

Caulmert Limited

Engineering, Environmental & Planning
Consultancy Services

Cardiff Docks

Donald Ward Limited

New Bespoke Environmental Permit Application

Environmental Risk Assessment

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Environmental Risk Assessment

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6002-CAU-XX-XX-DR-V-1801 Sensitive Receptors Plan

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1.0 INTRODUCTION

1.1 Overview

- 1.1.1 Donald Ward Limited (hereafter referred to as ‘the *Operator*’) have appointed Caulmert Limited to prepare a New Bespoke Environmental Permit application for a new metal recycling and ELV depollution waste operation at their Cardiff Docks site (‘the *Site*’) in South Wales. The Site is located at postcode **CF10 4LY** and national grid reference **ST 20194 74018**.
- 1.1.2 This report is an Environmental Risk Assessment which forms part of the new bespoke environmental permit application for Cardiff Docks new metal recycling and ELV depollution waste operation.
- 1.1.3 This risk assessment considers any potential risks associated with the new waste operation and the proximity of the Site to sensitive receptors. It is expected that the risks will be low (with controls in place) with respect to odour, pests, dust, litter, noise, and other fugitive emissions from Site operations.
- 1.1.4 This risk assessment has been compiled in accordance with the current NRW guidance ‘How to carry out a risk assessment for an Environmental Permit¹’ last updated 17th of July 2024.

1.2 Site Setting and Location

- 1.2.1 The Site is an approx. 9-acre plot located 2.5km southeast of Cardiff City Centre, on the southern edge of the Queen Alexander Dock, within the wider Associated British Port (ABP) of Cardiff. The Site is located at National Grid Reference ST 2019 74018 and is leased from ABP Ports by Donald Ward Limited.
- 1.2.2 The Port of Cardiff is well connected by the rail network, and within easy reach of the M4 motorway. The Site is surrounded by other industrial sites and businesses within the Port of Cardiff and is adjacent to the Severn Estuary, which is a designated Site of Special Scientific Interest (SSSI), Special Area of Conservation (SAC), Special Protection Area (SAC) and Ramsar Site. Further information on sensitive receptors is provided in Section 2.0 of this report.

1.3 Proposed Site Operations

- 1.3.1 The Operator has been providing metal recycling services to the public, commercial, and industrial sectors for over 80 years, recycling both ferrous and non-ferrous metals, as well as providing end-of-life (ELV) depolluting and recycling services all over the UK. The Operator currently runs these services at their other permitted sites in Barking London, Chesterfield, Ilkeston, Swadlincote, York, Immingham, Redcar and Tilbury.
- 1.3.2 The Site location is shown in **Figure 1** below:

¹ <https://naturalresources.wales/permits-and-permissions/installations/how-to-carry-out-a-risk-assessment-for-an-environmental-permit/?lang=en>



Figure 1 – Site Location Plan (approx. Site boundary in red).

1.3.3 This permit application consists of a new hazardous and non-hazardous metal recycling, end-of-life vehicle (ELV) depollution/dismantling and furnace ready scrap (FRS) waste operation.

1.3.4 The waste operation at the Cardiff Docks Site will involve the following activities:

- **Storage of furnace ready scrap (FRS) metal for recovery** - No more than 1,000,000 tonnes per year of furnace ready scrap (FRS) metal for recovery. Uncontaminated furnace ready scrap metal (FRS) will arrive at site by either road or rail. The majority of FRS will come from Road from other WARD sites free from contamination and meets customer/furnace specifications ready to go on the vessel. However the site may accept large metal panels which are cut and reduced in size using a burner (hot

cutting) or alternative hand shearing activity (using Lefort 1000 shearer). This activity meets the Natural Resources Wales definition of shearing as: “The use of shearers and guillotines which utilise a range of hydraulic machinery that comprise hard steel blades to cut metals into manageable sizes”. FRS will be stored on site before being exported as either a waste or a product, as the site has been accredited to the appropriate End of Waste (EoW) standard.

- **End-of-life Vehicle (ELV) storage, depollution and dismantling** - No more than 11,000 tonnes per year of waste motor vehicles for vehicle storage, depollution and dismantling for recovery. End-of-life vehicles (ELVs) to be stored on-site prior to depollution and/or dismantling. Following treatment ELV's will be baled and transported by road to an appropriately licensed Ward facility for further recovery.
- **Metal recycling** - No more than 120,000 tonnes per year of ferrous and non-ferrous metals for temporary storage and treatment for recovery. Metal shredding capacity will be restricted to no more than 75 tonnes per day. Metal grades that require further processing or sorting prior to export or sale within the UK may be sorted and graded or processed using the following methods; hot cutting, shearing, shredding, screening, baling and snipping. Screening of metals will be undertaken inside the fully enclosed building on-site.

1.3.5 The activities undertaken on site will include the temporary storage and treatment of hazardous and non-hazardous waste. All activities will be undertaken on impermeable concrete surfacing with dedicated sealed drainage system.

2.0 SENSITIVE RECEPTORS

2.1 Background

2.1.1 This report assesses the potential risks to nearby sensitive receptors from the permit application proposals at Cardiff Docks. A sensitive receptor search was conducted of the surrounding area within a 1km radius of the Site boundary (see **Figure 2**) using Defra's Magic Maps website² and DataMapWales³ the sensitive receptors identified are listed below in **Table 1** and also shown on the Sensitive Receptor Plan drawing ref. 6002-CAU-XX-XX-DR-V-1801. The distance to each receptor is measured from the proposed Site boundary.



Figure 2 – Approx. 1 km Radius from Site Boundary.

2.1.2 The closest human receptors to the site are workers and customers of the surrounding industrial/commercial sites located 20m SW (HDM Tubes) and 50m NW. There are a large number of industrial sites further to the north as part of Cardiff Docks and across the Queen

² DEFRA Magic Maps 2023: <https://magic.defra.gov.uk/MagicMap.aspx>

³ DataMapWales: <https://datamap.gov.wales/>

Alexandra Docks. These are, however, largely industrial and commercial receptors and less sensitive to emissions such as noise, vibration, and odour.

- 2.1.3 There are no schools or hospitals within 1km of the site.
- 2.1.4 The nearest residential receptors are the short-term accommodation occupants at HMS *Cambria* Royal Naval Reserve, located approximately 450 m northwest of the site. In addition, residents of the Adventurers Quay housing complex are situated approximately 660m northwest of the site boundary.
- 2.1.5 Underlying the Site is Made Ground and below this are Tidal Flat deposits of clay, silt and sand (classified as a Secondary Undifferentiated Aquifer), and then the Mercia Mudstone (Secondary B Aquifer).
- 2.1.6 The majority of the Site is not at risk of flooding from the Sea, Rivers or Surface Water and Small Watercourses, in accordance with the NRW Flood and Coastal Erosion Risk Maps website⁴. However, a section along the northwestern boundary of the Site is within a Flood Zone 2 (risk of flooding from the Sea) and very small areas on the Site may be at risk of surface water flooding between 0.1 - 0.3m for 1 in 30 year rainfall events.
- 2.1.7 The Site is not located within an Air Quality Management Area (AQMA), with the closest located in Cardiff city centre (2.5km northwest) declared in April 2013 for nitrogen dioxide (NO₂).

2.2 Designated Sites of Ecological Importance & Other Habitats

- 2.2.1 A search of the surrounding area using the DEFRA Magic Maps website has identified the following designated habitats sites within 2 km:
- Severn Estuary (Wales) Site of Special Scientific Interest (SSSI) 36m southeast
 - Severn Estuary (Wales) Special Area of Conservation (SAC) 36m southeast
 - Severn Estuary (Wales) Ramsar Site 310m southeast
 - Severn Estuary (Wales) Special Protection Area (SPA) 310m southeast
 - Cardiff Heliport Fields Site of Importance for Nature Conservation and Local Wildlife Site (LWS) 975m north-northeast
 - Cardiff Bay Wetlands Local Nature Reserve (LNR) and Local Wildlife Site (LWS) 995m west
 - Hamadryad Park Local Nature Reserve (LNR) 1.52km west-northwest
 - Penarth Coast SSSI 1.9km to the southwest
- 2.2.2 The Severn Estuary/Mor Hafren is designated a SSSI, SAC, SPA, and Ramsar site due to its high tidal range, its importance as a migratory route for many fish and birds, and as a permanent home, overwintering home and breeding ground for internationally important populations of

⁴ NRW Flood Risk Maps 2023: <https://flood-risk-maps.naturalresources.wales/?locale=en>

waterfowl and other wading birds on the mudflats, sandbanks, rocky platforms and salt marsh along the estuary.

- 2.2.3 Covering 8 hectares, Cardiff Bay Wetlands Reserve is a vital Local Nature Reserve supporting reedbeds, a priority UK habitat, and a rich diversity of species. It provides breeding and feeding grounds for reed buntings, reed and sedge warblers, teal, kingfishers, and grey herons, alongside amphibians, invertebrates, and coarse fish. These habitats are crucial for both resident and migratory wildlife, making the reserve an important refuge within Cardiff's urban landscape.
- 2.2.4 There are no National Nature Reserves (NNRs), Designated Ancient Woodland, Biosphere Reserves, Marine Conservation Zones, Green Belt, World Heritage Sites, Areas of Outstanding Natural Beauty (AONBs), National Parks, Listed Buildings, Conservation Areas, Scheduled Ancient Monuments or Registered Parks and Gardens within 2km of the Site boundary.
- 2.2.5 The sensitive receptors identified within 1km of the Site boundary are presented in **Table 1** below:

Table 1 – Summary of Sensitive Receptors within 1km of the site boundary

Receptor	Type	Distance/Direction
Garden Tiger Butterfly	Priority Species	Within Permit Boundary
Queen Alexandra Dock	Surface Water	10m NW
HDM Tubes and Pipe Manufacturing Solutions Ltd warehouses	Commercial/Industrial	20m SW
Beach Sidings	Local Wildlife Site	21m E
Dunnock Bird	Priority Species	29m E
Severn Estuary SSSI and SAC	Protected Habitat/ Surface Water	36m SE
Visitors to storage units of Wild Water Group and Owens Group Cardiff	Recreational	50m NW
Herring Gull	Priority Species	55m W
Wild Water Group	Commercial	146m NW
UK prefulfillment - Densia	Commercial/Industrial	150m SW
Workers at other industrial sites off Cold Stores Rd in Cardiff Docks	Commercial/Industrial	220m NW
Severn Estuary SPA and Ramsar site	Protected Habitat	310m SE
Bob Martin Dispatch Warehouse	Commercial/Industrial	380m SW
Cargo Road	Public Road	413m NW
BBC Studios Roath Lock	Commercial	440m W
HMS Cambria Royal Naval Reserve	Residential	450m NW
Greenergy Cardiff Tank Farm	Commercial/Industrial	480m SW
Tyneside Road	Public Road	519m NW

Receptor	Type	Distance/Direction
Pedal Power Bike Hire	Commercial	524m NW
Workers at Alexandra Docks container yard	Commercial/Industrial	560m W
Tiger Yard Food Court	Commercial/Recreational	574m NW
VANZA Motor vehicle dealer	Commercial	600m NE
Tiger Yard Street Food	Recreational	630m W
Coffi Co at Porth Teigr	Commercial	640m WNW
Adventurers Key housing estate	Residential	660m NW
Parker Plant Hire	Commercial/Industrial	710m SW
Norwegian Church Art Centre	Recreational / Commercial	727m NW
Workers at Valero Fuel Supplier	Commercial/Industrial	750m NE
The Watguard Pub	Commercial/Recreational	760m NW
Business Park/Offices on northern side of Roach Basin	Commercial	760m NW
Norwegian Church Arts Centre	Recreational	770m WNW
ITV Cymru	Commercial	802m NW
Atradius Insurance Company offices	Commercial	805m NW
Associated British Ports of Cardiff Offices	Commercial/Industrial	825m SW
Atkin Trade Specialists	Commercial/Industrial	830m NE
Biffa Waste Management Cardiff	Commercial/Industrial	840m NE
Visitors to Cardiff Bay Trail Walk / Wales Coastal Footpath & Alexandra Head	Public Footpath/Recreational	850m SW
Cardiff Recreational Area inc. Cardiff Bay Sailing Centre, Skate Plaza, Basketball Court, Aqua Park and Playground	Recreational	870m SW
The Senedd government building	Commercial	900m NW
Cardiff Barrage Children's Playground	Recreational	960m SW
Cardiff Heliport Fields	Habitat / Commercial	975m NNE
Cardiff Bay Wetlands Reserve (LNR and LWS)	Habitat	995m W
Coop Food	Commercial	96m NW
Roald Dahl Plass (Plaza)	Commercial/Recreational	1km NW
Millenium Centre	Recreational	1km NW
St David's (VOCO) Hotel	Commercial / Recreational	1km WNW
Mount Stuart Graving Docks	Commercial / Recreational	1.1 km NW
Hamadryad Park Local Nature Reserve	Habitat	1.52 km WNW

2.3 Meteorological Setting

- 2.3.1 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. Wind statistics observed from St Athan Royal Air Force Base weather station, the closest weather station actively recording wind statistics, are considered to be representative of the typical conditions at the site (**Figure 3** below). St Athan Royal Air Force Base weather station is located over 14km to the southwest of the site, at Cardiff Airport.
- 2.3.2 A review of the data recorded monthly between November 2000 and September 2023 on the Windfinder.com⁵ website indicates that the most dominant wind direction is from the west, blowing towards the east. With reference to the Sensitive Receptor Plan ref. 6002-CAU-XX-XX-DR-V-1801, predominant annual wind conditions are likely to blow out towards the Severn Estuary.

Monthly wind direction and strength distribution

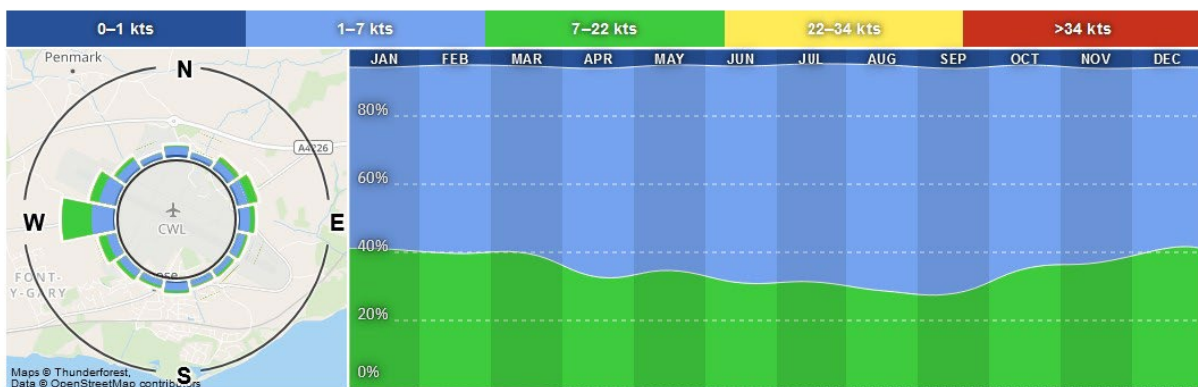


Figure 3 – Cardiff Airport wind statistics – average wind direction & strength 2000-2023

⁵ <https://www.windfinder.com/windstatistics/cardiff>

3.0 RISK ASSESSMENTS

3.1 Assessments for the Proposed Operations

3.1.1 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 NRW guidance 'How to carry out a risk assessment for an Environmental Permit' (last updated 17th July 2024).

3.1.2 It is considered that the biggest risk associated with the permitted operations are emissions resulting from noise and potentially dust, however all emissions have been considered in detail.

3.2 Risk Assessments - Tables

3.2.1 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, bioaerosols, 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).

3.2.2 The hazards identified above have the potential to escape beyond the site 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.

3.2.3 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
<p>Odour from site activities:</p> <ul style="list-style-type: none"> removal and separate collection of hazardous liquids from ELVs i.e. fuel, hydraulic oil etc. damaged petrol/diesel tanks of ELVs refuelling plant/equipment flame cutting of metal storage of wastes – oily rags, oil waste 	<p>Workers and patrons of nearby commercial/industrial premises.</p> <p>Residents of the HMS Cambria Royal Navy Facility (450m NW). Residential areas located >600m NW.</p> <p>Users of the Wales Coastal Path / Cardiff Bay Trail Walk (850 m SW)</p>	Through air.	<ul style="list-style-type: none"> There will be no significant odours generated by the proposed operations. Removal and separate collection of fuel, motor oil, transmission oil, gearbox oil, hydraulic oil, cooling liquids, antifreeze, brake fluids and any other fluids in an ELV are undertaken by trained site operatives who decant the fluids using dedicated pipes that provide a sealed route from the vehicle/tank to the designated double skinned tank for temporary storage. This is unlikely to release significant odours due to the fluids not being exposed to the open-air during transit from one tank to the other. The operator will ensure petrol and diesel tanks of ELVs are fully emptied prior to baling. Refuelling of plant and equipment will be undertaken by trained site operatives in a designated bunded area with spill kits available to prevent and control spills or 	Very Unlikely - Odours are not expected to be a persistent issue at the site. Any odour generated will disperse rapidly due to air movement, and there are no downwind receptors sensitive to odour (i.e., people) to the east of the site. The nearest potential residential receptors are the short-term accommodation occupants at HMS Cambria Royal Naval Reserve,	Odour nuisance to humans in the local area.	Low – with control measures 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>leaks. Plant and equipment will be operated on the impermeable site surfacing only.</p> <ul style="list-style-type: none"> • Flame cutting of metal may release only very minor odours/burning smells/smoke which will dissipate very quickly with air movement. The operator operates similar sites across the UK with no on-going odour issues or substantive odour complaints from this activity. • The wastes to be accepted and stored on site are very unlikely to generate odour (such as metal, tyres, batteries). Any potentially odorous wastes such as oil-soaked rags or waste oil liquid will be stored within a sealed container awaiting dispatch from site. Engines, catalytic converters and any car parts that may contain potentially odorous liquids will be stored within an enclosed container awaiting removal from site. 	approximately 450 m northwest of the site, and a residential area over 600 m to the northwest, both outside the predominant downwind direction.		

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
<p>Noise and vibration from site activities:</p> <ul style="list-style-type: none"> • deliveries of waste by rail and road • mobile plant movements on site for maintenance, operations and deliveries. • Metal processing: shredding, screening, hot cutting, shearing, baling etc. 	<p>Workers and patrons of nearby commercial/industrial premises.</p> <p>Residents of the HMS Cambria Royal Navy Facility (450m NW). Residential areas located >600m NW.</p> <p>Users of the Wales Coastal Path / Cardiff Bay Trail Walk (850 m SW)</p> <p>Wildlife, specifically the priority species identified, namely the Garden Tiger Butterfly (within permit boundary),</p>	<p>Through air (noise).</p> <p>Through the ground (vibration).</p>	<ul style="list-style-type: none"> • The Noise Impact Assessment for Ward Recycling’s Cardiff Docks metal recycling operations found that, at the nearest residential receptor (HMS <i>Cambria</i>), predicted worst-case operational noise levels (52 dB LAeq,1h) are only 4 dB above typical background levels (48 dB LA90,1h). Given the area’s existing industrial noise climate, no character correction was applied, and the assessment concluded the impact is below the ‘Adverse Impact’ threshold . Noise modelling used representative plant data and considered all equipment operating simultaneously; results indicate operations are unlikely to cause significant disturbance. • It is unlikely that vehicle and rail movements associated with the metal recycling operation will add significant additional noise or vibration to the background noise and vibration already 	<p>Very unlikely – vehicle and plant movements associated with the site operations unlikely to contribute noise levels greater than levels already experienced within the industrial area surrounding the site.</p> <p>Closest residential receptors over 600m to the NW and not downwind of the predominant wind direction.</p>	<p>Noise may cause annoyance to people nearby or passing the site on roads and footpaths.</p>	<p>Low – if control measures are implemented</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
	the Dunnock (29m), and the Herring Gull (55m). In addition, wildlife in nearby Severn Estuary habitats 36m SE.		<p>present in the surrounding industrial area/Cardiff Docks.</p> <ul style="list-style-type: none"> • Drop heights of waste loads shall be kept to a minimum. • Site vehicles and plant will be regularly serviced and maintained to ensure worn parts do not create unnecessary noise or vibration emissions. • All site plant and equipment will be used on the smooth-running surface of the concrete slab on-site and this will reduce noise and vibration from tyres. • The site surface will be regularly inspected for potholes and maintained/repaired to reduce noises and vibrations from site plant moving round site and encountering defects in the surfacing. • Site speed limits will restrict speeds of vehicles moving around the site. • Metal processing will be confined to designated areas, with shredding carried out within a concrete bay to shield off-site receptors, and screening undertaken 			

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
			inside the building to minimise potential noise emissions. <ul style="list-style-type: none"> • Other treatment plant will be positioned to ensure noise emissions are minimised and prevented from causing a nuisance off-site. This may involve orienting the plant in a certain direction, undertaking the activity within the shelter of a bay or building, or enclosing the plant with a cover to mitigate noise emissions. • Vibration-reduction equipment will be used where possible to reduce excessive vibrations from moving parts of machinery. • During periods of downtime, all plant will be switched off to minimise noise emissions. • Noise levels will be monitored by staff and any noise complaints received taken into consideration when reviewing levels. • Reversing alarms on mobile plant/forklifts will be fitted with white noise alarms where possible. 			

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
			<ul style="list-style-type: none"> Waste deliveries by road and treatment operations will be undertaken within normal operational hours only. Loading onto ships may be undertaken overnight. The movement of trains is external to the site permit boundary, and although a source of noise and vibration, is outside the control of the operator. 			

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 from site activities: <ul style="list-style-type: none"> Dust from screening and shredding of metals (primarily non-ferrous metals to be shredded on-site) Dust from vehicle/plant movement on-site Dust from general waste handling and storage 	Local human population and users of public roads Wildlife, specifically the priority species identified, namely the Garden Tiger Butterfly (within permit boundary), the Dunnock (29m), and the Herring Gull (55m). In addition, wildlife in nearby Severn Estuary habitats 36m SE. Smothering of fauna (leaves) and other sensitive wildlife.	Through air.	<ul style="list-style-type: none"> It is unlikely potentially dusty wastes will be brought to site. The furnace ready scrap (FRS) metal will be uncontaminated and unlikely to contain dusty fractions. The remaining wastes such as hazardous liquids, batteries, oily rags and ferrous/non-ferrous metals to be brought to site are not inherently dusty. ELVs will already have their soft furnishings/materials stripped out prior to arriving at the site. Any general wastes such as packaging waste will be securely covered within a skip/container to minimise the risk of wind-whip or dust emissions. Visual monitoring will be undertaken by site personnel to ensure no visible dust emissions with appropriate mitigation measures undertaken should visible dust be observed (dampening down with hose, road sweeper etc). The potential for mud or debris to be generated on-site is very low/negligible due to the proposed waste types to be accepted. Therefore, the risk of 	Unlikely – dust not considered to be a significant risk from the proposed site operations.	Nuisance of dust particles on cars and buildings nearby. Smothering of local plants and flora from dust.	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
			mud/debris being tracked around site and causing dust emissions is also very low. <ul style="list-style-type: none"> • Treatment of metal wastes includes shredding, typically of non-ferrous metals, which is not an inherently dusty activity. The operator undertakes shredding of non-ferrous metals on their other sites around the UK with no history of dust complaints or on-going dust issues. • Screening of metals contaminated with IBA will be undertaken within a building. Dust Management Plan has been produced that identify activities with the potential for dust generation and develops an effective dust management strategy to minimise the likelihood of fugitive dust emissions from site and reduce potential environmental impact			
Emissions of Vapours/Volatile Organic Compounds (VOC's)	Workers and patrons of nearby commercial/industrial premises.	Through air.	<ul style="list-style-type: none"> • There will be no significant VOCs generated by the proposed operations. • Removal and separate collection of fuel, motor oil, transmission oil, gearbox oil, hydraulic oil, cooling liquids, antifreeze, brake fluids and any other fluids in an ELV are undertaken by trained site operatives who decant the fluids using 	Very unlikely – vapours and VOCs are unlikely to be a persistent problem at the site.	Risk to human health.	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
	Human receptors in residential areas located >600m NW.		<p>dedicated pipes that provide a sealed route from the vehicle/tank to the designated double skinned tank for temporary storage. This is unlikely to release significant VOCs due to the fluids not being exposed to the open-air during transit from one tank to the other.</p> <ul style="list-style-type: none"> • The operator will ensure petrol and diesel tanks of ELVs are fully emptied prior to baling. • Refuelling of plant and equipment will be undertaken by trained site operatives in a designated bunded area with spill kits available to prevent and control spills or leaks. Plant and equipment will be operated on the impermeable site surfacing only. 	<p>They will dissipate quickly with air movement and no receptors sensitive to vapours/VOCs (i.e. humans) are located downwind of the site (to east). Closest residential receptors over 600m to the NW and not downwind of the predominant wind direction.</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
To Water						
Contaminated run-off into surface water or groundwater.	<p>Groundwater below site.</p> <p>Surface water in Severn Estuary/ Queen Alexandra Dock.</p> <p>Nearby protected habitats – Severn Estuary SSSI and SAC (36m SE) and SPA and Ramsar sites (310m SE).</p> <p>Wildlife, specifically the priority species identified, namely the Garden Tiger Butterfly (within permit boundary),</p>	Surface run-off/overland flow and infiltration down into ground.	<ul style="list-style-type: none"> • Site surfacing at the Site is impermeable concrete with existing surface water drainage system sealed off and draining to underground tank . The concrete surface will be subject to routine inspection and maintenance to ensure integrity is maintained. • Surface water run-off is controlled by a sealed site drainage system. • Any potentially contaminated run-off will be contained on-site and tankered away for offsite treatment (Leaks and Spills addressed in Table 6). 	Unlikely - given that storage and treatment areas benefit from impermeable concrete surfacing and are regularly maintained and monitored.	<p>Detriment to the quality of surface water could affect fish and other wildlife within the watercourse.</p> <p>May adversely affect groundwater quality.</p>	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
	the Dunnock (29m), and the Herring Gull (55m). In addition, wildlife in nearby Severn Estuary habitats 36m SE.					
Pests						
Rodents and associated diseases	Local human population.	Over ground, via the air or via watercourses.	N/A - It is not considered that any of the waste present on-site will result in any risk of rats, flies and other pests due to the wastes accepted will be unattractive to pests.	Very unlikely.	General nuisance and health risk from rats being vectors for human pathogens (e.g., Weil's disease).	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
Mud/Litter						
Mud & debris tracked by delivery and collection vehicles.	Nearby receptors using public roads.	Mud and debris being dragged onto public highway.	<ul style="list-style-type: none"> Site covered with concrete hardstanding and waste types unlikely to be a source of mud or debris. Most wastes will be containerised or stored in skips/containers. Wastes unlikely to cause mud and debris will be stacked/stockpiled i.e. metals/ELVs. Good housekeeping will be maintained, with site surfaces inspected and cleaned regularly to ensure no mud or debris is tracked out of the site. 	Very unlikely.	Potential skid risk to drivers on public roads & nuisance.	Very low.
Litter.	Local human population.	By wind and over land.	<ul style="list-style-type: none"> Waste types accepted unlikely to generate significant litter Skips/containers will be covered to ensure no litter is released. Good housekeeping will ensure an accumulation of debris does not occur. As part of daily site inspections, litter will be checked for and any shown to escape the site boundary will be reported and litter picking undertaken. 	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 from stacks or other point source emissions.	Nearby receptors.	Air.	N/A – no visible plumes will be generated by the proposed operations.	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 container or vessels containing liquid hazardous substances	<p>Groundwater.</p> <p>Nearby surface water receptors – Queen Alexandra Dock and Severn Estuary.</p> <p>Nearby protected habitats – Severn Estuary SSSI and SAC (36m SE) and SPA and Ramsar sites (310m SE).</p> <p>Wildlife, specifically the priority species identified, namely the Garden Tiger Butterfly (within permit boundary), the Dunnock (29m), and the Herring Gull (55m). In addition,</p>	Overland surface water run-off, across ground, infiltration into ground.	<ul style="list-style-type: none"> • All liquid wastes stored on site will be within appropriate sealed containers with bunding and therefore spillages are unlikely. • Any accidental spillages or leaks of substances on-site will be contained by the impermeable concrete surfacing and bunding of the storage and handling areas/secondary containment of storage tanks. The concrete base will be subject to routine inspection and maintenance to ensure integrity is maintained. • Spills or leaks will be reported and cleaned up immediately. • Emergency spillage pads, booms and granules will be available at strategic locations around site, particularly near to areas where a spillage or leak could occur. • Transfer of liquids from ELVs (i.e. coolant, engine oils etc.) to banded storage tanks will be undertaken within the fully banded impermeable areas. 	<p>Unlikely – given that containers are situated within self-contained bunds on impermeable concrete surfacing and regularly maintained and monitored.</p> <p>Site drainage system closed off, draining to underground tank to prevent contaminated substances leaving the site.</p> <p>Small spillages should they occur will be cleaned up immediately.</p>	Detriment to the quality of surface water and groundwater with severity dependant on size of the spill.	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
	wildlife in nearby Severn Estuary habitats 36m SE.		<ul style="list-style-type: none"> Bunded areas will be designed to be able to contain at least 110% of the largest container's contents. Contaminated liquids collected in bunded areas from accidental spills or leaks will be contained and sent off site for appropriate disposal. The spillage action plan will be implemented (included within the EMS for the site) with training of all relevant staff on implementing the plan and in the use of spill pads and booms, and appropriate PPE required for spillages of hazardous substances will be available. The manager also be responsible for review of what caused the incident and whether changes in procedures are needed as a result. 	Large (catastrophic) failure of containers is very unlikely to occur.		
Flooding	Groundwater. Nearby surface water receptors – Queen Alexandra Dock and Severn Estuary.	Overland surface water run-off, across ground, infiltration of contaminated	<ul style="list-style-type: none"> Site is located within an area that is not at risk of flooding from the Sea, rivers or surface water. Surface water drains are regularly inspected and cleaned to prevent blockages. 	Unlikely	Detriment to the quality of surface water and groundwater.	Low – if control measures are implemented

What do you do that can harm and what could be harmed			Managing the risk	Assessing the risk		
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	Nearby protected habitats – Severn Estuary SSSI and SAC (36m SE) and SPA and Ramsar sites (310m SE).	flood water into ground.				
Fire.	Local human population. Surface water and groundwater. Nearby protected habitats – Severn Estuary SSSI and SAC (36m SE) and SPA and Ramsar sites (310m SE). Wildlife, specifically the priority species identified, namely	Air transport of smoke and vapours. Firewater run-off.	<ul style="list-style-type: none"> • Fires could occur as a result of arson, self-combustion or from sources of ignition. • Concrete bay walls and flooring is fire resistant to prevent fires from spreading. • Flammable liquids will be stored in sealed containers separately from other wastes. Explosive and flammable gases will be stored in cylinders within locked metal cage on concrete surfacing. • Emergency procedures which form part of the site’s Management System will be followed. • Trained site staff and/or emergency fire crews will use water to extinguish any fires on-site and the resulting firewater has the potential to be contaminated and will be contained and disposed of appropriately. Measures to contain firewater similar to handling of spillages as outlined above. 	Unlikely – Only small amounts of combustible waste will be present on site. The fire-resistant concrete surface means any fires would likely to be small and containable.	Respiratory irritation, smoke nuisance to local population. Pollution of land or water by firewater.	Low - if control measures are implemented.

What do you do that can harm and what could be harmed			Managing the risk	Assessing the risk		
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	the Garden Tiger Butterfly (within permit boundary), the Dunnock (29m), and the Herring Gull (55m). In addition, wildlife in nearby Severn Estuary habitats 36m SE.		<p>Firewater will be contained, collected, and removed from site in a controlled manner and not be allowed to run-off into nearby watercourses or over land.</p> <ul style="list-style-type: none"> • Daily site inspections of internal and external storage areas to identify any signs of smoking or smouldering. • Site security with fencing, lockable gates and CCTV will prevent or alert site management of fires caused by arson or vandalism. • The site manager is responsible for review of what caused the incident and whether changes in procedures are needed as a result. • Further control measures are detailed in the Operator’s Fire Prevention Plan ref. E-FPMP-CA-001 V4.0 submitted with this application. 			

4.0 CONCLUSION

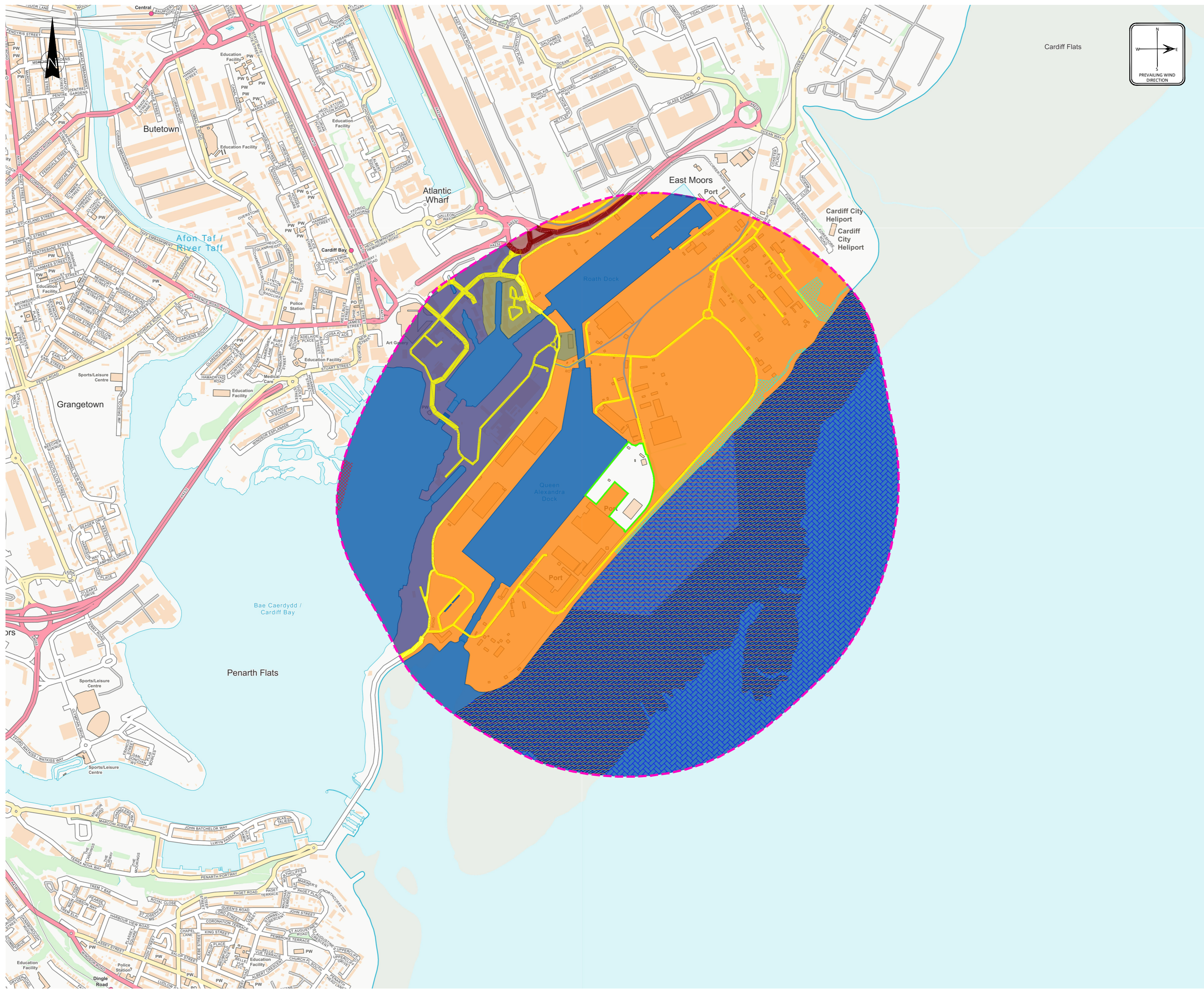
- 4.1.1 The risk assessments above enable identification of appropriate mitigation measures to control the amenity and accident risks from the proposed activities. All identified risk mitigation measures will be incorporated within the management system for the site.
- 4.1.2 The Environmental Risk Assessment indicates 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 and vibration, fugitive emissions including dust, litter, mud and debris, contaminated surface run-off, pests or accidents such as fire is low.
- 4.1.3 Overall, the proposed new metal recycling site at Cardiff Docks will store and process ELVs, FRS and ferrous/non-ferrous metals on an impermeable concrete surface, with any hazardous substances/fluids stored in appropriate double-skinned bunded tanks and other wastes such as catalytic converters, engines, batteries and oily rags in designated enclosed skips/containers. The site activities, with control measures in place, will produce very little emissions likely to affect nearby sensitive receptors, as is undertaken at other similar sites around the UK operated by Donald Ward Ltd.

5.0 REFERENCES

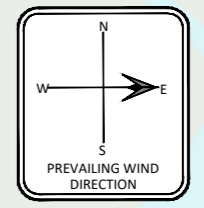
- 1) NRW guidance 'How to carry out a risk assessment for an Environmental Permit' (last updated 17th July 2024), found at: <https://naturalresources.wales/permits-and-permissions/installations/how-to-carry-out-a-risk-assessment-for-an-environmental-permit/?lang=en>

DRAWINGS

6002-CAU-XX-XX-DR-V-1801 Sensitive Receptors Plan



Cardiff Flats



LEGEND

- PROPOSED PERMIT BOUNDARY
- 1000m OFFSET
- SURFACE WATER
- WOODLAND / SCRUBLAND
- COMMERCIAL
- EDUCATIONAL FACILITY
- INDUSTRIAL
- RESIDENTIAL
- MAJOR ROAD
- MINOR ROAD
- RAIL
- SITE OF SPECIAL SCIENTIFIC INTEREST (SSSI) (WALES)
- SPECIAL AREAS OF CONSERVATION (SAC) (WALES)
- RAMSAR SITES (WALES) AND SPECIAL PROTECTION AREA (SPA) (WALES)
- LOCAL WILDLIFE SITE (SINC)
- LOCAL NATURE RESERVE

P04	RECEPTORS BOUNDARY UPDATED	EJD	AS	AS	07.08.25
P03	PERMIT BOUNDARY UPDATED	EJD	AS	AS	31.07.25
P02	AREAS UPDATED	EJD	ER	ER	24.02.25
P01	ISSUED FOR INFORMATION	EJD	SH	SH	25.10.23
REV	MODIFICATIONS	BY	RE	AP	DATE

PURPOSE OF ISSUE: FOR INFORMATION STATUS: S2

CLIENT:

WARD

PROJECT: CARDIFF DOCKS PERMITTING

TITLE: SENSITIVE RECEPTORS PLAN

DESIGNED BY	DRAWN BY	REVIEWED BY	AUTHORISED BY
EJD	EJD	SH	SH
DATE	SCALE @ A2	JOB REF:	REVISION
15.10.2023	1:10000	6002	P04

DRAWING NUMBER: 6002-CAU-XX-XX-DR-V-1801

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