DPS Process Solutions Limited

Caldicot R&D Facility

Environmental Permit Application

Environmental Risk Assessment

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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 forms, and has been prepared on behalf of the operator, DPS Process Solutions Limited (DPS) by WYG.

1.1.2 The Operator seeks to operate a waste treatment and storage facility at the Severn Bridge Industrial Estate in Caldicot.

1.1.3 This Environmental Risk Assessment (ERA) is limited to a qualitative assessment of the potential risk 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 which Natural Resources Wales (NRW) is currently following. 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;
- 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 and is summarised below.

2.2 Sources

2.2.1 The potential sources of risks have been considered for each risk type, as provided in Appendix A 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 Table 1.

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 have been identified and are shown on Drawing Number DPS/A102691/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 Sensitive Receptors within 1km from the Site

Receptor	Direction from Operational Area	Minimum Distance from proposed permit boundary (approx.) (m)
Designated ecological habitats e.g. Ramsars, SAC, SPA, SSSI		
Severn Estuary (Wales) Ramsar, SPA, SAC, SSSI	S	608
Gwent Levels – Magor and Undy SSSI	SW	360
Other Designations e.g. National Parks, AONB, World Heritage Sites		
N/A		
Historical buildings/listed buildings/archaeological sites		
Listed Buildings		
Castle Lodge	NW	490
Caldicot Castle	NW	690
Ye Olde Tippling Philosopher P.H	W	665
Prospect House	W	895
Court House	NW	990
The Old Rectory	NE	400
Garden Walls of underwood	NE	430
Manor Farmhouse and Manor Cottage	NE	445
Portskewett House	NE	615
Portskewett War Memorial	NE	565
Cross in Churchyard of the Church of St Mary	NE	525
Church of St Mary	NE	515
Old cottage/storehouse in churchyard of church of St Mary	E	525
Schools/Hospitals/Shops		
The Archbishops Rowan Williams Church in Wales Primary School	NE	675
Commercial and Industrial Premises		
Severn Bridge Industrial Estate	N, W, S	Adjacent
Old Pill Farm Industrial Estate	SW	445
Pill Farm Industrial Estate	SW	445
Castlegate Business Park	NW	195
Domestic Dwellings		
Residential area to the west of the Severn Bridge Industrial Estate	W	450
Residential area to the east of the application site	E	80
Highway or Minor Roads		

Caldicot By-pass (B4245)	W	515
Caldicot Road	N	60
Crick Road	NE	410
Symondscliff Way	W	>10
Second Severn Crossing (M4)	S	630
Sensitive Land Uses e.g. farmland, allotments, commercial fish farms		
N/A		
Surface Water		
Nedern Brook	SW	315
Other		
Caldicot Castle and Country Park	NW	645

2.4.2 According to the Environment Agency's OPRA Scheme for Waste Facilities guidance that Natural Resources Wales continues to follow, consideration be given to statutory designated sites within the following distances:-

- Sites of Special Scientific Interest (SSSI) = 2km
- Ramsar Sites, Special Areas of Conservation (SAC), Special Protection Areas (SPA) and Marine Protection Areas (MPA) = 1km

2.4.3 With reference Multi-Agency Geographic Information for the Countryside (MAGIC) website, there are two additional SSSIs within 2km of the site boundary. Details of the sites are provided in Table 3 below.

Table 3: Statutory Designated Sites within 2km of the Site

Site Name	Direction from the Site	Distance from the Site (m)
Nedern Brook Wetlands Caldicot	NW	1,060
Bushy Close	NE	1,640

2.4.4 As stipulated in the guidance, if a waste facility is located within the relevant distance criteria of a statutory designated site, such as sites designated under the Habitats Directive and/or the Countryside Rights of Way Act (2000), then the impact of emissions on the conservation areas must be assessed during the determination of the permit. As such, a Habitats Assessment has been undertaken as part of this application which is provided as Appendix B.

2.5 Risk Assessment

2.5.1 The ERA (Appendix A) look 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 activities will have no significant impacts in terms of odour, noise and fugitive emissions, and the likelihood of accidents is minimal.

Drawings

DPS/A102691/REC/01 – Receptor Plan

Appendices

Appendix A - Amenity and Accident 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.
Treatment and storage of odourous waste streams	Occupiers of domestic dwellings listed in Table 2. Workforce in commercial and industrial properties identified in Table 2.	Atmosphere	The proposed waste types are not putrescible in nature and therefore will not biodegrade to produce offensive odours. As such it is considered that the potential for odour to impact upon receptors beyond the site boundary is low. Strict waste acceptance procedures will be employed on site to minimise the risk of non-compliant wastes being accepted on site. All wastes will be received, stored and treated within the confines of a building. The building doors will be kept closed at all times unless vehicles and mobile plant are accessing the building. This will minimise the potential for any odours generated on site to impact receptors beyond the site boundary. All site operatives will be vigilant and report any non-conformances or odour issues to the Site Manager.	Unlikely as the storage and treatment of wastes will be undertaken within the confines of a building.	Odour annoyance	Not significant due to the nature of the proposed waste types and the 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 to/from the site	Occupiers of domestic dwellings listed in Table 2. Workforce in commercial and industrial properties listed in Table 2. Visitors of Caldicot Castle and Country Park.	Atmosphere	The delivery of waste will be confined to the hours stipulated within the planning permission and will be undertaken in a controlled manner to keep noise/vibration to a minimum. The operation of the proposed facility will comprise a small number of vehicles movements (approximately four HGV movements per day). As such, it is considered that the noise impact from vehicle movements is low. All plant and equipment will have effective silencers where possible and be maintained in accordance with the manufacturer's requirements. All plant and equipment will be switched off when not in regular use. All noise generating activities will be monitored closely and site operatives will be vigilant and	Unlikely due to measures in place	Intermittent noise and vibration disturbance	Not significant due to the low number of vehicle movements and the management techniques employed.

			report any excessive noise or vibration issues to the Site Manager.			
Noise from reversing vehicles	Occupiers of domestic dwellings listed in Table 2. Workforce in commercial and industrial properties listed in Table 2. Visitors of Caldicot Castle and Country Park.	Atmosphere	Utilisation of low level reversing signals. The operation of the proposed facility will comprise a small number of vehicles movements (approximately four HGV movements per day). As such, it is considered that the noise impact from vehicle movements is low. 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.	Intermittent during operating hours.	Intermittent noise and vibration disturbance.	Not significant due to the low number of vehicle movements and the management techniques employed.
Loading/unloading of waste	Occupiers of domestic dwellings listed in Table 2. Workforce in commercial and industrial	Atmosphere	The loading/unloading of waste will be undertaken in a controlled manner to keep noise/vibration to a minimum. The loading/unloading of waste will be undertaken within the confines of a building. The building doors will be kept closed at all times unless vehicles and mobile plant are accessing the building. This will minimise the potential for noise associated with the loading/unloading of wastes to impact upon	Unlikely as loading/unloading activities will be undertaken within the confines of a building.	Intermittent noise and vibration disturbance	Not significant due to management techniques employed.

	properties listed in Table 2. Visitors of Caldicot Castle and Country Park.		receptors beyond the site boundary. Drop heights will be minimised to reduce the generation of noise. All plant and equipment will be switched off when not in regular use. 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.			
Noise from treatment activity	Occupiers of domestic dwellings listed in Table 2. Workforce in commercial and industrial properties identified in Table 2. Visitors of Caldicot Castle and Country Park.	Atmosphere	All noise generating activities will be undertaken in a controlled manner to keep noise/vibration to a minimum. The proposed treatment activities will be undertaken within the confines of a building. The building doors will be kept closed at all times unless vehicles and mobile plant are accessing the building. This will minimise the potential for noise associated with plant and machinery to impact upon receptors beyond the site boundary. All plant and equipment will have effective silencers where possible and be maintained in accordance with the manufacturer's requirements. All noise generating activities will be monitored closely and site operatives will be vigilant and report any excessive noise or vibration issues to	Intermittent during hours of operations. However, the proposed treatment activities will be undertaken within the confines of a building which minimises the probability of exposure.	Intermittent noise and vibration disturbance.	Not significant due to management techniques employed.

			the Site Manager.			

Table A4: 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?	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 emissions generated from the storage and treatment of waste	Occupiers of domestic dwellings listed in Table 2. Workforce in commercial and industrial properties identified in Table 2. Visitors of Caldicot Castle and Country Park.	Atmosphere	All wastes will be received, stored and treated within the confines of a building. The building doors will be kept closed at all times unless vehicles and mobile plant are accessing the building. As such, this will minimise the potential for dust associated with the storage and treatment of waste to impact upon receptors beyond the site boundary. The use of modern plant and equipment shall be practiced and will be maintained in accordance with the manufacturer's requirements. This will reduce the generation of dust emissions. Regular housekeeping, including the cleaning, spraying or sweeping of all site surfaces and items of plant and machinery will be undertaken to minimise the build-up of dust on surfaces.	Unlikely as all wastes will be stored and treated within the confines of a building.	Local nuisance Potential respiratory health risk to public and staff	Not significant due to management techniques employed.

			The Site Manager will undertake daily visual assessments of dust levels and all site operatives will be vigilant and report any problems to the Site Manager.			
Dust emissions generated from vehicle movements	Occupiers of domestic dwellings listed in Table 2. Workforce in commercial and industrial properties identified in Table 2. Visitors of Caldicot Castle and Country Park.	Atmosphere	Vehicle speeds will be limited on site and access roads to prevent re-suspension and entrainment of dust. All wastes that will be delivered to site will be covered or sheeted to prevent the generation of dust while the waste is in transit. Regular housekeeping, including the cleaning, spraying or sweeping of all site surfaces and items of plant and machinery will be undertaken to minimise the build-up of dust on surfaces. The Site Manager will undertake daily visual assessments of dust levels and all site operatives will be vigilant and report any problems to the Site Manager. If necessary, a road sweeper will be contracted to clean the site access road and Symondscliff Way where vehicles exit the site.	Unlikely due to measures in place.	Local nuisance. Potential respiratory health risk to public and staff	Not significant due to management techniques in place.
To Water						
Contaminated rainwater run-off	Groundwater Surface water features listed in	Direct surface water run-off from site. Infiltration	The proposed waste types are non-hazardous in nature. As such, it is considered that there is not a high risk of contaminated run-off. All incoming wastes will be stored and treated within the confines of a building to ensure that	Unlikely due to measures in place.	Contaminated to groundwater and surface water.	Not significant due to management techniques employed.

	Table 2.	Percolation	the waste does not come into contact with incidental rainfall. All areas where waste activities will be undertaken will benefit from an impermeable surface with an appropriate drainage system that contains runoff. The drainage system will be regularly cleaned and maintained. Spill kits will be maintained on site at all times and all site operatives will be trained in the use of the spill kits.			
Pests/Scavenging Birds						
Birds and Pests	Occupiers of domestic dwellings listed in Table 2. Workforce in commercial and industrial properties identified in Table 2. Visitors of Caldicot Castle and Country Park.	Air Ground	The proposed waste types are not putrescible in nature and therefore will not attract pests or scavenging birds. A very high standard of cleanliness will be maintained on site, with regular housekeeping, which includes sweeping and cleaning out storage areas, treatment areas, plant and machinery and all site surfaces. Due to the routine housekeeping and other pest control measures in place, it is considered unlikely that the site will experience issues with pests and scavenging birds. All wastes will be received, stored and treated within the confines of a building. The building doors will be kept closed at all times unless vehicles and mobile plant are accessing the building. As such, it is considered unlikely that	Unlikely as all wastes will be stored and treated within the confines of a building.	Local nuisance.	Not significant due to the nature of the proposed waste types and the management techniques employed.

			pests and scavenging birds will be attracted to the facility. 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.			
Mud and Litter						
Mud on local highways	Users of local highways. Occupiers of domestic dwellings listed in Table 2. Workforce in commercial and industrial properties identified in Table 2.	Tracked on vehicle wheels.	The entire site will be concreted and therefore vehicles will only drive over concreted ground while they are on site. Delivery vehicles will discharge their load and then exit the site; therefore, any vehicle that will exit the site and use public highways will not have tracked over any mud. The site will be inspected on a daily basis by the site management staff and this will include a visual inspection of the access to the facility and the local highways. In the event that mud is noted to be present on the internal roads or the site entrance and highway, a road sweeper or bowser will be utilised as necessary. There will be a routine programme of housekeeping which will include the sweeping and cleaning of the routes around the site. It is therefore highly unlikely that any mud will be tracked onto the highways.	Unlikely due to measures in place.	Local nuisance Mud on roads is unsightly and can increase the likelihood or road traffic accidents.	Not significant due to management techniques employed.
Wind blown litter	Occupiers of domestic dwellings	Air then deposition	All wastes will be unloaded, stored and treated within an enclosed building, which should minimise the likelihood of litter in the external	Unlikely due to measures in place.	Local nuisance	Not significant due to management techniques

	listed in Table 2. Workforce in commercial and industrial properties identified in Table 2. Visitors of Caldicot Castle and Country Park.		areas of the site. There will be a daily site inspection and litter picking will be instigated if it is noticed that litter is present outside of the building. A very high standard of cleanliness will be maintained on site, with regular housekeeping, which includes sweeping and cleaning out storage areas, treatment areas, plant and machinery and all site surfaces. Due to the routine housekeeping, it is considered unlikely that the site will experience issues with litter.			employed.

Table A5: 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.
Plant failure or breakdown	Groundwater Surface water features listed in Table 2. Occupiers of domestic dwellings listed in Table 2. Workforce in commercial and industrial properties identified in Table 2.	Atmosphere Percolation Surface water run-off	There will be a programme of planned preventative maintenance of all plant and equipment. All plant and equipment will be maintained in accordance with the manufacturer's guidance. All plant and equipment will be switched off when not in regular use.	Unlikely due to measures in place.	Pollution of air Contamination to groundwater/surface water	Not significant due to management techniques employed.

	Visitors of Caldicot Castle and Country Park.					
Fire or failure to contain firewater	Groundwater Surface water features listed in Table 2. Occupiers of domestic dwellings listed in Table 2. Workforce in commercial and industrial properties identified in Table 2. Visitors of Caldicot Castle and Country	Atmosphere Surface water run-off	DPS has prepared a Fire Prevention Plan (Appendix E of the main application) which will be strictly adhered to. Separation of incompatible and of combustible materials and ignition sources. The facility will benefit from an impermeable surface and a suitable drainage system which will allow for the containment of fire water. All plant and equipment will be maintained in accordance with the manufacturer's requirements. All equipment and vehicles will be switched off when not in regular use. A 'No Smoking' policy will be employed on all storage and treatment areas. Smoking on site will only be permitted in designated areas. Provision of fire training and emergency drills.	Unlikely due to measures in place.	Local nuisance from smoke. Contamination of local groundwater and surface water. Damage to infrastructure	Not significant due to management techniques in place.

	Park.					
Leaks and spillages	Groundwater Surface water features listed in Table 2.	Percolation	All raw materials will be stored in suitable containers with secondary containment where appropriate. All containment will be inspected regularly and any necessary maintenance work will be completed as quickly as possible. If necessary, temporary repairs will be undertaken to prevent spillages. If a container is not reparable, then it will be replaced. Any oil changes or refuelling will be undertaken on areas of the site which benefit from impervious surfacing and contained drainage. All vehicles and items of plant and machinery will be inspected regularly and maintained.	Unlikely due to measures in place.	Contamination of local groundwater and surface water.	Not significant due to management techniques employed.
Flooding – due to failure of drainage systems	Groundwater Surface water features listed in Table 2.	Percolation Surface water run-off	With reference to NRW's flood risk maps, the application site is not situated within a flood risk zone. All drainage infrastructure will be regularly inspected and there will be regular maintenance of drains in accordance with a planned preventative maintenance scheme. This will prevent the flooding of the site due to blocked pipes or drains. There is a not a high risk of contaminated flood water, due to the non-hazardous nature of the wastes accepted on site and	Unlikely due to measures in place.	Contamination of local groundwater and surface water.	Not significant due to management techniques employed.

			the proposed flood risk management techniques.			
Unauthorised access/vandalism	Groundwater Surface water features identified in Table 2. Occupiers of domestic dwellings listed in Table 2. Workforce in commercial and industrial properties identified in Table 2.	Unauthorised access to the site.	The site is surrounded by security fencing and site entrances are protected by similar lockable gates, which are kept locked outside of operating hours. The security fencing and gates will be inspected on a daily basis and repairs will be made as soon as practicable. The site will benefit from 24 hour security and CCTV. There will be procedures in place that will require all visitors to the site to sign in on arrival and sign out on departure. If there are any incidents of authorised access, inspections will be undertaken on site, including all site fencing, and any maintenance works will be undertaken promptly.	Unlikely due to measures in place.	Damage to site infrastructure. Release of polluting materials to air (smokes or fumes) water or land.	Not significant due to management techniques employed.

Appendix B – Habitats Assessment

Habitats Risk Assessment

Purpose of Assessment

This risk assessment identifies the potential impacts of the proposed development on areas of ecological importance in the vicinity of the site. These receptors have been included in the ERA; however this section provides more specific detail regarding the nature of these potential receptors.

Statutory Designated Sites

To establish an appropriate radius for these searches, the Environment Agency's OPRA Scheme for Waste Facilities guidance 2014 has been referred to which Natural Resources Wales continues to follow. This guidance states that *'if your waste facility is within a certain distance of important nature conservation areas, such as sites designated under the Habitats Directive and/or the Countryside Rights of Way Act (2000), then the impact of emissions on the conservation areas must be assessed during the determination of your permit.'* The guidance goes on to provide the criteria for the distances at which statutory sites may be considered at risk of impacts from the emissions and therefore enables the determination of the distances that should be applied in the assessment. These criteria are as follows:-

	Sites	Distance
CRoW	Sites of Special Scientific Interest	2km
Habitats Directive	Ramsar Sites	• Not a landfill = 1km • Landfills that can attract gulls/crows = 5km • Other landfills = 2km
	Special Areas of Conservation (SAC)	
	Special Protection Areas (SPA)	
	Marine Protection Areas (MPA)	

As the proposal is not a landfill, the applicable distances are as follows:-

- Sites of Special Scientific Interest (SSSI) = 2km
- Ramsar Sites, Special Areas of Conservation (SAC), Special Protection Areas (SPA) and Marine Protection Areas (MPA) = 1km

In order to establish the presence of sites of ecological importance, a desk-based search for statutory designated sites was undertaken using the Multi-Agency Geographic Information for the Countryside

(MAGIC) mapping website. The results of the search identified four statutory designated sites which are identified in Table 2 and 3 of the main report. Details and the designation of these statutory sites are provided in further detail below in addition to a detailed risk assessment and mitigation strategy.

Gwent Levels – Magor and Undy SSSI

The Gwent Levels comprises an area of approximately 586.6 hectares (ha) and is centred at approximately National Grid Reference (NGR) ST 440 860. The site was first notified as a SSSI in 1989.

With reference to the Countryside Council for Wales citation, the Magor and Undy area supports a total of 43 nationally rare and notable invertebrate species such as the soldier fly, snail killing flu and the water beetle. The area also supports a number of rare and notable aquatic plant species including pondweed and the narrow-leaved water plantain.

Severn Estuary SSSI

The Severn Estuary comprises an area of approximately 15,950 ha and is centred at approximate NGR ST 480 830.

SSSI designation

With reference to the Countryside Council for Wales citation, the Severn Estuary was first notified as a SSSI in 1952 and was revised in 1989. The estuary is of international important for wintering and passage wading birds, with total winter populations averaging approximately 44,000 birds. The site holds the majority of the estuary's internationally important Curlew and Redshank populations and most of its nationally important Ringed Plover and Grey Plover populations.

Ramsar designation

As specified in the Ramsar citation dated December 1993, the Severn Estuary qualifies under Criterion 1 of the Ramsar convention due to its immense tidal range exceeded only by that occurring in the Bay of Fundy, Canada.

The Severn Estuary qualifies under Criterion 2b due to its unusual estuarine communities, reduced species diversity and high productivity. It also qualifies under Criterion 2c due to the significance of migratory fish and birds. With regards to birds, the Severn Estuary is noted to support over 20,000 waterfowl during the winter period which qualifies under Criterion 3a of the Ramsar convention.

During the same period, the Severn Estuary is noted to support internationally important populations of waterfowl which include European white-fronted geese, shelduck, gadwall, dunlin and redshank. As such, this qualifies the site under Criterion 3c.

SPA designation

Due to the significant populations of waterfowl during the winter period, the Severn Estuary qualifies as a SPA under Article 4.2 of the Birds Directive (2009/147/EC). It also qualifies under Article 4.1 by regularly supporting an internationally important wintering population of Bewick's swan which is an Annex 1 species under the Birds Directive.

SAC designation

On 10th December 2009, the site was designated as a SAC by the National Assembly for Wales. As specified in the Entry in the Register of European Sites for Wales citation, the Severn Estuary supports the following habitats and species which allow it to be designated as a SAC:-

- Twaite shad;
- Atlantic salt meadows;
- Estuaries;
- River Iamprey;
- Intertidal mudflats and sandflats;
- Sea Iamprey;
- Reefs; and
- Subtidal sandbanks

Bushy Close SSSI

The Bushy Close comprises an area of approximately 4.1 ha and is centred at approximate NGR ST 510 889. The site was first notified as a SSSI in 1971 and was revised in 1982.

With reference to the Countryside Council for Wales citation the site comprises a relic of ancient woodland that was once commonly found in England and Wales. This means that dating back to at least the 16th century woods have stood on this site.

Nedern Brook Wetlands Caldicot SSSI

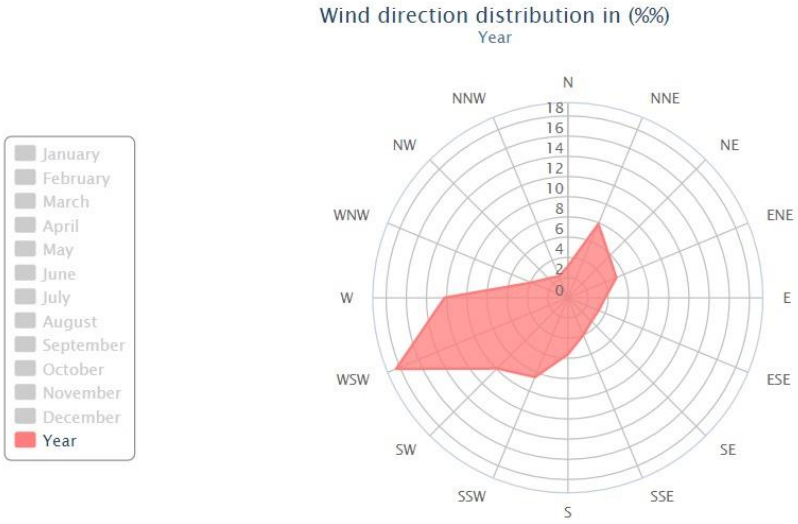
The Nedern Brook Wetlands Caldicot comprises an area of approximately 44.5 ha and is centred at approximate NGR SO 484 896. The site was first notified as a SSSI in 1988.

With reference to the Countryside Council for Wales citation, the area is an important for breeding birds, particularly waders, and was identified as a site of regional importance in a national survey of breeding waders of wet meadows carried out in 1982. It is of regional importance for breeding redshank, while other notable breeding species include lapwing, mute swan, shelduck, yellow wagtail and reedbunting.

The site is also important for other wintering species of wildfowl and waders. There are regular counts of up to 300 redshank, unusually high numbers for a freshwater site, and records of up to 1,000 wigeon. These figures illustrate the importance of this winter area of inland freshwater and its close inter-relationship with the Severn Estuary which is less than 3 miles away at its closest point.

Risk Assessment

The specific risk assessments completed for Odour, Noise and Dust Fugitive Emissions are detailed in the tables below. In many cases there is an interrelationship between these specific risk assessments and meteorological conditions, where relevant this has been identified. The pathway is determined by the location of the receptor relative to the site, the distance from the site boundary (m) and the frequency (likelihood) the prevailing wind will blow in the direction of the receptor as determined by historical windrose data available for Severn Beach (www.windfinder.net), approximately 6km south east from the application site.



The risk assessment tables represent the risk of exposure to a hazard before mitigating controls are put in place. The probability of exposure is therefore not necessarily a reflection of the severity of the impact on the receptor, which may not be sensitive to the hazard. The severity of the unmitigated consequence presumes the receptor has been exposed to the hazard. However, if the receptor is unlikely to be exposed, then the overall unmitigated risk is low and vice versa. The mitigated risk is the residual risk presented by the hazard after control measures have been instigated. This is the most realistic representation of the risk as effective controls will be maintained under the requirements of the environmental permit and DPS's Environmental Management System (EMS).

Table B1: 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?	Receptor Name	Distance	Direction	Downwind Frequency (%)	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.
Treatment of odorous waste streams	Severn Estuary (Wales)	608	S	3.1	Atmosphere	The proposed waste types are not putrescible in nature and therefore will not biodegrade to produce offensive odours. As such it is considered that the potential for odour to impact upon receptors beyond the site boundary is low. Strict waste acceptance procedures will be employed on site to minimise the risk of non-compliant wastes being accepted on site. All wastes will be received, stored and treated within the confines of a building. The building doors will be kept closed at all times unless vehicles and mobile plant are accessing the building. This	Unlikely as the storage and treatment of wastes will be undertaken within the confines of a building.	Odour annoyance	Not significant due to the nature of the proposed waste types and the management techniques employed.
	Gwent Levels - Magor and Undy	360	SW	7.9					
	Nedern Brook Wetlands Caldicot	1060	NW	3.8					
	Bushy Close	1,640	NE	9.9					

						will minimise the potential for any odours generated on site to impact receptors beyond the site boundary. All site operatives will be vigilant and report any non-conformances or odour issues to the Site Manager. Any non-conformances or odour issues will be reported to the Site Manager.			

Table B2: 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?	Receptor Name	Distance	Direction	Downwind Frequency (%)	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 to/from the site	Severn Estuary (Wales)	608	S	3.1	Atmosphere	The delivery of waste will be confined to the hours stipulated within the planning permission and will be undertaken in a controlled manner to keep noise/vibration to a minimum. The operation of the proposed facility will comprise a small number of vehicles movements (approximately four HGV movements per day). As such, it is considered that the noise impact from vehicle movements is low. All plant and equipment will have effective silencers where possible and be maintained in accordance with the manufacturer's requirements.	Unlikely due to measures in place	Intermittent noise and vibration disturbance	Not significant due to the low number of vehicle movements and the management techniques employed.
	Gwent Levels - Magor and Undy	360	SW	7.9					
	Nedern Brook Wetlands Caldicot	1060	NW	3.8					
	Bushy Close	1,640	NE	9.9					

						All plant and equipment will be switched off when not in regular use. 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.			
Noise from reversing vehicles	Severn Estuary (Wales)	608	S	3.1	Atmosphere	Utilisation of low level reversing signals. The operation of the proposed facility will comprise a small number of vehicles movements (approximately four HGV movements per day). As such, it is considered that the noise impact from vehicle movements is low. 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.	Intermittent during operating hours.	Intermittent noise and vibration disturbance.	Not significant due to the low number of vehicle movements and the management techniques employed.
	Gwent Levels - Magor and Undy	360	SW	7.9					
	Nedern Brook Wetlands Caldicot	1060	NW	3.8					
	Bushy Close	1,640	NE	9.9					

Loading/unloading of waste	Severn Estuary (Wales)	608	S	3.1	Atmosphere	The loading/unloading of waste will be undertaken in a controlled manner to keep noise/vibration to a minimum. The loading/unloading of waste will be undertaken within the confines of a building. The building doors will be kept closed at all times unless vehicles and mobile plant are accessing the building. This will minimise the potential for noise associated with the loading/unloading of wastes to impact upon receptors beyond the site boundary. Drop heights will be minimised to reduce the generation of noise. All plant and equipment will be switched off when not in regular use. 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.	Unlikely as loading/unloading activities will be undertaken within the confines of a building.	Intermittent noise and vibration disturbance	Not significant due to management techniques employed.
	Gwent Levels - Magor and Undy	360	SW	7.9					
	Nedern Brook Wetlands Caldicot	1060	NW	3.8					
	Bushy Close	1,640	NE	9.9					

Noise from treatment activity	Severn Estuary (Wales)	608	S	3.1	Atmosphere	All noise generating activities will be undertaken in a controlled manner to keep noise/vibration to a minimum. The proposed treatment activities will be undertaken within the confines of a building. The building doors will be kept closed at all times unless vehicles and mobile plant are accessing the building. This will minimise the potential for noise associated with plant and machinery to impact upon receptors beyond the site boundary. All plant and equipment will have effective silencers where possible and be maintained in accordance with the manufacturer's requirements. 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.	Intermittent during hours of operations. However, the proposed treatment activities will be undertaken within the confines of a building which minimises the probability of exposure.	Intermittent noise and vibration disturbance.	Not significant due to management techniques employed.
	Gwent Levels - Magor and Undy	360	SW	7.9					
	Nedern Brook Wetlands Caldicot	1060	NW	3.8					
	Bushy Close	1,640	NE	9.9					

Table B3: 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?	Receptor Name	Distance	Direction	Downwind Frequency (%)	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 emissions generated from the storage and treatment of waste	Severn Estuary (Wales)	608	S	3.1	Atmosphere	All wastes will be received, stored and treated within the confines of a building. The building doors will be kept closed at all times unless vehicles and mobile plant are accessing the building. As such, this will minimise the potential for dust associated with the storage and treatment of waste to impact upon receptors beyond the site boundary. The use of modern plant and	Unlikely as all wastes will be stored and treated within the confines of a building.	Local nuisance Potential respiratory health risk to public and staff	Not significant due to management techniques employed.
	Gwent Levels - Magor and Undy	360	SW	7.9					
	Nedern Brook Wetlands Caldicot	1060	NW	3.8					

	Bushy Close	1,640	NE	9.9		equipment shall be practiced and will be maintained in accordance with the manufacturer's requirements. This will reduce the generation of dust emissions. Regular housekeeping, including the cleaning, spraying or sweeping of all site surfaces and items of plant and machinery will be undertaken to minimise the build-up of dust on surfaces. The Site Manager will undertake daily visual assessments of dust levels and all site operatives will be vigilant and report any problems to the Site Manager.			
Dust emissions from vehicle movements	Severn Estuary (Wales)	608	S	3.1	Atmosphere	Vehicle speeds will be limited on site and access roads to prevent re-suspension and entrainment of dust. All wastes that will be delivered to site will be covered or sheeted to prevent	Unlikely due to measures in place.	Local nuisance. Potential respiratory health risk to public and staff	Not significant due to management techniques in place.
	Gwent Levels - Magor and Undy	360	SW	7.9					

	Nedern Brook Wetlands Caldicot	1060	NW	3.8		the generation of dust while the waste is in transit. Regular housekeeping, including the cleaning, spraying or sweeping of all site surfaces and items of plant and machinery will be undertaken to minimise the build-up of dust on surfaces. The Site Manager will undertake daily visual assessments of dust levels and all site operatives will be vigilant and report any problems to the Site Manager. If necessary, a road sweeper will be contracted to clean the site access road and Symondscliff Way where vehicles exit the site.			
	Bushy Close	1,640	NE	9.9					
To Water									
Contaminated surface water run-off	Severn Estuary (Wales)	608	S	3.1	Direct surface water run-off	The proposed waste types are non-hazardous in nature. As such, it is considered that	Unlikely due to measures in place.	Contamination of surface water bodies.	Not significant due to management

	Gwent Levels - Magor and Undy	360	SW	7.9	from site. Infiltration Percolation	there is not a high risk of contaminated run-off. All incoming wastes will be stored and treated within the confines of a building to ensure that the waste does not come into contact with incidental rainfall. All areas where waste activities will be undertaken will benefit from an impermeable surface with an appropriate drainage system that contains runoff. The drainage system will be regularly cleaned and maintained. Spill kits will be maintained on site at all times and all site operatives will be trained in the use of the spill kits.			techniques employed.
	Nedern Brook Wetlands Caldicot	1060	NW	3.8					
	Bushy Close	1,640	NE	9.9					
Pests/Scavenging Birds									
Birds and Pests	Severn Estuary (Wales)	608	S	3.1	Air Ground	The proposed waste types are not putrescible in nature and therefore will not attract pests	Unlikely as all wastes will be stored and	Local nuisance.	Not significant due to the nature of the

	Gwent Levels - Magor and Undy	360	SW	7.9		or scavenging birds. A very high standard of cleanliness will be maintained on site, with regular housekeeping, which includes sweeping and cleaning out storage areas, treatment areas, plant and machinery and all site surfaces. Due to the routine housekeeping and other pest control measures in place, it is considered unlikely that the site will experience issues with pests and scavenging birds. All wastes will be received, stored and treated within the confines of a building. The building doors will be kept closed at all times unless vehicles and mobile plant are accessing the building. As such, it is considered unlikely that pests and scavenging birds will be attracted to the facility. The Site Manager will undertake regular reviews of pests and scavenging birds at the site. All site operatives will	treated within the confines of a building.		proposed waste types and the management techniques employed.
	Nedern Brook Wetlands Caldicot	1060	NW	3.8					
	Bushy Close	1,640	NE	9.9					

						be vigilant and report any problems to the Site Manager.			

Conclusion

The proposed waste facility to be operated by DPS is located within the statutory distance of four ecological designated sites. This Habitats Risk Assessment has been prepared to assess the impact of the facility on the statutory sites.

The risk assessments detailed in the tables above indicate that the proposed activities are unlikely to cause any disturbance to the Statutory Designated Sites. As stated above in the tables, the majority of the proposed activities will be undertaken within a building which will minimise the risk of fugitive emissions to impact sensitive receptors beyond the site boundary. Furthermore, it is intended that a variety of management techniques will be employed on site to minimise and mitigate the potential impact of fugitive emissions that may be generated from the proposed activities.

As such, it has been concluded that with the use of appropriate mitigating controls where necessary, the facility will not present a significant risk to the statutory sites.