**The Surrounding Area**

A nature and heritage conservation screening assessment was received from the Environment Agency, dated 20/05/2022 (ref: EPR/WP3030GC/V005).

The Humber Estuary is approximately 850 m to the south west. It is a Ramsar Site, Site of Special Scientific Interest (SSSI), Special Area of Conservation (SAC), and a Special Protection Area (SPA).

There are no Local Nature Reserves (LNR), Local Wildlife Sites (LWS), protected species, or National Nature Reserves (NNR), identified within 2 km of the site. There are no Marine Protection Areas within 10 km of the site.

Hull Sewage Treatment Works is surrounded by industrial land to the east (50 m), west (55 m) and south (90 m), and farmland (115 m) to the north. The A1033 runs along the south border of the site. Saltend Chemicals Park is approximately 365 m to the south east and Saltend Power Station is approximately 900 m to the south. 500 m to the south west, 700 m to the south west and 850 m to the south west run railway tracks, linking the various industrial sites that surround the sewage works to the national network. Approximately 940 m to the south west is the eastern edge of Queen Elizabeth Dock, with both passenger and cargo docks present. The closest residential areas to the site are Marfleet, 800 m to the north west, and Hedon, 1390 m to the east. A sports facility is located 250 m east of the site.

**Table 5‑1.** Potential receptors, distance and direction from Hull Sewage Treatment Works

| **Site Name** | **Direction from site** | **Distance from site** |
| --- | --- | --- |
| The Humber Estuary (Ramsar) | South west to South east | 850 m |
| The Humber Estuary (SAC) |
| The Humber Estuary (SPA) |
| The Humber Estuary (SSSI) |
| Old Fleet Stream | West | 300 m |
| Preston New Drain | South east, north east | 270 m, 335 m |
| Residential Receptor | North west | 800 m |
| NNR, LNR, AW, MPA | n/a | n/a |
| Principal Aquifer (Bedrock) | n/a | n/a |

Data taken from MAGIC.gov.uk website, accessed May 2021. For habitat sites, the relevant distance for consideration are: International designations (SAC, MPA, SPA and Ramsar - 10km); National designations (SSSI – 2km);Local nature reserves (LNR) and ancient woodlands (AW) (2km)

Table 5‑2. Environmental Risk Assessment

| Consideration | | Receptors | Discussion | Detailed Environmental Risk Assessment? | Additional Mitigation Required |
| --- | --- | --- | --- | --- | --- |
| Fugitive Emissions | Litter | Human health receptors: there are residential areas 800m north west and 1390m east. The nearest is school is approximately 1200 m north west.  Designations: The Humber Estuary is a Ramsar, SSSI, SAC and SPA designation located approximately 850m south west to south east of the site. There are no MPA sites within 10km of site. There are no AW, NNRs or LNRs within 2km of the site.  The site is surrounded by industrial premises to the east (~50 m), west (~55 m) and south (~90 m).  There is a sports facility located 250 m east of the site. | The facility does not produce waste which results in litter | No | N/A |
| Vermin and Pests | For human health receptors, see notes for Litter above. | The waste produced does not typically attract pests and vermin and is well contained | No | N/A |
| Dust | For human health receptors, see notes for Litter above. | The facility handles wet wastes which do not result in dusts | No | N/A |
| Point source emissions to air  Emissions deposited from air to land | | For human health receptors, see notes for Litter above. | There are no point source emissions to air from these activities | No | N/A |
| Point source and fugitive emissions to water | | The Humber Estuary lies approximately 850m south west to south east of the site.  The Old Fleet Stream is 300m to the west.  There are a number of drains which surround the site, including the Preston New Drain, (approximately 270m south east and 335m north east) and the Reedmere Sewer (approximately 300m south east.  The wider site drainage is returned to the head of the site for treatment.  The permitted area of the site sits within Flood Zones 3 and is within an area which benefits from flood defences. | There are no point source or fugitive emissions to water associated with the permitted activity  In terms of fugitive emissions from any spillages, the tanker offloading point and discharge point are on impermeable surfacing with captured drainage back to the works inlet. therefore posing no environmental risk to ground, ground water or surface water.  Discharges of treated effluent from the WwTW are regulated under the existing discharge permit.  There is a risk to processes on site in the event that inappropriate effluent streams are introduced to the works causing inhibition of treatment processes  The site has registered for flood warnings and in the event of a major flood being forecast, tankered trade imports will be diverted to alternative YW sites.  YW has a flood response plan for the site and is responsible for operating Hull East pumping station in the event of a flood for the EA. | No | Waste pre-acceptance and acceptance checks for all incoming wastes to minimise the risk of unacceptable loads being delivered, impacting on the treatment processes on site and emissions via the permitted discharge consent |
| Odour | | Onsite workers and contractors.  For human health and ecological receptors, see notes for Litter above. | There is the potential for odorous effluent to be accepted at the site via tanker, however pre-acceptance checks will minimise this risk. Direct discharges into the ‘head of the works’ result in rapid mixing of effluent with the main works flow and dilution of any odour potential  The ecological receptors are sufficiently far away from the permitted activity to be affected by odour. | Yes | Mitigations are summarised in the odour risk assessment (Table 5-5)  Permitted activities covered by odour management plan |
| Noise and Vibration | | Onsite workers and contractors.  For human health and ecological receptors, see notes for Litter above. | The primary source of noise at the site is vehicular. All plant has been chosen to be low noise and white noise squawkers have been used in preference to beepers.  There is no history of noise related complaints at the site. | No | N/A |
| Accidents | | Onsite workers and contractors.  For human health and ecological receptors, see notes for Litter above.  The Humber Estuary lies approximately 850m south west to south east of the site.  Principal Aquifers in bedrock and superficial deposits underlying the site. | There is potential for release of unauthorised waste or wastes of unknown composition into the treatment system, which could potentially lead to the treatment system not working correctly or requiring maintenance, as well as implications for sludge produced. However, all drains within the permit boundary flow to the works inlet and all inputs will be subject to treatment via the UWWTD route within the works prior to discharge.  There is potential for accidental spills and leaks of waste to ground from the tanker offloading point and discharge point however any spills will be captured on impermeable surfacing with drainage back to the works inlet, therefore posing no environmental risk to ground, ground water or surface water. | Yes | The site has emergency plans and protocols within its EMS to reduce and minimise risk.  Pre-acceptance and acceptance procedures within the management system are in place to minimise risk of accidental input of unauthorised waste. Mitigations are summarised in the environmental accident assessment and accident management plan (Table 5-6)  Spill kits, including drain covers are available at the site and staff are trained on their operation. |
| Waste Compatibility | | UWWTD derived flow within the works, the biological, chemical and physical processes within the WwTW and output quality (sludges and final effluent) | Yorkshire Water has a robust waste pre-acceptance and acceptance procedure, which is linked to both site access for tankers and also offloading point operation by means of key fob controlled loggers.  All potential tankered effluents are subject to an assessment before permission to deposit is granted, with more detailed assessments being carried out on more complex or variable effluents.  Incoming loads are subject to monitoring, including periodic random sampling and testing to check for compliance.  All offloading points equipped with appropriate hoses and coupling to reduce the risk of misconnections and spillages. | No | N/A |
| Other Issues | | N/A | There are no other site-specific risks identified. No protected species or ancient woodlands have been identified close to the site. | No |  |

Table ‑ Environmental Accident Assessment and Accident Management Plan

| **What harm can be caused and who can 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? |
| Major fire / explosion | Local population. Ecological receptors  (no nearby ancient woodlands identified) | Windblown dispersion. | Fire alarm systems installed and maintained. Electric temperature sensor, flame arrestors, etc.  Follow site Incident Response Plan and inform relevant authorities | Very unlikely | Severe | Acceptable |
| Minor fire / explosion | Local population. Ecological receptors | Windblown dispersion. | See above for major fire | Unlikely | Significant | Acceptable |
| Failure to contain firewater | Local water courses. Ground and groundwater  Humber River designated as Ramsar / SAC / SPA / SSSI | Surface water drainage system. Diffusion into ground. | Fire prevention measures as above. Drainage of wider wastewater treatment works contained and directed to the head of the works.  Follow site Incident Response Plan and inform relevant authorities | Unlikely | Significant | Acceptable |
| Vandalism | Local population. Ecological receptors. Local water courses. Ground and groundwater  Humber River designated as Ramsar / SAC / SPA / SSSI | Windblown dispersion. Surface water drainage system. Diffusion into ground. | Site security measures are in place including perimeter fence with controlled access gates. Regular inspection of perimeter fences.  Address any specific equipment damage. Reinstate and review security measures. | Somewhat unlikely | Noticeable | Acceptable |
| Misconnection of tanker offloading hoses | Local population. Ecological receptors. Local watercourses. Ground and groundwater  Humber Estuary designated as Ramsar / SAC / SPA / SSSI | Spills to ground | Use of dedicated hoses on off-loading points. There is potential for accidental spills and leaks of waste to ground from the tanker offloading point and discharge point however any spills will be captured on impermeable surfacing with drainage back to the works inlet, therefore posing no environmental risk to ground, ground water or surface water. | Somewhat unlikely | Significant | Acceptable |
| Flooding from rivers / stream / canal / groundwater etc | Local watercourses. Ground and groundwater  Humber Estuary designated as Ramsar / SAC / SPA / SSSI | Surface water drainage system. Diffusion into ground. | The site is located in a flood zone 3 however the area benefits from flood defences. Some of these defences are managed by YW on behalf of the Environment Agency.  The site is registered to receive flood warnings  The site has a Flood Response plan which is subject to regular review and appropriate revision.  Imports would be stopped in the event that flooding is predicted.  Follow site Incident Response Plan and inform relevant authorities. Take appropriate corrective and preventative actions to minimise environmental impact | Somewhat unlikely | Significant | Acceptable |
| Flooding due to drain blockages and/or excessive rainfall causing localised on site surface water flooding | Local watercourses. Ground and groundwater  Humber Estuary designated as Ramsar / SAC / SPA / SSSI | Surface water drainage system. Diffusion into ground. | Regular infrastructure and housekeeping inspections including visual inspection of drains and hard standing.  The site is registered to receive flood warnings  The site has a Flood Response plan, which is subject to regular review and appropriate revision.  Imports would be stopped in the event that flooding is predicted.  Follow site Incident Response Plan and inform relevant authorities. Take appropriate corrective and preventative actions to minimise environmental impact | Somewhat unlikely | Noticeable | Acceptable |
| Generalised or localised power failure leading failure of pumps / control systems and possible leaks and escape of sludge | Local watercourses. Ground and groundwater  Humber Estuary designated as Ramsar / SAC / SPA / SSSI | Surface water drainage system. Diffusion into ground. | Back-up power / contingencies plans are in place to provide power to critical operations in the event of an electrical outage | Fairly probably | Minor | Insignificant |
| Fuel / oil spills during tanker refilling / handling operations | Local watercourses. Ground and groundwater.  Humber Estuary designated as Ramsar / SAC / SPA / SSSI | Surface water drainage system. Diffusion into ground. | Invoke spill containment procedures. Clean up according to COSHH data sheets and appropriate disposal arrangements.  Isolate affected pipework \ sources  Drainage of wider sewage treatment works contained and directed to the head of the works.  Follow site Incident Response Plan and inform relevant authorities | Somewhat unlikely | Noticeable | Acceptable |
| Failure of fuel / oil containment | Local watercourses. Ground and groundwater.  Humber Estuary designated as Ramsar / SAC / SPA / SSSI | Surface water drainage system. Diffusion into ground. | Regular inspection of containment.  Clean up spillage and transfer waste into appropriate containment for recovery or disposal. Provision of containment via bunded storage tanks.  Site is equipped with spill kits and drain covers and staff are appropriately trained in their application.  Drainage of wider sewage treatment works contained and directed to the head of the works.  Follow site Incident Response Plan and inform relevant authorities | Unlikely | Significant | Acceptable |
| Pump / bearing failure leading to excessive noise | Local population | Air | Planned preventive maintenance system in place.  Complaints handling and response system in place | Somewhat unlikely | Noticeable | Acceptable |
| Failure (cracks, splitting) of underground pipework (e.g. fuel, chemicals, sludge, site drains) | Ground and groundwater  Humber Estuary designated as Ramsar / SAC / SPA / SSSI | Infiltration / percolation through ground | Planned maintenance systems in place  In-line flow monitoring in key locations and tank level monitoring would identify losses | Somewhat unlikely | Significant | Acceptable |