Risk assessment Document Ref: 850/ERA

Facility:	Waste Operation: Road Sweeper Facility for the treatment of waste to produce soil, soil substitutes and aggregate
Location:	Land off Church Road, Severn Beach, Bristol, BS35 4PW
Location of environmentally sensitive sites (km / m):	Greater than 500m
Risk assessment carried out by:	LJ Binnie/Land & Mineral Management
Date:	15-Feb-21

The scope of the permit and associated rules is defined by the following risk criteria:

Parameter 1	Permitted activities - The storage of waste (R13) and treatment to produce soil, soil substitutes roadstone and aggregate(R3,R5).
Parameter 2	Permitted waste types - Non Hazardous including sludge/liquids.
Parameter 3	Quantity of waste accepted at the facility: <62,500 tonnes per annum.
Parameter 4	The activities are not carried out within an Air Quality Management Area (AQMA) designated for particulate matter in the form of PM10.
Parameter 5	There are no point source discharges to controlled waters or groundwater with all surface waters retained and used on site in processing and any surpluses tankered from site.
Parameter 6	The activities are not to be carried out within 500m of a European Site (candidate or Special Area of Conservation, proposed or Special Protection Area or Ramsar site) or a Site of Special Scientific Interest (SSSI).
Parameter 9	The activities are not within 10 metres from any watercourse, 50 metres from any spring or well, or of any borehole not used to supply water for domestic or food production purposes or 250m from any spring or well or any borehole used to supply water for domestic or food production purposes.

Data and information				Judgement				Action (by permitting)	
Receptor	**Source**	**Harm**	**Pathway**	**Probability of exposure**	**Consequence**	**Magnitude of risk**	**Justification for magnitude**	**Risk management**	**Residual risk**
What is at risk? What do I wish to protect?	**What is the agent or process with potential to cause harm?**	**What are the harmful consequences if things go wrong?**	**How might the receptor come into contact with the source?**	**How likely is this contact?**	**How severe will the consequences be if this occurs?**	**What is the overall magnitude of the risk?**	**On what did I base my judgement?**	**How can I best manage the risk to reduce the magnitude?**	**What is the magnitude of the risk after management? (This residual risk will be controlled by Compliance Assessment).**
Local human population/Air Quality Management Area	Releases of particulate matter (dusts) and micro-organisms (bioaerosols).	Harm to human health - respiratory irritation and illness.	Air transport then inhalation.	High	Medium	**Medium**	Permitted waste types are non hazardous and do not include dusts, powders or loose fibres and have a low potential to produce bioaerosols, but the treatment activities will produce particulate matter so a high magnitude risk is estimated. The permitted level of throughput and potential size of the facility means there is potential for exposure if anyone is living or working close to the site (apart from the operator and employees). There is potential for increased dust generation from permitted activities during prolonged dry periods e.g. summer months.	The damp nature of the incoming materials reduces risk. Dust control measures are included in the Management Plan for the site. The site is also surrounded by either raised ground or landscaping and these site characteristics together with good housekeeping and waste operations taking place within the building will reduce the potential for windblown dust. The site is not in an AQMA.	Low
Local human population	As above	Nuisance - dust on cars, clothing etc.	Air transport then deposition	High	Low	**Medium**	As above. Local residents often sensitive to dust.	As above	Very low

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Local human population	As above	Nuisance - dust on cars, clothing etc.	Air transport then deposition	High	Low	**Medium**	As above. Local residents often sensitive to dust.	As above	Very low
Local human population, livestock and wildlife.	Litter	Nuisance, loss of amenity and harm to animal health	Air transport then deposition	Low	Low	**Low**	Local residents often sensitive to litter, however permitted waste types have low litter potential.	As above. Appropriate measures will include clearing litter arising from the activities from affected areas outside the site.	Very low
Local human population	Waste, litter and mud on local roads	Nuisance, loss of amenity, road traffic accidents.	Vehicles entering and leaving site.	Medium	Medium	**Medium**	Road safety, local residents often sensitive to mud on roads.	As above. Appropriate measures include clearing waste, litter and mud arising from the activities from affected areas outside the site are included in the Management System.	Very low
Local human population	Odour	Nuisance, loss of amenity	Air transport then inhalation.	Low	Low	**Low**	Local residents often sensitive to odour, however permitted waste types have low odour potential.	Wastes accepted are typically free from odour. Nevertheless control measures are included in the Management System.	Very low

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Local human population/Air Quality Management Area	Releases of particulate matter (dusts) and micro-organisms (bioaerosols).	Harm to human health - respiratory irritation and illness.	Air transport then inhalation.	High	Medium	**Medium**	Permitted waste types are non hazardous and do not include dusts, powders or loose fibres and have a low potential to produce bioaerosols, but the treatment activities will produce particulate matter so a high magnitude risk is estimated. The permitted level of throughput and potential size of the facility means there is potential for exposure if anyone is living or working close to the site (apart from the operator and employees). There is potential for increased dust generation from permitted activities during prolonged dry periods e.g. summer months.	The damp nature of the incoming materials reduces risk. Dust control measures are included in the Management Plan for the site. The site is also surrounded by either raised ground or landscaping and these site characteristics together with good housekeeping and waste operations taking place within the building will reduce the potential for windblown dust. The site is not in an AQMA.	Low
Local human population	As above	Nuisance - dust on cars, clothing etc.	Air transport then deposition	High	Low	**Medium**	As above. Local residents often sensitive to dust.	As above	Very low
Local human population	Noise and vibration	Nuisance, loss of amenity, loss of sleep.	Noise through the air and vibration through the ground.	Medium	Medium	**Medium**	Local residents often sensitive to noise and vibration however the use of water in processing operations will lessen noise and vibration generation.	The proximity to residential properties, the characteristics of the proposed operations and the noise associated with adjacent highway network (the site is located on a triangular piece of land bounded by the M49 motorway and A403 the Severn Tunnel to the north) will ensure that noise from the facility does not create an impact. Nevertheless control measures are included in the Management System.	Very low
Local human population	Scavenging animals and scavenging birds	Harm to human health - from waste carried off site and faeces. Nuisance and loss of amenity.	Air transport and over land	Low	Medium	**Low**	Permitted wastes unlikely to attract scavenging animals and birds or become nesting / breeding sites.	The nature of the wastes and waste operation will ensure that there is no impact associated scavenging animals and scavenging birds. Nevertheless control measures are included in the Management System.	Very low

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Local human population	As above	Nuisance - dust on cars, clothing etc.	Air transport then deposition	High	Low	**Medium**	As above. Local residents often sensitive to dust.	As above	Very low
Local human population	Pests (e.g. flies)	Harm to human health, nuisance, loss of amenity	Air transport and over land	Low	Medium	**Low**	Permitted waste types are highly unlikely to attract pests.	As above	Very low
Local human population and local environment	Flooding of site	If waste is washed off site it may contaminate buildings / gardens / natural habitats downstream.	Flood waters	Low	Low	**Low**	Permitted waste types are inert and non hazardous so any waste washed off site will add to the volume of the local post-flood clean up workload, rather than the hazard.	Sealed drainage systems are employed and the site is enclosed. Suitable management methods are included in the Management System.	Very low
Local human population a gaining unauthorised access to the waste operation	All on-site hazards: wastes; machinery and vehicles.	Bodily injury	Direct physical contact	Medium	Low	**Low**	Permitted waste types are non hazardous therefore only a low magnitude risk is estimated	Site security measures to prevent unauthorised access are employed. Their maintenance is included in the Management System.	Very low
Local human population and local environment.	Arson and / or vandalism causing the release of polluting materials to air (smoke or fumes), water or land.	Respiratory irritation, illness and nuisance to local population. Injury to staff, fire fighters or arsonists/vandals. Pollution of water or land.	Air transport of smoke. Spillages and contaminated firewater by direct run-off from site and via surface water drains and ditches.	Medium	Low	**Low**	Permitted waste types do not include any flammable materials so a low magnitude risk is estimated.	Site security measures to prevent unauthorised access are employed. Their maintenance is included in the Management System which also includes methods for controlling fire.	Very low

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Local human population	As above	Nuisance - dust on cars, clothing etc.	Air transport then deposition	High	Low	**Medium**	As above. Local residents often sensitive to dust.	As above	Very low
Local human population and local environment	Accidental fire causing the release of polluting materials to air (smoke or fumes), water or land.	Respiratory irritation, illness and nuisance to local population. Injury to staff or fire fighters. Pollution of water or land.	As above.	Medium	Low	**Low**	As above.	As above. Permitted activities do not include the burning of waste and waste is non-combustible.	Very low
All surface waters close to and downstream of site.	Spillage of liquids, leachate from waste, contaminated rainwater run-off from waste e.g. containing suspended solids.	Acute effects: oxygen depletion, fish kill and algal blooms	Direct run-off from site across ground surface, via surface water drains, ditches etc.	Low	Low	**Low/Medium**	Permitted waste types include inert sludges/ liquids. As a result the uncontrolled consequences are low/medium. There are no point source emissions to surface or ground water associated with the waste activities which are undertaken within a building. The probability of exposure is therefore very low.	All liquids/sludges are managed with secondary containment. The site is enclosed which reduces risk. Wastes from potentially contaminated sites will not be accepted. Maintenance of the surfacing and drainage arrangements are included in the Management System.	Very low
All surface waters close to and downstream of site.	As above	Chronic effects: deterioration of water quality	As above. Indirect run-off via the soil layer	Low	Low	**Low**	Waste types are non-hazardous so harm is likely to be temporary and reversible.	As above	Very low

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Local human population	As above	Nuisance - dust on cars, clothing etc.	Air transport then deposition	High	Low	**Medium**	As above. Local residents often sensitive to dust.	As above	Very low
Abstraction from watercourse downstream of facility (for agricultural or potable use).	As above	Acute effects, closure of abstraction intakes.	Direct run-off from site across ground surface, via surface water drains, ditches etc. then abstraction.	Low	Low	**Low**	Watercourse must have medium / high flow for abstraction to be permitted, which will dilute contaminated run-off.	As above	Very low
Groundwater	As above	Chronic effects: contamination of groundwater, requiring treatment of water or closure of borehole.	Transport through soil/groundwater then extraction at borehole.	Low	Low	**Low**	Permitted wastes unlikely to contaminate groundwater.	As above	Very low
Local human population	Contaminated waters used for recreational purposes	Harm to human health - skin damage or gastro-intestinal illness.	Direct contact or ingestion	Low	Medium	**Low**	Unlikely to occur, but might restrict recreational use.	As above	Very low

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Protected sites - European sites and SSSIs	Any	Harm to protected site through toxic contamination, nutrient enrichment, smothering, disturbance, predation etc.	Any	Medium	Medium	**Medium**	Waste operations may cause harm to and deterioration of nature conservation sites.	No sites within 750 metres. Site infrastructure, waste types to be accepted and the Management Plan employed control risk.	Very low

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