



SKIP A HOY LTD, INTERNATIONAL TRADING, RAINHAM

ENVIRONMENTAL RISK ASSESSMENT

This Environmental Risk Assessment has been prepared for the waste operations at Skip A Hoy Ltd, International Trading Estate, Rainham. The operators are submitting an application for a bespoke Environmental Permit for the operation of a household, commercial and industrial waste transfer station, with the capacity to accept 75,000 tonnes per annum of household, commercial and industrial waste.

Lustre Consulting were commissioned by GBE Environmental Solutions Ltd, on behalf of the applicant to prepare an Environmental Risk Assessment to support the permit application. This Environmental Risk Assessment should be read in conjunction with the Application Site Condition Report (SCR) (Ref: 3903: Skip A Hoy Ltd, International Trading Estate, Application Site Condition Report) which provides further information on the environmental setting.

The Environmental Risk Assessment has been carried out in accordance with the Environment Agency's Horizontal Guidance Note H1¹ and associated annexes².

Site Description

The site is located within the International Trading Estate, Rainham, located off Manor Way, as shown in Drawing 3903_001 of the SCR. The site currently comprises a vacant warehouse building and yard area.

The site is situated within a built up industrial area and is bordered the south by attached industrial units within the International Trading Estate area with industrial units and yards present to the north, east and west.

Proposed Bespoke Permitted Activities

The site requires a bespoke Environmental Permit for the operation of a household, commercial and industrial waste transfer station, with the capacity to accept 75,000 tonnes per annum of household, commercial and industrial waste. The waste codes accepted at the site are detailed in the EWC codes proposed for Skip A Hoy Ltd document.

Under the proposed bespoke Environmental Permit operations, the site will undertake the storage (keeping) prior to removal, and treatment (all types of handling/processing) of waste. Waste treatment processes which will be carried out on site will include the following:

- Sorting (with loading shovel/360° excavator or by hand)
- Screening (by using appropriate mechanical screening plant and equipment)
- Separation (by using mechanical screening plant/equipment and by hand)

All waste materials brought to the site will be via company skips, no third party tips will be allowed at the site.

Under the proposed bespoke Environmental Permit, all waste operations will be undertaken within the onsite building, there will be no external storage or sorting of wastes. The facility as a whole will have the capacity to store up to 500 tonnes of mixed wastes at any one time.

All deliveries will report to the site office / weighbridge where the driver is asked to describe the nature of the waste in order to check that the description matches the documentation and that the site is permitted to accept the waste. The carriers license, duty of care documentation and waste transfer note where applicable will also be inspected at this point. All waste shall be inspected to ensure any loads containing

¹ Environment Agency, Horizontal Guidance Note H1, Overview Document, December 2011

² Environment Agency, H1 Annex A – Amenity and accident risks from installations and waste operations, December 2011, Annex F – Air, Emissions, December 2011, Annex G – Disposal or recovery of waste produced onsite, December 2011, Annex J – Groundwater, December 2011.

non-conforming waste are rejected prior to tipping and that significantly odorous wastes are also not permitted to enter the site. Only waste compliant with the permitted EWC Codes will be accepted at the site.

If the load does not match the description or EWC Codes, the load will be rejected and the Environment Agency informed. Any rejected wastes will be recorded in the site diary.

The vehicle will then be directed to the banksman onsite to discharge the load within Bay 1 (Mixed Waste Reception Bay) within the main building, as shown on Drawing 3903-002 of the SCR. At this point further visual inspection of the waste will take place to ensure the waste matches the description on the transfer note. The waste will also be checked for non-conforming waste within the load whilst the driver of the delivery vehicle is on site. If the load contains non-conforming waste the waste will be reloaded, if safe to do so and rejected. If the waste discharged correctly matches the transfer note description the vehicle will be directed back to the weighbridge to collect the weighbridge ticket/transfer note.

Following the deposit of the received mixed waste within Bay 1, the load will then be pre sorted by hand into recyclable materials such as paper/ cardboard, wood/timber, metals, and transferred into the appropriate recycling skips within the waste operation building. Loads which are delivered to the site and known to contain predominantly inert waste will be directed to Bay 4 for storage. The pre-sorted material will then be transferred and loaded into the hopper using a 360° grab for mechanical sorting. The waste will then be transferred directly into a trommel where fines are separated by size and dropped beneath the trommel and deposited and stored in Bay 2, as shown on Drawing 3903-002. The remaining material is then deposited and stored in Bay 3, which will consist of non-recyclable wastes. These will then be loaded onto a 35yd roll on off ready for disposal.

The recyclable sorted wastes will be stored in 8 yard skips, which once full will be transferred to an appropriate recycling/recovery facility.

The main waste types which will be accepted and stored at the site including proposed storage quantities in m³ are as follows:

- Bay 1 – Incoming Waste, 190m³, 1 – 7 days storage time,
- Bay 2 – Trommel Fines, 16m³, 1 – 7 days storage time,
- Bay 3 – Residual Waste, 100m³, 1 – 7 days storage time,
- Bay 4 – Soil / hardcore, 16m³, 3 month storage time
- 8 yard skip – Wood, 3 month storage time
- 8 yard skip – Metal, 3 month storage time
- 8 yard skip – cardboard, 3 month storage time.

There will be no bulk fuel storage on site.

Vehicles to remove the segregated material stored within the purpose built storage bays shall be planned by the site operator to ensure the waste within the storage bays is kept below the height of 1.5 meters as marked on the bay walls. If the site is nearing capacity the site shall cease to accept waste until the storage levels are within the 1.5 meter height and contained within the designated storage areas. All waste removed from the site shall be accompanied by a waste transfer note.

Any segregated residual mixed wastes will be removed progressively to a suitably licensed disposal site and be accompanied by a waste transfer note.

All waste inputs and outputs will be entered onto quarterly and annual returns spreadsheets which are submitted to the Environment Agency.



Assessment Methodology

A qualitative environmental risk assessment has been undertaken in accordance with the Environment Agency's Horizontal Guidance Note H1³ in order to identify and assess the potential hazards and risks associated with the proposed activities.

The risk assessment follows a tiered, four staged approach:

1. Identification of the potential hazards and risks associated with the proposed activity;
2. Assessment of the risks to check they are acceptable;
3. Identification of suitable remedial measures to control the risks, if necessary;
4. Presentation of the assessment findings.

Each stage has been completed in turn, with the findings detailed below.

1) Identification of Hazards and Risks

The following hazards and risks are considered relevant to the proposed activities and permit application:

- Fugitive emissions to land (e.g. leachate / surface runoff);
- Fugitive emissions to controlled waters (e.g. leachate / surface runoff);
- Fugitive emissions to air (e.g. dust, windblown litter);
- Waste;
- Odour;
- Noise;
- Pests;
- Accidents / Spills.

The following hazards and risks are not considered relevant to the proposed activities and permit application and as such have not been assessed further:

- Global warming potential;
- Controlled releases to air;
- Controlled discharges to surface water;
- Controlled discharges to groundwater.

The following receptors have been identified at the site, as shown in Drawing 3903_003 of the SCR:

- Land (e.g. shallow soils underlying the site);
- Shallow Groundwater within the Taplow Gravel Member superficial deposits;
- Surface water (within the Rainham Creek located approximately 480m east of the site);
- Air;
- Future site users;
- Surrounding site users (within the wider industrial area and dwellings located approximately 98m to the north of the site).
- Local Wildlife and ecologically sensitive sites (only where viable potential pollutant pathways are present) within the identified SSSIs and Local Nature Reserves - Rainham Marshes Local Nature Reserve 782m SE, Inner Thames Marshes SSSI 781m SE, Ingrebourne Marshes SSSI 465m and Ingrebourne Valley Local Nature Reserve 733m E.

Other sensitive receptors including groundwater abstractions and ancient woodland are not located within close proximity of the site and have therefore not been considered further.

³ Environment Agency, Horizontal Guidance Note H1, Overview Document, December 2011



Deep groundwater has not been considered further as a sensitive receptor as the bedrock geology comprises low permeability London Clay Formation. The London Clay Formation is a low permeability clay geology, with a very low porosity and permeability. As such this stratum is not anticipated to be a viable groundwater aquifer or capable of storing or transmitting significant quantities of groundwater. Any groundwater present will likely be held within discontinuous more granular lenses and be of limited value and low significance. The potential for significant mobilisation of contamination within this stratum is therefore very low. As such, the vertical mixing of shallow groundwater to deeper groundwater (Lambeth Group) can be discounted.

Assessment of Risks

The risk assessment is summarised in the Table below, focusing on the potential hazard, identified receptor and pathway. The purpose of the risk assessment is to assess these source – pathway – receptor linkages. The potential for a pollution event to occur is evaluated by determining how likely a problem is to occur (e.g. likelihood) and how serious the harm might be (e.g. consequence). The consequence is essentially a measure of the severity of a hazard and sensitivity of the receptor (e.g. aquifer type or end user). The risk assessment also takes into account the proposed risk management / control measure, thereby resulting in a residual risk.





Hazard	Receptor	Pathway	Risk Management	Probability of Exposure	Consequence	Residual Risk
ODOUR						
Smells from soil and hardcore stockpiles.	Site users and surrounding site users (industrial and dwellings) and ecologically sensitive sites	Air	All wastes will be appropriately stockpiled in line with the permit conditions. Long term storage is not anticipated with stock efficiently sorted and transferred to final destinations. Soil and hardcore are not considered to be odorous wastes. Any strongly odorous loads will not be accepted at the site, as per the sites Environmental Management Plan. All wastes will be sorted, treated and stored within the onsite warehouse building. No wastes will be stored externally, preventing odour nuisances.	Unlikely	Odour annoyance may have more impact in summer months when temperatures are higher and people are outdoors.	Not significant
Smells from mixed / household wastes.	Site users and surrounding site users (industrial and dwellings) and ecologically sensitive sites.	Air	All wastes will be appropriately stockpiled in line with the permit conditions. Long term storage is not anticipated with stock efficiently sorted and transferred to final destinations. If required, site workers will wear appropriate PPE in order to minimise exposure to odours. Any loads collected with a strong odour emission will be reported by the driver collecting the load to the office and be redirected directly to landfill. Sorted mixed wastes will also be sorted, treated and stored within the onsite warehouse building, which will limit the potential for odorous emissions and the waste will be condition with water sprinklers as required. All black bag waste will be removed from site on the next available landfill skip in order to minimize the potential for odours.	Low likelihood	Odour annoyance may have more impact in summer months when temperatures are higher and people are outdoors.	Not significant if carefully managed, particularly for site workers within the commercial and industrial building.





Hazard	Receptor	Pathway	Risk Management	Probability of Exposure	Consequence	Residual Risk
NOISE AND VIBRATION						
Engine noise and reverse warnings from site vehicles during deliveries and loading	Site users and surrounding site users (industrial and dwellings) and ecologically sensitive areas	Surrounding sites are close enough for noise to be audible, however surrounding sites are noted to comprise a mixture of industrial and commercial activities only (nearest residential properties c. 98m N)	Plant and machinery shall be serviced and maintained to ensure the acceptable noise levels at the nearest sensitive receptor are adhered to. Operations that generate noise will only take place between 0700 hrs and 1800 hrs Monday to Friday and 0700 hrs and 1300 hrs on Saturdays in order to minimise disturbance. Site users will wear appropriate personal protective equipment (PPE) such as ear defenders and ear plugs as necessary. Any complaints will be investigated, recorded and appropriate action taken. Regulators will be informed.	Noise sources will be introduced as a result of activity, however predominantly limited to specified working hours and likely to be intermittent (during deliveries and loading)	Nuisance resulting from potential complaints, however surrounding land uses are predominately industrial with similar noise sources	Not significant
Noise and vibration associated with waste tipping and processing - tipping of hardcore and other wastes and operation of the trommell screen.	Site users and surrounding site users (industrial and dwellings) and local wildlife	Surrounding sites are close enough for noise to be audible, however surrounding sites are noted to comprise a mixture of industrial and commercial activities only (nearest residential properties c. 98m)	Plant and machinery shall be serviced and maintained to ensure the acceptable noise levels at the nearest sensitive receptor are adhered to. Operations that generate noise will only take place between 0700 hrs and 1800 hrs Monday to Friday and 0700 hrs and 1300 hrs on Saturdays in order to minimise disturbance. Site users will wear appropriate personal protective equipment (PPE) such as ear defenders and ear plugs as necessary. All waste processing activities will take place within the site buildings in order to ensure that any noise generated is mitigated to an acceptable level at the site boundary. Any complaints will be investigated, recorded and appropriate action taken. Regulators will be informed. Drop heights to be kept to a minimum, particularly when loading empty tipper wagon/skip/container to minimise noise/vibration. Waste drop heights will be kept low in order to minimize noise and vehicle speed limits will be capped at 5 mph when moving around the site. Engines to be switched off when not in use. No shaking of vehicle bodies whilst raised.	Noise sources will be introduced as a result of activity, however predominantly limited to specified working hours and will be undertaken within the site buildings. Noise is likely to be continuous during operational hours. However, all waste processing and storage activities will take place within the site building.	Nuisance resulting from potential complaints, however surrounding land uses are predominately industrial with similar noise sources.	Not significant if management techniques are effective





Hazard	Receptor	Pathway	Risk Management	Probability of Exposure	Consequence	Residual Risk
Noise associated with mobile plant (360 degree grab / excavator)	Site users and surrounding site users (industrial and dwellings) and local wildlife	Surrounding sites are close enough for noise to be audible, however surrounding sites are noted to comprise a mixture of industrial and commercial activities only (nearest residential properties c. 98m N)	<p>Plant and machinery shall be serviced and maintained to ensure the acceptable noise levels at the nearest sensitive receptor are adhered to. Operations that generate noise will only take place between 0700 hrs and 1800 hrs Monday to Friday and 0700 hrs and 1300 hrs on Saturdays in order to minimise disturbance. Site users will wear appropriate personal protective equipment (PPE) such as ear defenders and ear plugs as necessary.</p> <p>All waste processing activities will take place within the site buildings in order to ensure that any noise generated is mitigated to an acceptable level at the site boundary. Any complaints will be investigated, recorded and appropriate action taken. Regulators will be informed.</p> <p>Drop heights to be kept to a minimum, particularly when loading empty tipper wagon/skip/container to minimise noise/vibration. Waste drop heights will be kept low in order to minimize noise and vehicle speed limits will be capped at 5 mph when moving around the site. Engines to be switched off when not in use. No shaking of vehicle bodies whilst raised.</p>	Noise sources will be introduced as a result of activity, however predominantly limited to specified working hours and likely to be intermittent – mobile plant will only be operational when required and all waste processing and storage activities will take place within the site building.	Nuisance resulting from potential complaints, however surrounding land uses are predominately industrial with similar noise sources.	Not significant





Hazard	Receptor	Pathway	Risk Management	Probability of Exposure	Consequence	Residual Risk
FUGITIVE EMISSIONS TO AIR						
Dust generated from waste stockpiles and general operational areas.	Site users and surrounding site users (industrial and dwellings)	Windblown dust	<p>The following technical guidance actions will be taken to reduce dust: All waste processing and storage activities will take place within the site building, no external storage or processing will be undertaken. The potential for the facility to generate dust will be controlled by a mister system within the onsite building, located above the waste tipping and storage bays. In addition, handheld hoses will also be present for additional dust suppression during the tipping of identified visually problematic loads. Any dust settled by the dust suppression system will be swept to ensure there will be no deposits of residue outside the building on the hard surface or access roads. Daily litter picking and dust, fibres and particulate levels inspections will be undertaken by appropriately trained site operatives. All staff will be appropriately trained in dampening down and dust control. The closest ecologically sensitive site is present 465m east of the site. Based on the above risk mitigation measures and the distance of the ecologically sensitive site from the study site, any dust/fibre/particulate emissions are not considered to have an adverse impact on wildlife and ecology within the SSSI.</p>	Dust could be generated onsite and potentially reach the surrounding site users	Nuisance – dust on cars, clothing etc however the surrounding land uses are predominantly industrial.	Low if management techniques are implemented.
	Ecologically Sensitive Sites			Dust could be generated onsite and potentially impact local wildlife, though closest ecologically sensitive site located 465m east of the site.	Damage to habitat	Low if management techniques are implemented.
Windblown litter and soils	Site users and surrounding site users (industrial and dwellings)	Airborne transportation	<p>All site boundaries will be inspected daily for windblown litter etc. All storage operations are located internally limiting the potential for the airborne transportation. Good level of housekeeping (e.g. road sweeping and litter picking if necessary) will minimise the source of litter and soils. The closest ecologically sensitive site is present 465m east of the site. Based on the above risk mitigation measures and the distance of the ecologically sensitive site from the study site, any dust/fibre/particulate emissions are not considered to have an adverse impact on wildlife and ecology within the SSSI.</p>	Litter and soils could be blown across the site and potentially reach immediate surrounding sites, however all storage areas are located within onsite buildings which will limit the potential for airborne transportation. closest	Nuisance and aesthetic impact resulting in potential complaints, however surrounding land uses are predominantly industrial.	Low if management techniques are implemented.
	Ecologically sensitive sites.				Damage to habitat	Low if management techniques are implemented.





Hazard	Receptor	Pathway	Risk Management	Probability of Exposure	Consequence	Residual Risk
				ecologically sensitive site located 465m east of the site.		





Hazard	Receptor	Pathway	Risk Management	Probability of Exposure	Consequence	Residual Risk
FUGITIVE EMISSIONS TO WATER						
Leachate / surface run – off from the waste storage areas.	Groundwater (Secondary A Aquifer)	Infiltration through shallow soils	All storage and operational areas will be located on impervious concrete hardstanding and located internally within the onsite building. A sealed drainage system will be present onsite.	Unlikely given the presence of hardstanding across the site (acting as a suitable barrier)	Pollution of shallow aquifer.	Not significant
	Surface Water (Rainham Creek and associated drainage channels)	Infiltration through shallow soils and migration via baseflow	All storage and operational areas will be located on impervious concrete hardstanding, and located internally within the onsite building. A sealed drainage system will be present onsite.	Unlikely given the presence of hardstanding across the site (acting as a suitable barrier)	Pollution of controlled surface waters	Not significant
Spills and leakages from the onsite equipment.	Groundwater (Secondary A Aquifer)	Infiltrations through shallow soils	All storage and operational areas will be located on impervious concrete hardstanding. All equipment will be maintained to minimise potential leakages and spillages.	Unlikely given the presence of hardstanding across the site (acting as a suitable barrier)	Pollution of shallow aquifer	Not significant
	Surface Water (Rainham Creek and associated drainage channels)	Infiltration through shallow soils and migration via baseflow	All storage and operational areas will be located on impervious concrete hardstanding. All equipment will be maintained to minimise potential leakages and spillages.	Unlikely given the presence of hardstanding across the site (acting as a suitable barrier)	Pollution of controlled surface waters	Not significant
Mobilisation of contaminants within the ground underlying the site associated with the historical industrial use of the site.	Groundwater (Secondary A Aquifer)	Infiltrations through shallow soils	The presence of impervious concrete hardstanding across the site and a sealed site drainage system will reduce the potential for infiltration across the site and therefore significantly reduce the mobilisation of any shallow contaminants within the underlying soils associated with the historical industrial land uses.	Unlikely given the presence of hardstanding across the site (acting as a suitable barrier)	Pollution of shallow aquifer.	Not significant
	Surface Water (Rainham Creek and associated drainage channels)	Infiltration through shallow soils and migration via baseflow	The presence of impervious concrete hardstanding across the site and a sealed site drainage system will reduce the potential for infiltration across the site and therefore significantly reduce the mobilisation of any shallow contaminants within the underlying soils associated with the historical industrial land uses.	Unlikely given the presence of hardstanding across the site (acting as a suitable barrier)	Pollution of controlled surface waters	Not significant
FUGITIVE EMISSIONS TO LAND						





Hazard	Receptor	Pathway	Risk Management	Probability of Exposure	Consequence	Residual Risk
Leachate / surface run – off from the off from the waste storage areas	Shallow soils	Infiltration through shallow soils	<p>All storage and operational areas are to be situated on impervious concrete hardstanding and located within the onsite warehouse building. Surface water runoff will be directed to surface water drains with connections to a sealed storage tank.</p> <p>Hardstanding will be regularly inspected and maintained throughout the lifetime of the permit. Surface water runoff will therefore be controlled to comply with regulations and the sealed water tank will be emptied by tanker to an appropriate licensed waste facility.</p> <p>Given the controls in place any potential contaminants from the waste transfer station are unlikely to impact the identified SSSIs and LNR. Any contaminants will be diluted and dispersed within the underlying aquifer if present.</p>	Unlikely given the presence of hardstanding across the site (acting as a suitable barrier) and controlled drainage.	Pollution of shallow soils	Not significant
	Ecologically sensitive sites			Closest sensitive ecological site present 465m east from the site.	Damage to habitat	Not significant
Spills and leakages from the onsite equipment	Shallow soils	Infiltration through shallow soils	<p>All equipment will be maintained to minimise potential leakages and spillages. Surface water runoff will be directed to surface water drains with connections to a sealed storage tank.</p> <p>Hardstanding will be regularly inspected and maintained throughout the lifetime of the permit. Surface water runoff will therefore be controlled to comply with regulations and the sealed water tank will be emptied by tanker to an appropriate licensed waste facility.</p> <p>Given the controls in place any potential contaminants from the waste transfer station are unlikely to impact the identified SSSIs and LNR. Any contaminants will be diluted and dispersed within the underlying aquifer if present.</p>	Unlikely given the presence of hardstanding across the site (acting as a suitable barrier) and controlled drainage.	Pollution of shallow soils	Not significant if fuel storage is compliant with current technical guidance.
	Ecologically sensitive sites			Closest sensitive ecological site present 465m east from the site	Damage to habitat	Not significant
PESTS						
Flies maybe present associated with the storage of wastes. These may migrate off site to surrounding industrial sites and dwellings	Surrounding site users (industrial and dwellings)	Airborne Transportation	<p>All wastes will be stored internally within the main waste building limiting the potential to attract flies and other vermin.</p> <p>Wastes will be regularly removed from the site limiting the potential to attract vermin.</p> <p>Regular inspections for vermin and flies by nominated personnel.</p>	Unlikely to impact surrounding sites as the wastes will be stored internally.	Potential to spread disease and adverse impact on human health.	Low if management techniques are implemented.
VISIBLE PUMES TO AIR AND WATER						





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There are no visible impacts beyond the site boundary.	No further assessment required.					
ACCIDENTS						
Leaks from equipment and storage areas escaping the containment.	Shallow soils	Infiltration via drainage system and cracks in surface cover.	Spillage kit will be located onsite. Site workers will be trained in its use. All storage and operational areas will be situated on hardstanding which will be regularly inspected and maintained throughout the life of the permit.	Very unlikely if appropriate containment measures are used.	Pollution of shallow soils	Not significant
	Groundwater (Secondary A Aquifer)	Infiltrations through shallow soils	Spillage kit will be located onsite. Site workers will be trained in its use. All storage and operational areas will be situated on hardstanding which will be regularly inspected and maintained throughout the life of the permit.	Very unlikely if appropriate containment measures are used.	Pollution of shallow aquifer	Not significant
	Surface Water (Rainham Creek and associated drainage channels)	Infiltration through shallow soils and migration via baseflow	Spillage kit will be located onsite. Site workers will be trained in its use. All storage and operational areas will be situated on hardstanding which will be regularly inspected and maintained throughout the life of the permit.	Very unlikely if appropriate containment measures are used.	Pollution of controlled surface waters	Not significant
	Ecologically sensitive sites	Infiltration through shallow soils and migration via baseflow	Spillage kit will be located onsite. Site workers will be trained in its use. All storage and operational areas will be situated on hardstanding which will be regularly inspected and maintained throughout the life of the permit. Given the controls in place any potential contaminants from the waste transfer station are unlikely to impact the identified SSSIs and LNR. Any contaminants will be diluted and dispersed within the underlying aquifer if present.	Very unlikely if appropriate containment measures are used.	Damage to habitat and wildlife	Not significant
Fire posing a hazard to site users, emissions to air and firewater discharge to drainage system.	Site users, surrounding site users and air and ecologically sensitive sites	Direct contact, windblown ash, leaching of freshwater discharge.	Site will comply with the permitted Fire Prevention Plan, prepared in line with current EA guidance. If a fire starts emergency services will be contacted immediately. Plant and machinery will be stored away from the combustible waste stockpiles at the end of each working day to minimise risk of vandalism and intentional fire starting. The site will be appropriately secured outside of working hours to minimise risk of vandalism. In the case of the fire starting, a water supply will be available as well as small stock of inert material / sand to smother the fire.	Fire could potentially be a significant hazard. However the management actions should prevent this from happening.	Fatalities, injury, pollution incidents, loss of wildlife	Low if Fire Prevention Plan is adhered to





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			<p>An incident report will be carried out as result of any fire and control measures and procedures implemented to prevent reoccurrence.</p> <p>A no smoking policy will be operated onsite.</p> <p>Fire extinguishers will be kept onsite in case of a small fire.</p> <p>A fire assembly point will be outside of the main site entrance.</p> <p>The site manager will be responsible for actions in the event of a fire and all staff will be trained on emergency and fire procedures as part of induction / safety training.</p> <p>The presence of hardstanding and the sealed drainage system including water storage tank will contain firewater and testing can be carried out if necessary prior to removal from site or discharge to foul sewer.</p>			
Spills, leakages from plant / machinery within the operational area.	Shallow soils	Infiltration through shallow soils	<p>All storage and operational areas will be situated on impervious concrete hardstanding with appropriate containment.</p> <p>Hardstanding will be regularly inspected and maintained throughout the lifetime of the permit.</p> <p>All staff and plant operators to be appropriately trained and qualified.</p> <p>Plant and machinery will be maintained to manufacturer's standards to ensure emission levels are maintained and to minimise any leakages / spillages.</p> <p>In the event of breakdowns of machinery, it will be appropriately stored on hardstanding and recovery and repair arranged. A back up machine will be hired in.</p> <p>Emergency plan and spill kits will be available at all times.</p>	Unlikely given the presence of hardstanding across the operational areas of the site (acting as a suitable barrier) and management actions.	Pollution of shallow soils	Not significant.
	Groundwater (Secondary A Aquifer)	Infiltration via shallow soils	<p>All storage and operational areas will be located internally and on impervious concrete hardstanding.</p> <p>Hardstanding will be regularly inspected and maintained throughout the lifetime of the permit.</p> <p>All staff and plant operators to be appropriately trained and qualified.</p> <p>Plant and machinery will be maintained to manufacturer's standards to ensure emission</p>	Unlikely given the presence of hardstanding across the operational areas of the site (acting as a suitable barrier) and management actions.	Pollution of shallow aquifer	Not significant





Hazard	Receptor	Pathway	Risk Management	Probability of Exposure	Consequence	Residual Risk
			<p>levels are maintained and to minimise any leakages / spillages.</p> <p>In the event of breakdowns of machinery, it will be appropriately stored on hardstanding and recovery and repair arranged. A back up machine will be hired in.</p> <p>Emergency plan and spill kits will be available at all times.</p>			
	Surface Water (Rainham Creek and associated drainage channels)	Infiltration through shallow soils and migration via baseflow	<p>All storage and operational areas will be located internally and on impervious concrete hardstanding.</p> <p>Hardstanding will be regularly inspected and maintained throughout the lifetime of the permit.</p> <p>All staff and plant operators to be appropriately trained and qualified.</p> <p>Plant and machinery will be maintained to manufacturer's standards to ensure emission levels are maintained and to minimise any leakages / spillages.</p> <p>In the event of breakdowns of machinery, it will be appropriately stored on hardstanding and recovery and repair arranged. A back up machine will be hired in.</p> <p>Emergency plan and spill kits will be available at all times.</p>	Unlikely given the presence of hardstanding across the operational areas of the site (acting as a suitable barrier) and management actions.	Pollution of controlled waters	Not significant
	Ecologically sensitive sites	Infiltration through shallow soils and migration via baseflow	<p>All storage and operational areas will be located internally and on impervious concrete hardstanding.</p> <p>Hardstanding will be regularly inspected and maintained throughout the lifetime of the permit.</p> <p>All staff and plant operators to be appropriately trained and qualified.</p> <p>Plant and machinery will be maintained to manufacturer's standards to ensure emission levels are maintained and to minimise any leakages / spillages.</p> <p>In the event of breakdowns of machinery, it will be appropriately stored on hardstanding and recovery and repair arranged. A back up machine will be hired in.</p> <p>Emergency plan and spill kits will be available at all times.</p> <p>Given the controls in place any potential contaminants from the waste transfer station are</p>	Unlikely given the presence of hardstanding across the operational areas of the site (acting as a suitable barrier) and management actions.	Damage to habitat and wildlife	Not significant





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			unlikely to impact the identified SSSIs and LNR. Any contaminants will be diluted and dispersed within the underlying aquifer if present.			
Vandalism resulting in damage to plant and machinery and potential leaks / spillages of fuels, within waste transfer station.	Shallow soils, Groundwater (Secondary A Aquifer), surface water (Rainham Creek and associated drainage channels), ecologically sensitive sites	Infiltration via drainage system and cracks in surface cover.	Site will be appropriately secured. The gates are locked outside of operating hours to prevent out of hours access. All plant and machinery to be stored in designated, secure areas at the end of each working day. All storage and operational areas will be situated on hardstanding which will be regularly inspected and maintained throughout the life of the permit.	Unlikely given security	Pollution of shallow soils, damage to habitats and local wildlife	Not significant
Arson resulting in damage to plant and machinery and fire, within waste transfer station.	Site users, surrounding site users and air, shallow soils, Groundwater (Secondary A Aquifer), surface water (Rainham Creek and associated drainage channels), ecologically sensitive sites	Direct contact, windblown ash, leaching of freshwater discharge.	Site will be appropriately secured. The gates are locked outside of operating hours to prevent out of hours access. All plant and machinery to be stored in designated, secure areas at the end of each working day. All storage and operational areas will be situated on hardstanding which will be regularly inspected and maintained throughout the life of the permit. Site will comply with the permitted Fire Prevention Plan, prepared in line with current EA guidance. Flammable wastes will be stored appropriately, and are unlikely to be stored in very large quantities due to permit storage limits.	Fire could potentially be a significant hazard given the flammable nature of some of the waste materials stored onsite	Fatalities, injury, pollution incidents, loss of habitat and wildlife	Low if management measures are adhered to.
Blockages in site drainage system and overflow from water storage tank.	Shallow soils, Groundwater (Secondary A Aquifer), surface water (Rainham Creek and associated drainage channels), ecologically sensitive sites	Infiltration via drainage system	The surface water management system will be maintained and checked daily to record levels and clear any debris that may impede the flow of water in the gully drain in front of the onsite building. When the water storage tank is $\frac{3}{4}$ full it will be emptied by tanker to a suitably licensed facility following appropriate testing. The site will be continuously monitored by site management and a technically competent person for compliance with visual inspection and daily records kept within the site log. Any necessary remedial action will be taken to	Unlikely	Pollution of the shallow soils, loss of habitat and wildlife.	Not significant given the proposed management procedures.





Hazard	Receptor	Pathway	Risk Management	Probability of Exposure	Consequence	Residual Risk
			ensure that the gullies within the site drainage system are kept clear.			
WASTE						
Introduction or production of unauthorised waste streams containing potentially contaminative materials	Land and Groundwater (Secondary A Aquifer), surface water (Rainham Creek and associated drainage channels), ecologically sensitive sites	Infiltration through shallow soils and run off	Only waste accompanied by the correct documentation in accordance with waste acceptance criteria and permit conditions shall be accepted onto site (see permitted activities). All loads entering the site shall be inspected, weighted and documented prior to offloading. All unauthorised wastes will be rejected by the site and the regulator contacted. Any rejected waste will be recorded in the site diary.	Unchecked, unauthorised waste streams could be delivered to the site but management actions should prevent this happening	Pollution of the shallow soils and groundwater. Damage to habitat and wildlife.	Low if management techniques are implemented.





Conclusions

This Environmental Risk Assessment has identified a number of potential hazards and sensitive receptors associated with the proposed activity and permit application. However, the qualitative risk assessment set out in Table 1, shows all risks to be negligible (i.e. assessed as not significant) or low. This reflects the nature of the proposed activities, the limited potential for emissions, the presence of hardstanding across the site, controlled drainage measures and the odour, dust, noise and fire prevention management measures that will be in place.

Based on these findings, it is our opinion that further assessment, options appraisal or cost benefit analysis to justify the choice of risk management measures is not required.

We trust the Environmental Risk Assessment is satisfactory and provides the necessary level of information to support the application for a bespoke permit.

