fires. The scale of the MSP should a fire occur as a result of equipment fire is likely to be small and containable.	Respiratory irritation, nuisance to local population. Pollution of land or water by firewater.	Low – if control measures are implemented

			Measures to contain firewater similar to handling of spillages as outlined above. Firewater will be contained, collected and removed from site in a controlled manner and not be allowed to run-off.	Therefore, any impacts as a result of a fire should not significantly impact on nearby receptors such as road users.		
--	--	--	--	--	--	--

5. CONCLUSION

- 5.1.1 The risk assessments above enable identification of appropriate mitigation measures to control the amenity and accident risks from the proposed activities. All identified risk mitigation measures will be incorporated within the management system for the site.
- 5.1.2 The amenity and accident risk assessments indicate that provided the identified risk mitigation measures, which are identified in the tables above, are implemented, the risk of nuisance or pollution from odour, noise, fugitive emissions including dust and contaminated surface run-off or accidents is low, and the risk from vibration, visible plumes, pests, mud and debris and litter as negligible.
- 5.1.3 Overall, the proposed location of the MSP will be set within an existing landfill site and produce very little emissions, set within a wider slightly industrial area, with background noise and other emissions from neighbouring commercial premises, including logistics depots and a fuel station, and also from the local road network.

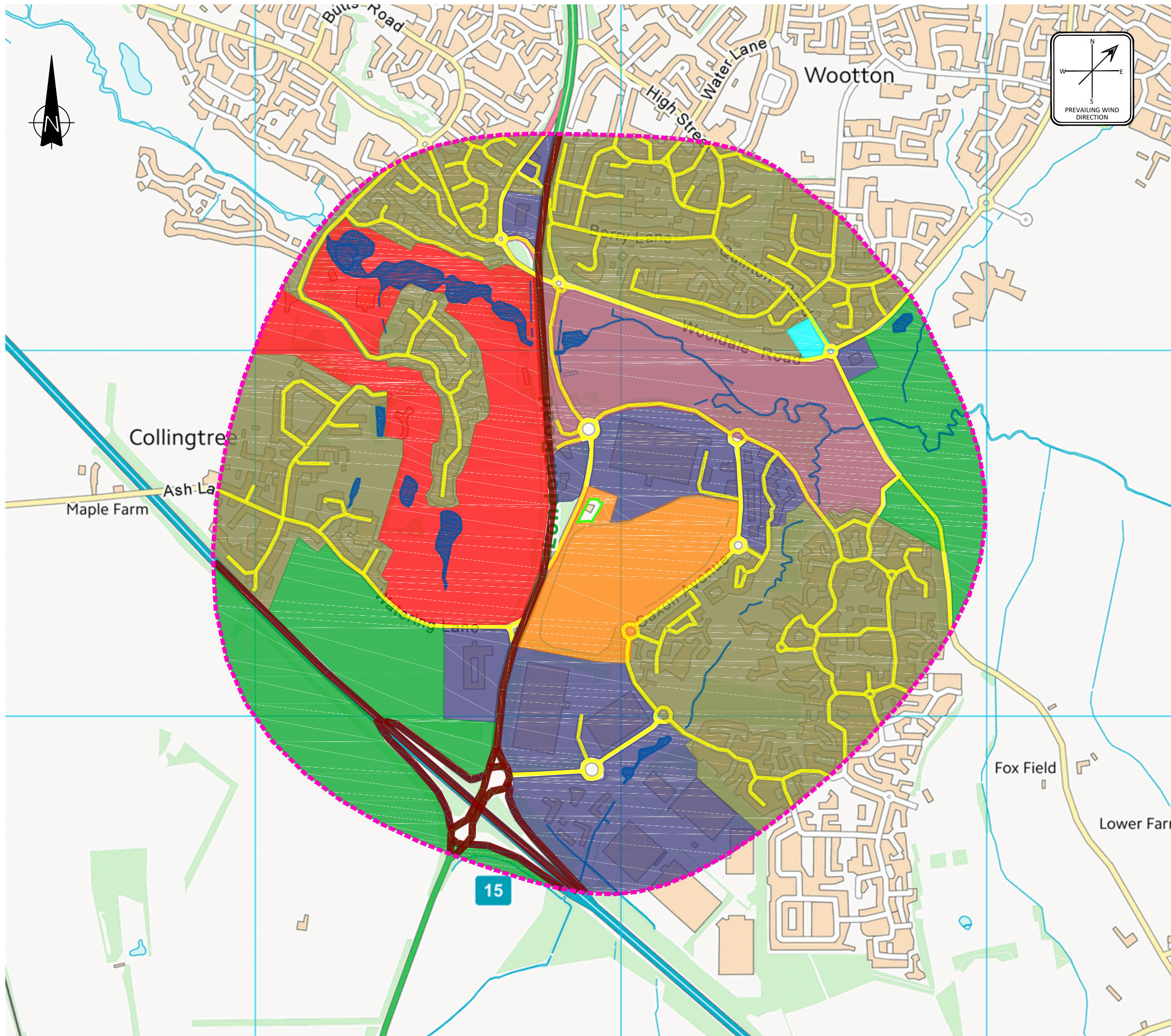
6. REFERENCES

Environment Agency (Updated 25th March 2021): Risk Assessments for your environmental permit: <https://www.gov.uk/guidance/risk-assessments-for-your-environmental-permit>



Drawings

4898-CAU-XX-XX-DR-V-1800 Sensitive Receptors Plan



LEGEND

- ACTIVITY BOUNDARY
- 1000m OFFSET
- SURFACE WATER
- PUBLIC AREAS
- COMMERCIAL
- LANDFILL SITE
- RESIDENTIAL
- MAJOR ROAD
- MINOR ROAD
- AGRICULTURAL
- INDUSTRIAL
- RECREATIONAL

--	--	--	--	--	--

P01	ISSUED FOR INFORMATION	EJD	SB	SB	22.02.21
-----	------------------------	-----	----	----	----------

REV	MODIFICATIONS	BY	RE	AP	DATE
-----	---------------	----	----	----	------

PURPOSE OF ISSUE: FOR INFORMATION STATUS: S2

CLIENT:

PROJECT:
**WOOTTON LANDFILL SITE
 METHANE STRIPPING PLANT**

TITLE:
SENSITIVE RECEPTORS PLAN

DESIGNED BY	DRAWN BY	REVIEWED BY	AUTHORISED BY
EJD	EJD	SB	SB

DATE	SCALE @ A3	JOB REF:	REVISION
19.02.2021	1:10,000	4898	P01

DRAWING NUMBER
4898-CAU-XX-XX-DR-V-1800

Registered Office: Intec, Parc Menai, Bangor, Gwynedd, LL57 4FG Company Registered No: 06716319

© COPYRIGHT CAULMERT LIMITED - NOT TO BE COPIED OR REPRODUCED IN ANY WAY OR FORM WITHOUT PRIOR WRITTEN CONSENT FROM CAULMERT LIMITED



Registered Office: Intec, Parc Menai, Bangor, Gwynedd, LL57 4FG

Tel: 01248 672666

Fax: 01248 672601

Email: contact@caulmert.com

Web: www.caulmert.com