Port of Tilbury London Ltd

UKPH 47 Berth

Fire Prevention Plan for the Storage of RDF/RCF

Contents

1. Summary

This Fire Prevention Plan, reviews the prevention measures which are in place for the handling and storage of RDF/RCF at the Port of Tilbury to prevent a fire from occurring. This document will go into detail on what the Port of Tilbury London Ltd (POTLL) has in place to reduce the risk of a fire related to the storage of RDF/RCF bales at our permitted sites.
Where POTLL differs from a number of other permit sites, is that we will only handle two commodities RDF of an EC code EWC 19 12 10 / 19 12 12 and RCF Recycled cardboard or similar EWC 15 01 01 / 20 01 01 and will only be storing the wrapped bales off the ground on cassettes that can be easily moved onsite, pre-load to a vessel.
At no stage will we be processing, manufacturing, sorting or wrapping bales onsite.

This fire prevention plan incorporates the findings from our Fire Risk Assessment (Appendix B).

1.1. Location within the Port

The permitted site where RDF/RCF will be stored is located within the Business Area referred to by POTLL as the UK Paper Hub 47 Berth (hereafter referred to as UKPH 47B). This Terminal predominately handles paper products from Scandinavia and European Countries.
The Management System, Waste Management Licence and Fire Prevention Plan is for 1 site location within the Port estate at UKPH 47 berth where the permitted waste commodity will be stored under the permit.

The site will be operated and managed by POTLL and will conform to classification activities D15 storage, pending the exporting of waste. This site location is classified and referred to as 1 specific site – 41/43 Berth.

Appendix A provides a map of the location of the site within the port estate where the RDF/RCF would be stored and handled and quarantine areas.

Key information about the site:

- The storage area is on external quay areas.
- There are no European Sites, Ramsar Sites or Sites of Special Scientific Interest within 200m or within 50m of any well spring or borehole used for the supply of water for human consumption.
- All sites are at least 830 metres to the east of the nearest residential developments with the main railway line running in between the port estate and the residential development area along with a public highway.
- The location sits in an industrial area, within the commercial port.
  In the case of the site, the adjoining neighbouring customers business' operating alongside, either handle forest products, containers, construction materials, chilled products and maintenance of river passenger boats.
  Appendix H shows a map of the receptors.
- The neighbouring cold store on 45 berth handles chilled products and is managed and operated by a Port tenant.
- Thames Clipper are a tenant that maintain river passenger boats and are required to adhere to the Ports Policies in relation to Smoking, Hot work etc., they are located 250 meters away from the storage area.
- The quarantine areas are a minimum of 12 metres from warehouses where cargo is stored, with a roadway running between the RDF/RCF quarantine area and the warehouses.
- A strict no smoking policy applies to all permitted sites. Designated licenced smoking areas are available in a number of locations within the Port, away from the permitted sites.

The site identified within the port are quays or dockside storage areas designed to support the loading and unloading of vessels. All of the quays within the Port of Tilbury are operational quays used for the loading of multiple customer cargos and are also roadways to tenant sites. Therefore the Port of Tilbury has adjacent dockside storage areas to support the loading and discharging of vessels. It is this storage area which has been identified as the site covered by the Permit. This site is where the RDF/RCF stock is delivered to and will reside until the vessel is loaded.

Appendix H is a receptor drawing showing the location of these at the Port of Tilbury in relationship to local residential areas, commercial/residential and POTLL operations.

There are also critical infrastructure routes that run in and out of the port these being:

- Road network – A1089 which runs to and from the Port and also Tilbury Town.
- Railway line – there are 3 operational rail terminals within the port which feed onto the main branch line from Southend to London. There is also a railway station at Tilbury Town which runs between Southend and London.
- Sea links – The Port is a locked dock, therefore our Port Lock is a critical infrastructure route, with this being the only entry and exit route into the port for vessels.

1.1.1. Site Plans

The following plans are contained within the appendices of this document:

- Location of the general storage area related to the permit within the Port of Tilbury
- Storage Plans including Emergency Access routes
- Drainage System Plans including the location of hazardous materials (including if applicable drain covers, pollution control features, location of gas, process areas, chemicals oil and fuels)
- Location of Key Receptors with 1km of the storage area (Including if applicable, critical infrastructure, schools, hospitals residential, workplaces, protected habitats & rivers).
- Location of hazardous material – drawings confirm no hazardous materials are stored within the permitted areas.
- Location of Quarantine areas

1.1.2. Location of Key Receptors

The permit area is located within an industrial area, within the commercial port. In the case of the storage area the adjoining neighbouring customers business operating alongside, either handle forest products, containers, construction materials, chilled products or maintain passenger river boats.

Appendix H shows a plan of the receptors around the site these being:

- Commercial / Industry (Customers of the Port of Tilbury)
- Residential
- Critical Infrastructure (railway line, A1089 road and the Port Lock)

1.2. Volume & Commodity

The Commodity being reviewed under this prevention plan is Refuse Derived Fuel (RDF) Recycled Cardboard (RCF) or similar EWC 19 12 10 / 19 12 12 / 15 01 01 & 20 01 01, which is a form of baled waste. The material will be collated, processed and baled off site.
The criterion which has been agreed with the customer is that bales must meet to be accepted on site is:

- Wrapped sufficient times with suitable wrapper or film of a minimum 6 ply to protect the integrity of the goods and prevent water ingress or damage.
- Of a density and shape that permit the goods to be handled and stored safely and in compliance with the Law.
- Bales to have a composite makeup of less than 30% Moisture.
- Bales size measuring approximately 1.3 x 1.0 x 1.0 m3 and 1.05 ton.
- Stock can be stored on site for up to 45 days (maximum age of stock shall not exceed 9 weeks from being baled).
- Bales on arrival at the Port can only be up to a maximum age of 2 weeks, post baling.

These commodity criteria's have been agreed to ensure the integrity of the bales when on site, prevent escape of odours, waste or liquids, prevent the ingress of liquid and weather and reduce the risk of fire.

The maximum amount of storage on the permitted site at any one time is 3,745t.

Hours of Operation

The port operates on a 24/7 basis, therefore there could be operations working anytime 7 days a week, including public holidays. However the majority of the scheduled RDF/RCF vehicles will be received onto site between the core operational hours of 06:00 – 22:00. If RDF/RCF deliveries need to be received outside of these hours it will need to be agreed by the UKPH 47 berth Management Team in advance.
With the sites being within an operating port a lot of the neighbouring sites also work 24/7 days per week, with POTLL having operational teams working at weekends and after 22:00.

The Port Police Force will monitor and patrol the site throughout a 24/7 period and would be available in an emergency to assist immediately (as they currently do).

1.3. Competent Persons, Resource & Training

RDF/RCF consignments will only be accepted at times agreed with the Operations Manager. At the agreed times, there will be at least one staff member on site. All staff working on the site will be aware of their responsibilities under the Waste Management Licence, working plan and any associated procedures. This is communicated via a toolbox talk process, staff briefings and the provision of straightforward guidance and checklists. The key responsibilities will be:

- Understanding of the waste that is acceptable at this facility
- Ability to identify damage to a bale that should be:
    - Repaired on site – where the materials are stored to affect the repair and how to do so
    - Returned to the RDF/RCF production site
    - Quarantined and where to quarantine damaged bales
    - Ability to carry out quality checks of the product on arrival
- Collection, completing and supplying the required paperwork and its safe storage at the Port Office
- Site cleanliness & housekeeping activities
- Inspection regime and associated checklists
- Temperature reading checks on the RDF/RCF bales on arrival and monitoring whilst onsite

- Emergency action plans (likely emergencies and how to respond)
- When to make notifications to the Technically Competent Person
- Each shift has a minimum of 1 trained fire marshal working on shift when the terminal is operational
- All staff have had fire awareness training via and or toolbox talks.

2. Likelihood of Fire

The POTLL have carried out a risk assessment on the potential risk of fire to the RDF/RCF which can be found in appendix B.

The causes of Fire we have reviewed as part of this risk assessment are:

- Arson or Vandalism
- Self-Combustion
- Plant & Equipment Failure
- Electrical Fault
- Smoking
- Discarding Smoking Materials
- Hot Works
- Reaction between Incompatible Materials
- Neighbouring Site Activities
- Incompatible Waste
- Hot Loads deposited at the Site

The potential cause of fire can be managed and as a result the level of risk is tolerable (see fire risk assessment appendix B).

3. Prevention Plan

3.1. Volume and type of waste

The maximum weekly tonnage is unlikely to exceed 3,745 tonnes which would be the maximum on site at any one time.
The commodity will be RDF/RCF- EWC 19 12 10 / 19 12 12 / 15 01 01 / 20 01 01, which is a form of baled waste. One of the control measures which has been put in place is that the product onsite will be less than 9 weeks old (from being baled) and only be stored onsite for up to 45 days pre-shipment, reducing the risk of self-combustion & reaction between different materials.

We only handle wrapped bales and insist that the bales are well wrapped, with a suitable wrapper or film of a minimum 6 ply to protect the integrity of the goods, preventing water ingress or damage and reducing the risk of self-combustion.

Discarded smoking materials, will be segregated on site as explained in section 4 of this plan. Incompatible materials and deposit of hot loads will not be received in to site; these loads would be rejected as part of our receiving criteria onsite. As part of the receiving process of the bales onsite, the bales temperature will be checked, if the bales are found to be 45°C or above the bales will be rejected and returned to the customer site.
No processing, shredding, chipping or baling activities are carried out on any of the POTLL RDF/RCF sites.

3.2. Storage Plan

Within the RDF/RCF storage & quarantine areas, there will be a storage plan for the bales on cassettes in the designated area within the site, this shows the layout plan of the site, the fire breaks proposed and the stack layout drawings (appendix C and N).

Each stack will be labelled with the date received onto site.

Stock reports will be run weekly by the Technically Competent Person to ensure none of the stock exceeds the 45 day criteria for pre-shipment. If the stock is close to this period, the customer will be advised and asked to confirm their plans for removing this stock from site.

The stock report will also provide real time confirmation of the amount of stock on site at any one time.

Under this licence no more than 3,745 tonnes of RDF/RCF can be stored on site at any one time (attachment A-D).

Please see table below showing how we have calculated the maximum stack size on each cassette at 41/43 berth:

Tier No	No of Bales	m2
Tier 1 (bottom tier)	9 x 2 = 18	9 x 1.3 x 2 = 23.4 m2
Tier 2	9 x 2 = 18	
Tier 3	9 x 2 = 18	
Total	**54**	
Total m3	**70m3 *(54 x 1.3 1.0 x 1.0 =70.2 m3)***	

The product will be stacked in two rows and no more than 3 bales high on cassettes, cassettes stored to a maximum of 2 cassettes long 24.2 meters and side by side a maximum of 8 cassettes totalling 20 meters this incorporates the cassette size, the largest stack area consists of 9 cassettes containing of 54 bales each - which equates to 486 bales / approximately 510 tonnes. Between the cassette storage stacks a fire break has been implemented with a minimum gap of 6 metres which is an adequate width to allow for access of all operational equipment and to enable safe monitoring and manage the stacks.

From a health, safety and fire control measure 6 meters will give enough room for a fire engine pump to gain close access to the cassettes and to allow for cassettes to be moved if required with plant and equipment in an emergency.

Although for another permit in the Port this was discussed with the Essex County Fire and Rescue Service and they confirmed this is more than adequate for them to provide fire support, if required in an emergency (see appendix I copy of joint inspection). This was also is in line with the FPP guidance provided by the environment agency.

Where possible, we will look to provide two access routes to the product to provide better access to the product in an emergency as well as providing us with better visibility for management and monitoring of the stacks.

The port has operational presence on site 24/7, including the police therefore allowing rapid redeployment of stacks in the event of an emergency, such that if there ever was a fire we can ensure that no more than 140m2 would be affected,.

Due to the product being stored on cassettes there is the ability to easily remove the product from the area, plant is immediately available on site which will reduce the risk of fire spread.

Quarantine Areas A, B, C would each accommodate 3 cassettes of single tier bales therefore 18 bales per cassette or 54 in total in each area. Area D would accommodate 6 cassettes of 18 bales totalling 108 bales.

The quarantine areas could accommodate in total 270 bales which is more than 50% of the largest volume of cassettes stored.

3.3. Management of stock stacks

Stock reports will be run weekly by the Technically Competent or designated person to ensure none of the stock on site exceeds the 45 day criteria for pre-shipment.
As the stock area is monitored daily and stored in a set pattern, we are able to determine which bales on cassettes are getting close to the storage limit.
If the stock is close to this period, the customer will be advised and asked to confirm their plans for removing this stock from site back to their site for disposal or reprocessing.

For avoidance of doubt product will not be stored any longer than 45 days.

During the loading of the bales back to customer site, POTLL operatives will clearly mark each bale to ensure they do not get returned to the Port on a different intake.

All of the stock received in and shipped out is recorded on IPOS (stock management system). This provides traceability of the stock whilst at POTLL. This also provides real time confirmation of the amount of stock on site at any one time.

Contractually our Customers have up to 21 days storage to a maximum of 45 days storage. There is also an additional storage rate charged by POTLL over 21 days to encourage the customer to ship the commodity rather than remaining at the Port.

Deliveries from our customers are only accepted once a TFS document for the forthcoming vessel is in place to ensure any stock received already has a final destination approved.

3.4. Product Segregation & Stock Rotation

The product where required will be segregated into different stock stacks dependent on the baling source and on customers advice. Thus providing a secure stack for safety reasons, clear viability of the stock for monitoring and management and also for fire prevention and containment.

The product will be stacked no more than 3 bales high with a maximum of 2 bales wide on cassettes, which are easily removable.

The stacks will have fire access/exit routes (breaks) every 24.2 metres or less with a **minimum** 6 metre wide access route.

As well as providing a fire access route into the stow, this also provides a separation divide within the product to provide fire breaks, and assist with stock rotation making it easier to carry out the daily management and monitoring checks of the stow and the product.

Stock will be clearly labelled to identify the date that it was delivered; this will enable us to ensure a strict first in first out rotation of stock. Any stock remaining on site will be positioned to ensure that this cargo is the first to be loaded on the next vessel or can be easily accessed to return to the customer should they get near to the 45 day storage agreement.

Stock must be of an age of 9 weeks or less and have been on site for no more than 45 days. This along with our stock rotation and management of the stacks allows us to actively monitor the commodity to detect any unusual aspects (e.g. Odours).

3.5. Seasonal Fluctuations

With RDF/RCF there will be seasonal fluctuations with the volumes handled. We would expect the seasonal peaks for storage of RDF/RCF to be during the autumn and winter, when the end users require the RDF/RCF as a fuel for Energy for Waste Facilities during the colder months.

From a weather perspective we would expect the summer months to be the months where the bales onsite will get to the highest temperature and therefore be at a higher fire and odour risk. During these months we would look to increase our monitoring if there are signs of the temperature of the bales increasing. This will be monitored as explained in section 4.

Our Customer Contract states that the bales can only be stored on site up to 45 days. After that the customer will be required to remove the bales from site and organise for them to be disposed of. The customer will also be charged storage of any product onsite after 21 days, to encourage prompt shipment. This will ensure that any downturn in market trends will not result in bales left within the port and are responsibly disposed of by our customers from site.

3.6. Self-combustion

We believe that self-combustion of RDF/RCF could occur with a temperature range over 50°c.

Daily monitoring of the stacks will be carried out to ensure the temperature of the bales is monitored and there is no risk of them self-combusting.
We are also strict on the age of the product onsite (limited to a maximum of 9 weeks) ensuring there is limited risk of the bale decomposing whilst on site.

As part of our monitoring of the stacks, if we have concerns within our daily monitoring checks that the product might be getting hot, we will look to use a heat sensor camera to try and get a visual image of the temperature of the bales and manage these bales as stated in section 4.

We appreciate that heat sensor camera or a laser temperature meter only provide a surface temperature of the bales and does not provide any penetration temperature reading. Therefore we propose that if a surface reading of in excess of 45°C is found we would look to monitor again within the next 2 hours to see if the temperature is still rising. Cassettes can be easily pulled out from other stored cassettes to access bales for additional monitoring to identify any hotspots (surface temperature of 45°C or greater). If any hotspots are found in the stack we would look to remove the bales from the stack and store separately within the permitted area or quarantine areas. We can then probe the individual bale to get a core temperature.

If the temperature is still rising after moving the storage stack we would look to add water to the bales with a water mister or cannon or a fire hose if required. Obviously in all cases we will do our upmost to keep the integrity of the commodity and avoid water damage to the product. If in any doubt, we will call in assistance from the emergency services.

Section 4 outlines the monitoring and trigger control points we will follow on site to manage the situation.

3.7. Water Supply

Being a port there is plentiful supply of water in an emergency for the fire brigade from the fire hydrants located onsite which are along the quay on all the sites or direct from the dock. The site plans within Appendix D show the location of the hydrants and the location of the dock water from the storage areas.

The Fire Hydrants located on the sites, would provide a flow rate of approximately 800 litres/min from each fire hydrant. The permitted storage site & quarantine areas have access to multiple fire hydrants. This coupled with the availability to obtain additional water from the dock if required would provide enough water supply in an event of a fire.

3.8. Site plans

Site plans included within Appendix show within the site the location of:

- Buildings on the site
- Hazardous materials (gas, oil, fuel, chemicals)
- Emergency Access Routes
- Hydrants and Water Supplies
- Location of Plant
- Drainage systems
- Drainage valves
- Location of key receptors
- Quarantine Areas

3.9. Prevention Measures

The following controls are in place as prevention measures:

- Sources of Ignition – No sources of ignition will be present on the sites. With the closest source of ignition potentially being hot works conducted by a tenant which is situated approximately 250m from the storage area.

- Contractors working on site – all hot works are permitted by the Port. To carry out hot works you are required to obtain a permit from the Port Police. A permit will also need to be obtained via the Safety Management System before any works are undertaken.

- Visitors to site – a site induction will be carried out for all visitors on site who may be unaccompanied at any time which includes reminding visitors of our no smoking restrictions.

- Planned Maintenance – all plant and equipment is maintained by either POTLL engineering team or an external contractor who own this equipment and are onsite. A planned maintenance schedule is in place for all equipment. Daily checks are also carried out by the POTLL operational team before they used the equipment each day. Records of the daily checks are kept on the Manual Handling equipment electronic Fork Truck systems along with any faults found.

- No Smoking - policy is in place across all of the sites. A designated smoking area is available at the UKPH 47B outside of the RDF/RCF storage areas.

- Fire extinguishers - All equipment working within the sites are fitted with fire trace systems within the engine compartments.

- Site Security - The Port complies in full with the requirements of the International Ship and Port Facility Security Code (a comprehensive set of measurers designed to enhance the security of ships and port facilities, implemented through EU and UK law) which is regularly audited by independent Government Officers (TRANSEC). In addition to this the Port has the strength that we have our own Crown Police Force and also comply with a number of associated EU and UK implementing legislation for Port Authorities. The Port Police patrol and also monitor the port from a security and crime prevention perspective 24/7 all year round. We have CCTV across the Port which will provide coverage of the site identified within this management system under the permit. All CCTV across the port is monitored 24/7 from a control room at the Port Police station situated within the port.

- CCTV covering the storage area has infrared capabilities to detect heat.

- Emergency Services 1st Response – The advantage of POTLL also having their own Police Force is that they provide a 1st line of response from an emergency services perspective. In any form of emergency, accidents or dangerous incident the Port Police will be the first point of contact and can be at an incident within a matter of minutes. They will call for immediate response from the other emergency services required, with the ability to administer first aid, protect and restrict areas, divert traffic and ensure safe routes, priority or escorted access can be provided through the port for the emergency services. They will also manage and implement the Port of Tilbury Emergency Action Plan (Potempla) if required.

- Parking of Plant & Equipment – No plant will be parked within the storage areas.

- Daily Monitoring Checks – Daily monitoring checks will be carried out (as per section 4.2). If at any time anyone has concerns of the temperature of the bales we have access to a laser temperature meter & a heat sensor camera which would be able to confirm the temperature of the bales. If the bales were found to be anywhere over 50°C, we would look to remove the bales from the storage stack, segregate and monitor by probe to get a core temperature. If POTLL had concerns the temperature of the bales were still rising we would look to douse the bales in water to reduce the temperature of the bales.

- The Port Police will undertake checks outside the normal operating hours and have access to the thermal imaging CCTV cameras covering the storage area.

- Temperature & Quality monitoring checks on arrival – on arrival of any deliveries onsite the bales temperature will be checked and also the quality of the bales, to ensure they meet the quality standard we require on arrival. Details of this are in section 4.2.

4. Detection & Suppression

4.1. Extinguishers

Extinguishers are present onsite in all plant and equipment but also in strategic places across the sites (offices, warehouses etc.). In addition to this we also have hydrants available on the quays.

Maintenance checks are carried out yearly to all extinguishers and regular inspection checks are carried out as part of our site checks carried out by our SHE Department and by our Safety Representatives.

4.2. Inspection & Monitoring

Temperature Monitoring

UKPH 47 Berth are in the process of purchasing:

- Laser temperature gun – Raytek MT4 (Temperature range 18c to 400c)
- Heat Sensor Camera – Fluke TIS20+ (Temperature range-20c to +400c)

Another terminal in the Port also owns a number of different temperature monitoring equipment which can be accessed:

- Laser Temperature Meter - Raytek MiniTemp FS (Temperature Range -18c to 400c)
- Heat Senor Camera - Fluke Tis50 Camera (Temperature Range -20c to 450c)
- Temperature Probes - Sinar Grainspear 6300 Moisture Analyser – Temp Range -20°C to 60°C & ETI Thermometer 2001 – Temp Range -270° to 176°C
  Only the Sinar Grainspear has penetration capability for individual bales, but the Fluke Camera can provide an accurate reading of the surface temperature of the bales over a range of at least 10m².

We propose to use the laser temperature meter and/or heat sensor camera for carrying out the daily inspections and also the temperature checks on arrival.

Daily Inspections

Daily inspection and monitoring is carried out as part of the site checks for the day. This includes monitoring the temperature of the commodity.

Daily monitoring of the stock will be carried out by the operational team during standard operational hours. Part of this daily monitoring will involve a sniff test for odours, composition/integrity check of the bales and a temperature check.

The Port Police will monitor temperatures outside of the normal operational hours and will contact the Operations manager if there is any cause for concern regarding the temperatures or to clarify any actions which may need to be taken as a result of their monitoring.

The temperature check will involve a temperature reading being taken from a bale on each layer at each end of each row with a laser temperature meter. The average temperature will be recorded on the Daily Temperature Record (Appendix J). If from the daily check there are concerns that the surface temperature of the bales is getting to a temperature near 50°C, then we will use a thermal imaging camera available on site to get a more detail actual temperature of the bales and see if there is something specific within the bale which is causing a spike in the temperature.

If Heat intensity levels are 0-2 then no additional monitoring will be carried out.

- If Heat intensity levels are 3 then the hotspots within the stack will be removed and stored separately.
- Further monitoring will then take place to ensure the product is not continuing to self-heat
- If Heat intensity levels are 4 Then the whole of the stack on the cassette can be dissembled, until cooler bales are reached, level 3 or below and the customer will be advised accordingly.
- We may need to use water to cool and dampen the product.
- Monitoring would be increased to every 2 hours or more frequent if required.

The Heat intensity scale is drawn from the scales used from the Daily Temperature record (Appendix J)

Heat Intensity	Contingency Control Measure
Heat intensity level 0-2	• Continue to Monitor Daily
Heat intensity level 3	• Increased monitoring of bales on cassettes. Cassettes can be pulled out to confirm if there are any bales reading greater than within the 45°C.
Heat intensity level 4	• If Hotspots (surface temperature of 45°C. or greater) the stack can be removed and dissembled. • Customer advised • Water might need to be added. Monitoring increase to every 2 hours or more frequent if required

Temperature Intensity Rating
0 – 5-15 °C
1 – 15-25 °C
2 – 25-35 °C
3 – 35-45 °C
4 – 45+ °C

As part of our internal environment audit carried out yearly by our SHE Department they will also monitor our report keeping and monitoring on Odours & Fire Management.

Inspection of bales on arrival

On arrival to site the operational team will check:

- Temperature of the bales
- Checks for any visible damage (well wrapped (min 6 wrap), undamaged, dense and there are no contaminative liquids coming from the bales)
- Any strong odour
- Condition of wrap

If the bales of a temperature of greater than **45 °C** the bales will be rejected on arrival.

If the bales don't meet any of our agreed receiving criteria the bales will be rejected, will remain on the trailer and returned to the customer.

5. Quarantine Areas

In the fire prevention plan guidance it makes reference to the requirement for a dedicated emergency or quarantine area. The Port Estate operates over 850 acres, as a commercial port. We have identified three areas at UKPH 47B which we would propose to use as our primary quarantine areas for an emergency.

These two quarantine areas can be seen in Appendix N.

We have calculated that quarantine areas:

Quarantine Area	Size of Area (m2)	Capacity of Bales	Capacity of Tonnage
Quarantine A, B, C	24.2m x 19.4m = 470m2 each area	Cassettes 1 tier of bales. 3 Cassettes x 18 bales x 1.3 m3 = 70m3 per Quarantine area. Total in 3 Quarantine areas 210m3	18 bales x 1.05 tonne x 3 cassettes = 56.7 tonnes Total 3 areas 170 tonnes
Quarantine D	24.1m x 29m =699m2	Cassettes 1 tier of bales. 6 Cassettes x 18 bales x 1.3 m3 = 140 m3	18 bales x 1.05 tonne x 6 cassettes = 113 tonnes
Total of all areas		350m3	283

The largest stack area consists of 9 cassettes containing of 54 bales each - which equates to 486 bales / 510 tonnes, 631m3.

On this basis we can confirm the quarantine areas are greater than the minimum requirement of 50% of the largest stockpile which is outlined in the EA guidance documentation.

In addition to this due to the scale of our operations and the area of land we operate in the port, we can guarantee in an emergency we would be in a position to make additional space available within the port close

to the site where the incident occurred. The Port Police would also manage the segregation of areas and restricting access to support the emergency services.

6. Fire Suppression Systems

The POTLL only stores RDF/RCF bales and does not undertake any baling or processing on site, we believe that this along with the monitoring and prevention measures outlined in this document the fire risk is low.

In addition to the prevention measures we have in place, there is an abundance of water easily accessible directly from the dock to complement our existing water hydrant network, make their clearly no further need for fire suppression.

If at any time we do have a concern over the risk of fire, as an additional preventative measure there could be access to a mobile dust suppression canon, in addition there are a number of customers operating within the port who also have dust suppression canons that could be used in an emergency.

7. Containing & Mitigating Fires

In the case of any fire it is important to limit the potential spread of the fire, fire duration and the impact of the fire.

With the Port having our own Police Force onsite we expect at any time a fire would be spotted very quickly. With the ability for the Port Police Force to be in attendance onsite and for the Emergency Services (including the Fire Brigade) to be called to site rapidly.

With the agreed level of access being made available for the Emergency Services to access the cassettes and the location of fire hydrants on our permit sites (as well as easy access to water from the Dock). POTLL would envisage the fire brigade would be able to start responding to any fire promptly.

POTLL has a full range of heavy plant (listed below) and equipment available at all times to support the emergency services; particularly if areas of the stack need to be moved to reduce the risk of the fire migrating or if there is a need for isolation or containment if deemed safe to do so at the time.

- 2 x Clamp Trucks
- Each clamp can move 100 Bales per hour
- 4x Tugs to pull out cassettes, it is estimated the cassettes can be totally separated within 30 minutes to prevent spread of fire.
- 4 Mobile dust suppression systems (Water sprayers)
- 1 Mobile water cannon

All of which can be deployed & operated in the event of an emergency immediately by the operational team during normal operating hours if deemed safe to do so.
If outside of the normal operating hours the Operations Manager would be contacted by the Port Police and he would call in all available operatives to assist with the emergency services.

8. Managing Fire Water

The POTLL would look to contain any fire water, where ever possible. This would be done in a number of ways:

8.1. Landside containment

4 x 30 metre lengths of industrial flood protection booms are available on site to help the containment of fire water run-off from the site. Flood boom is available in an emergency which is stored within the Asset. Access to the boom is available 24/7 with the Port Police, Engineering and Marine departments having access and training to deploy.

The mobile flood barriers we would propose to use would be Darcy industrial heavy duty flood barriers.
All UKPH47B operatives and the Port Police will be fully trained in deploying the barriers in case of emergency.

All staff will have access to all the barriers, fittings pumps etc. 24/7
The manufacturer guidelines suggest each boom would take 15-20 minutes to deploy and fill which can be deployed 24/7 by trained staff. We would assign 2 operatives per boom to allow a full containment area to be set up and operational within 20 minutes.

The flood and spill protection boom is a versatile and flexible barrier, which can be deployed on uneven ground. It is an ideal system for creating a flood barrier or in our case the containment of water. The barriers will be made of heavy duty Alcryn fabric which is fire resistant (details on the specification of the barrier can be found in appendix O).
The manufacturer suggest each boom is to be positioned 6m from any fire
This flood protection barrier uses the strength and power of water to keep areas protected from flooding.
The barrier is simple and easy to store and can easily be handled by just two people.
The flood protection barrier utilised a simple concept based on modular flood barriers available in the following formats:-

- Single
- Diameter 80cm (Water retained at a level of 62cm)
- Length –30m
-

Using 4 x 30m flood barriers we would be able to retain 558m3 or 558,000 litres of fire water, which is the equivalent of 4.65 hours firefighting at a rate of 2000L per minute.

This is based on the following calculation.
30m (Length) x 30m (Width) x 0.62m (Containment Height) = **558m3 or 558,000 litres**

We would then aim to have tankers brought in to pump the water out of the containment area and to be disposed of appropriately.
In addition to this as we have already stated before, the setting of a port is a very different location when compared to the usual waste treatment / processing facility. As a result the concept of dilution should also be considered. In the case of the Port of Tilbury it is clear that the volume of water in the enclosed dock is such that any likely quantity of fire water that could be associated with any fire involving RDF/RCF could not be measurable in the volume of water in the dock. On this basis the level of containment being proposed is more than adequate.

If required at the time-Darcy offer a national 24/7 emergency spill response service for emergency product supply, advice and spill clean-up. Darcy have also confirmed that these barriers are also held as a stock item so we could obtain more in an emergency.

The Port also hold within stock Dammit clay drain covers which would be stored with the flood barriers and be deployed to contain any potential oil and chemical from entering the drainages system for up to 24 hours.

8.2. Waterborne containment

The storage area of the RDF/RCF is on higher ground level than the quay. If there was an unexpected release into the watercourse that firewater run off could potentially enter the dock water, then the Port Harbour Master can instruct the marine department to deploy a 100 metre fence boom in the dock along the quay to contain any fire foams or particulate matter. In addition to this our Marine Department have access to marine nets which they can put in the water to collect any debris from the bales.

This would be handled by our Marine Department as an environmental incident (Appendix F) and we would look to manage and dispose of any fire foam or water contaminated in a managed and responsible manner through our marine pollution response contractors, if our landside waste providers couldn't assist.

9. Contingency Planning

9.1. Management of Site

In the event of a fire the first line of response would be directly to the line manager working the site and or to management. If it is felt that the fire can't be tackled by extinguishing the fire onsite with fire extinguishers, then there would be a request made for emergency services to the Port of Tilbury Police.
The Port Police Force will organise and communicate with the fire brigade, ambulances and or other services. The Port Police will be the first emergency service onsite and will assist in the segregation of any area and restricting any access. This could involve stopping port operations which are taking place within the area or adjoining sites, along with evacuation of any people and equipment from the area.

The Port Police along with the site management would organise for segregation and the movement of any stack onsite in a controlled manner to try to obtain containment of the fire, until the fire bridge arrived onsite.

9.2. Disruption to Existing Services and Operations

If the fire is of a level which would cause disruption to existing operations then the operation will cease until the Fire Brigade and or Environment Agency provide advice that it is safe for the operations to continue.
At times this could cause disruption to the inbound routing of bales into site and could stop shipping operations if there happened to be a ship working at this time. If this was the case, UKPH 47B Asset Management team would contact directly the following people:

For ship related activities, the following would be contacted:

- Ship Captain
- Agent acting on behalf of the customer that the vessel is being loaded/unloaded for,
- Port Customer involved

Inbound deliveries, the following would be contacted:

- Customer
- Haulier

In the above cases if it was unsafe to operate or there wasn't capacity on site due to the fire, then inbound deliveries would be cancelled and asked to be re-directed to an alternative site, and any ships will be asked to either cease operations until the site is made safe or organise for the ship to be relocated to another berth within the port where operations would be able to continue.

9.3. Disposal of Waste Material

In the event that there are bales which need to be disposed of the Port would make contact with the customer of the commodity and arrange for them to either collect the damaged waste material or organise for the disposal, Or the port will liaise with our waste management contractor about organising for skips and trailers to be brought into site to disposal of the waste appropriately.
At any one time there will always be a skip onsite for the disposal of residue waste material from RDF/RCF bales.
If required we would also look to contact any other type of specialist supplier we have for managing and assisting with the suction and containment of liquids, marine spill response contractors etc. where needed to ensure the site is clean and clear of any waste residues and all waste material is disposed of in a managed and responsible manner.

10. Resources Required

As stated in section 1.3, the port is open 24 hour a day, 7 days a week. The standard operational hours are between 06:00 – 22:00 Monday to Friday, however weekend operations are at customer request. During these times there would be trained plant operators available along with plant and equipment to assist with the relocation and moving of bales in an emergency, and to assist with monitoring. If for some reason there wasn't operations works (Bank Holiday etc.) then the Port of Tilbury Police Department has key contact details to mobilise staff. The majority of our work force lives within a radius of 15 miles from the port.
The Port Police, Engineering Department and Marine Department operate 24/7 and all will have access to and be trained to deploy flood barrier systems to have them fully effective within 20 minutes.

11. Accident Plan & Procedures

The POTLL Police Force provides a 1st line of response from an emergency services perspective, situated and always working within the port, (As referred to in section 3.8).

All incidents or accidents where emergency services are required are co-ordinated by the Port Police, who will organise and communicate with the fire brigade, ambulances and or other services. The Port Police will be the first emergency service onsite and will assist in the segregation of any area and restricting any access. All Incidents have to be investigated under the port policy and details are reported to the board on a monthly basis as a minimum (Appendix E).

We also have emergency evacuation procedures for the sites and carryout fire drills on a regular basis. Any incident or accident the port has a high level emergency master plan, to cover emergencies, which are co-ordinated by the Port Police. The Port of Tilbury Emergency Action Plan (Potempla) includes a plan for the evacuation of part or the whole of the Port in an emergency.

Any environment incident or complaint will be reported through the POTLL non-compliance internal procedure for reporting complaints and environmental incidents. As per the POTLL environmental policy (ISO14001), any incident will need to be investigated.

Any incident or complaint is reported to the POTLL Management, at Environmental Management Committee Meetings and at the Environmental Management review.

Copies of our Environment Spill Management and Incident Reporting Procedures can be found in Appendix F & our Quality NCR Corrective & Preventative Action Procedure can be found in Appendix G.

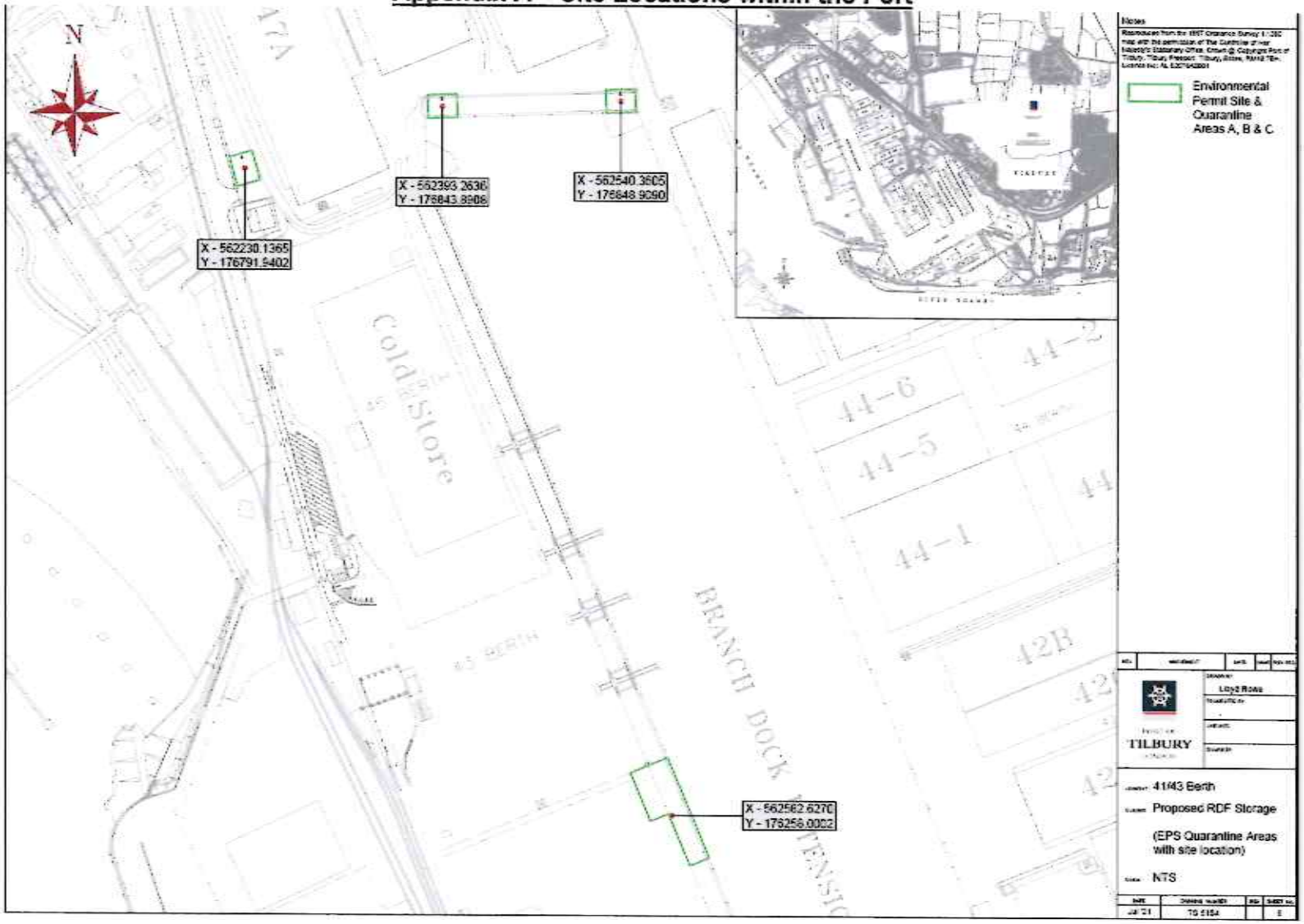
12. Conclusion

This fire prevention plan covers the preventative measure that POTLL have in place across their permitted sites to reduce the risk of fire within an RDF/RCF storage area. This plan has been based on industry best practices, the experience the POTLL already have with handling RDF/RCF, information provided in the fire prevention plan guidance from the Environment Agency, discussions with the local and national Environment Agency Advisors, Essex Fire and Rescue Services, and from a Risk Assessment carried out.
We have outlined our intentions for containing 4.65hrs worth of fire water, along with rapidly supplying our fleet of MHE to assist the emergency services to effectively and efficiently deal with any situation that may arise, along with the ability in being able to quickly pull cassettes out and segregate from others.

From this FPP, along with our vast experience to date of handling and storing RDF/RCF, POTLL believe that we can safely and effectively manage fire prevention on our site in a way which should be acceptable to the Environment Agency as part of the RDF/RCF permitted site within a port environment.

Appendices

Appendix A – Site Locations within the Port



Appendix B – FIRE RISK ASSESSMENT

FIRE RISK ASSESSMENT

Fire Prevention Plan

September 22

2021

Document Prepared by the SHE Team

Port of Tilbury London Ltd
Leslie Ford House
Tilbury Freeport
Tilbury
Essex
RM18 7EH

Contents Page

Regulatory Reform (Fire Safety Order) 2005 "A brief Introduction"

In October 2006 The 'Regulatory Reform (Fire Safety) Order' (hereinafter referred to as The FSO) came into force in England & Wales replacing all other fire safety legislation. The 'FSO' covers general fire protection measures to be taken & highlights fire safety duties that are needed to protect 'relevant persons' in case of fire in & around most 'premises'. The 'FSO' requires fire precautions to be put into place 'where necessary' & to the extent that is 'reasonable & practicable'.

Responsibility for complying with the 'FSO' rests with the 'responsible person' in a workplace. This may be the owner of the premises, employer, occupier & or any other person who may have control of the 'premises'. If there is more than one responsible person in any type of 'premises' (e.g. a multi-occupancy premises/ complex) ALL must take reasonable steps to co-operate & co-ordinate with each other.

If you are the 'responsible person' you MUST carry out a fire risk assessment, which must focus on the safety in case of a fire of all 'relevant persons'. It should pay particular attention to those at 'special risk' such as disabled people, those with special needs, the elderly, children & must include consideration of any 'dangerous substance' liable to be on the premises. The fire risk assessment will help to identify risks that can be removed or reduced & decide the nature & extent of the general fire precautions needed.

The fire risk assessment must be kept up to date (usually reviewed annually, for cause or unless that it is believed to be no longer valid) to ensure all fire precautions in his or her premises remain current & adequate. Apart from carrying out a suitable & sufficient fire risk assessment, the responsible person must also comply with the other duties as specified in the 'FSO', which are;

- Appoint one or more 'competent persons', depending on the size of the premises to carry out the preventive & protective measures required by the FSO (the responsible person can nominate themselves for this purpose). A Competent person is someone with enough training & experience or knowledge & other qualities to be able to implement these measures properly.

- Provide employees with clear & relevant information on the risks to them identified by the fire risk assessment, about measures you have taken to prevent fires, & how these measures will protect them if a fire breaks out.

- Consult employees about nominating people to carry out particular roles in connection with fire safety & about proposals to improve fire safety.

- Before employing a child, provide the parent with clear & relevant information on the risks to that child identified in the risk assessment, the measures you have put in place to prevent/ protect them from fire & inform any other responsible person of any risk to that child arising from their undertaking.

- Inform non employees, such as temporary workers, contractors, visitors, students, & members of the public of the relevant risk to them & provide them with information about who are the nominated competent persons & about the fire safety procedures for the premises.

- Co-operate & co-ordinate with other responsible persons who also have a premises in the building, inform them of any significant risk you find & how you will seek to reduce/ control those risks, which might affect the safety of their 'employees'.

- Provide the employer of any other person from outside the organisation who is working in your premises (e.g. an agency or contractor) with clear & relevant information on the risks to those employees, the preventive &

protective measures taken. You must provide those employees with appropriate & relevant information about the risks to them.

- Consider the presence of any dangerous substances in the premises & the risks this presents to the relevant person from fire.

- Provide appropriate information, instruction & training to employees during their normal working hours, about fire precautions in their workplace, upon appointment & from time to time throughout the period they work for you.

- Ensure that the premises & any subsequent equipment in connection with firefighting, fire detection, warning or emergency routes & exits are covered by a suitable system of maintenance & are maintained by a competent person, in an efficient state, in efficient working order & in good repair.

- Employees must also co-operate with the 'responsible person' to ensure that the workplace is safe from fire & it effects & must not do anything that will place themselves or other people at risk.

The Regulations – Summary

A brief summary of the Fire Safety Order regulations;

Regulation 3 – Meaning of "responsible person"
Regulation 4 – Meaning of the "general fire precautions"
Regulation 5 – Duties under this Order
Regulation 8 – Duty to take general fire precautions
Regulation 9 – Risk assessment
Regulation 10 – Applying the "principles of prevention"
Regulation 11 – Fire safety arrangements
Regulation 12 – Elimination or reducing of risks from dangerous substances
Regulation 13 – Firefighting & fire detection
Regulation 14 – Emergency routes & exits
Regulation 15 – Procedures for serious & imminent danger & for dangerous areas
Regulation 16 – Additional emergency measures in respect of dangerous substances
Regulation 17 – Maintenance
Regulation 18 – Safety assistance
Regulation 19 – Provision of information to employees
Regulation 20 – Provision of information to employers & the self-employed from outside undertakings Regulation 21 – Training
Regulation 22 – Co-operation & co-ordination
Regulation 23 – General duties of employees at work

Action in the Event of a Fire - Port of Tilbury UK Paper Hub 47 Berth

There are no fire alarms installed in the warehouses / open operational yards and quay.

ON HEARING A CALL OF 'FIRE'

- Please leave the area via the nearest exit route
- Where possible, please remove all MHE & vehicles from the area
- DO NOT stop to collect personal belongings
- Report to the Fire Assembly Point for roll call
- Once everyone has been accounted for and **ONLY** if assessed to be safe to do so, deploy the flood barrier systems and block drains with the clay dammit mats.
- **ONLY** If safe and assessed to be safe to do so and under the instruction of the emergency services, assist with MHE to move material from the area

IF YOU DISCOVER A FIRE

- Raise the alarm by contacting the Office and/or Shift Mangers using either a Truck or Hand held radio. Explain clearly where the fire is. Port Police to be advised by dialling **999** (from an internal phone) or **01375 846781** (from a mobile) stating **"Fire at the UKPH 47 Berth Quay" stating exact area on the terminal.**
- Stop work in the affected area immediately.
- Please call out and warn others of the danger.
- Where possible, please remove all MHE & vehicles
- Attack the fire using the provisions provided if it is safe to do so, if not, please leave the area and report to the Fire Assembly Point and await further instruction from Fire Marshal or Management.

Emergency Contact Numbers

NAME	NUMBER
Port Police	999 (internal land line) or 01375 846 781 (Mobile)

NAME	POSITION	NUMBER
Paul Dale	Asset & Site Director	07774 239316
John Russell	Asset Manager	07775 538582
Mark McClellan	Operations Manager	07747536267
Steve Marchant	Group Health and Safety Employee Engagement Manager	07709455377
Michelle Russell	Senior SHE Advisor	07887768070

* In the event of an emergency out of hours, please contact the numbers above.

Occupancy, Hazards, Loss Experience, Asbestos, Persons at Risk

Occupancy

Generally occupancy of UKPH 47 berth is approx. 20 operatives and administration personnel over a two shift system (06:00 – 14:00 and 14:00 – 22:00) over a 16 hour operational day. This is subject to change due to operational requirements. The majority of personnel congregate at the office and mess facilities at the entrance to the terminal well away from the proposed permit sites. Other personnel may also visit the site during the operational day, these personnel are required to sign in with the terminal management at the main office.

It is not expected that 'Disabled Persons' will be present on the premises.

It is not expected that 'Young Persons' will be employed in these premises.

Persons at Risk

- Employees
- Visitors & Customers
- Security Personnel & Port Police
- Appointed Contractors
- Third Parties (those loading or unloading cargo incl. deliveries)
- Emergency Services Personnel
- Neighbouring Tenants

Identified Hazards

- Death
- Burns
- Smoke inhalation
- Suffocation & asphyxiation
- Large amount of combustible material (Both on site and neighbouring sites)
- Power Sub-Station away from storage area

Dangerous Substances Identified

- Diesel

Explosive Atmospheres

No work processes involved with RDF/RCF storage and handling are believed to create an 'Explosive Atmosphere'.

Asbestos

No asbestos was identified within the designated permit areas.

Fire Loss Experience

No previous fire loss has been reported for the designated permit areas.

Additional Information

Further guidance on fire safety can be located through the SHE Team.

Considerations – Persons at Risk

- **Employees**
  Employers have a legal duty to their employees to discuss matters that may affect their health and safety while at work. The employees at the premises are likely to have a good understanding of the area, associated emergency arrangements and its layout thus making a quick escape more probable Personnel working at the premises may also be subject to some of the hazards as noted in this assessment. Employees may also feel the need to rescue colleagues, retrieve personal belongings or take extra risk to perform a heroic act.

- **Visitors & Customers**
  Generally visitors and customers will be supervised (by an employee) while on site and will probably only be on the premises for a limited period, however in some limited circumstances they may not be accompanied. Hazards likely to affect this group of people in the event of a fire are listed in this assessment. This group of people may be unfamiliar with the area's layout, emergency and evacuation arrangements.

- **Security Personnel/Port Police**
  Appointed security personnel may enter this area for a number of reasons including emergency situations and routine patrols etc. It is considered that this group of people may be lone working or out of hours. In the event of a fire, this group may come into contact with the hazards listed in this assessment.

- **Service Providers & Contractors**
  Any person coming onto the premises to conduct work should have appropriate training for the tasks they are undertaking. In addition, their employer should consider the risks they will be exposed to while on the site including that of fire. It is therefore imperative that both the 'responsible person' of the premises and the employer of the contractor/ service provider, co-ordinate efforts to minimise the risks associated with their line of work.

- **Third Parties (those delivering or collecting cargo)**
  Considerations should be given to the risk that third parties will be unfamiliar with the lay out and emergency arrangements of the area. It is unlikely that any third parties will be alone while on the premises as traffic and loading schedules are monitored and controlled; however, in the event of a fire it is likely that an employee will be present to give direction and aid any escape as necessary.

- **Emergency Services**
  The Emergency Services will have a limited knowledge with regard to a specific property, especially if they do not operate within the catchment area/ town. Therefore, should they need to enter an area to rescue persons who may be missing, considerations should be given to specific hazards they may encounter such as, dangerous substances within the premises, weak structures, difficult access/ egress, low structures, locked compartments etc. These issues should be discussed with the local Fire and Rescue Authority at the earliest opportunity so that strategies can be devised.

- **Neighbouring Tenants**
  Due to the large quantities of combustible materials stored on site and in neighbouring areas, consideration should be given to how fire risks from neighbouring sites may affect the proposed storage areas. Likewise, it should also be considered how a fire may spread between areas either through conduction, convection or radiation.

Specialised Considerations – Young Persons

When undertaking a fire risk assessment where a young person has been identified the following matters must be considered;

- (a) the inexperience, lack of awareness of risks & immaturity of young persons
- (b) the fitting-out & layout of the premises
- (c) The nature, degree & duration of exposure to physical & chemical agents
- (d) the form, range & use of work equipment & the way in which it is handled
- (e) the organisation of the processes & activities
- (f) the extent of the safety training provided or to be provided to young persons
- (e) Risks from agents, process & work listed in the Annex to the Council Directive 94/33/EC on the protection of young people at work.

Specialised Considerations

Dangerous Substance Identified: Diesel (ESSO Diesel) (via MHE trucks or road going lorry fuel tanks)

Manufacturer: Exxon Mobil Tel: (01372) 222 000

Hazardous Properties (regarding arrangements)

- Flammable (F) Flash Point 133°F >56°C)
- Auto ignition temperature 482°F >250°C

Safety Data Sheet Information: Please see attached to this risk assessment.

Possible Interactions
For the purposes of this risk assessment, other than the presence of natural air, no other substances were identified.

Materials to avoid interaction with the product are as follows:

- Sources of ignition
- Extreme sources of heat

Amount of Substance:

Entirely dependent on how may vehicles within the transit area and operational requirements.

- Approx. 61ltrs per MHE truck in operation
- Approx. 500ltrs per road vehicle/truck on or near to the site

Combination of Dangerous Substances

None identified in normal working circumstances. If work/tradesmen are operating within the area, a permit to work system is operated. (Please note, where dangerous substances could combine, this assessment must be reviewed).

Storage Arrangements

Diesel is not stored on site.

Maintenance Activities

Permit to work system employed for this area. If work is undertaken near fuel cells or MHE areas, further considerations should be taken in line with the MSDS attached to this risk assessment.

Likelihood of an Explosive Atmosphere

Unlikely to form under normal circumstances.

Lower Explosive Limit (LEL) 0.6%
Upper Explosive Limit (UEL) 7.0%

Ignition Sources: See documented in this risk assessment.

Measures to be taken in Respect of a Dangerous Substances

1. In applying measures to control risks the responsible person must, in order of priority—

(a) Reduce the quantity of dangerous substances to a minimum;

(b) Avoid or minimise the release of a dangerous substance;

(c) Control the release of a dangerous substance at source;

(d) Prevent the formation of an explosive atmosphere, including the application of appropriate ventilation;

(e) ensure that any release of a dangerous substance which may give rise to risk is suitably collected, safely contained, removed to a safe place, or otherwise rendered safe, as appropriate;

(f) Avoid—

(i) Ignition sources including electrostatic discharges; and

(ii) Such other adverse conditions as could result in harmful physical effects from a dangerous substance;

(g) Segregate incompatible dangerous substances.

2. The responsible person must ensure that mitigation measures applied in accordance with article 12(3)(b) include—

(a) Reducing to a minimum the number of persons exposed;

(b) Measures to avoid the propagation of fires or explosions;

(c) Providing explosion pressure relief arrangements;

(d) Providing explosion suppression equipment;

(e) Providing plant which is constructed so as to withstand the pressure likely to be produced by an explosion;

(f) Providing suitable personal protective equipment.

3. The responsible person must—

(a) Ensure that the premises are designed, constructed and maintained so as to reduce risk;

(b) ensure that suitable special, technical and organisational measures are designed, constructed, assembled, installed, provided and used so as to reduce risk;

(c) Ensure that special, technical and organisational measures are maintained in an efficient state, in efficient working order and in good repair;

(d) Ensure that equipment and protective systems meet the following requirements—

(i) Where power failure can give rise to the spread of additional risk, equipment and protective systems must be able to be maintained in a safe state of operation independently of the rest of the plant in the event of power failure;

(ii) means for manual override must be possible, operated by employees competent to do so, for shutting down equipment and protective systems incorporated within automatic processes which deviate from the intended operating conditions, provided that the provision or use of such means does not compromise safety;

(iii)on operation of emergency shutdown, accumulated energy must be dissipated as quickly and as safely as possible or isolated so that it no longer constitutes a hazard; and

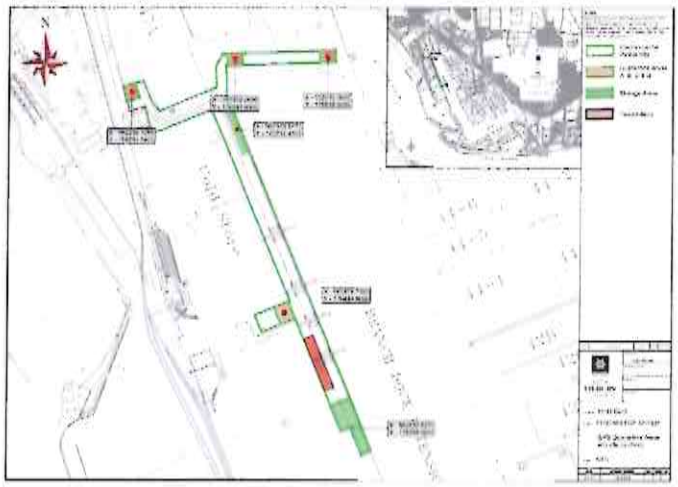
(iv)Necessary measures must be taken to prevent confusion between connecting devices;

(e) Where the work is carried out in hazardous places or involves hazardous activities, ensure that appropriate systems of work are applied including —

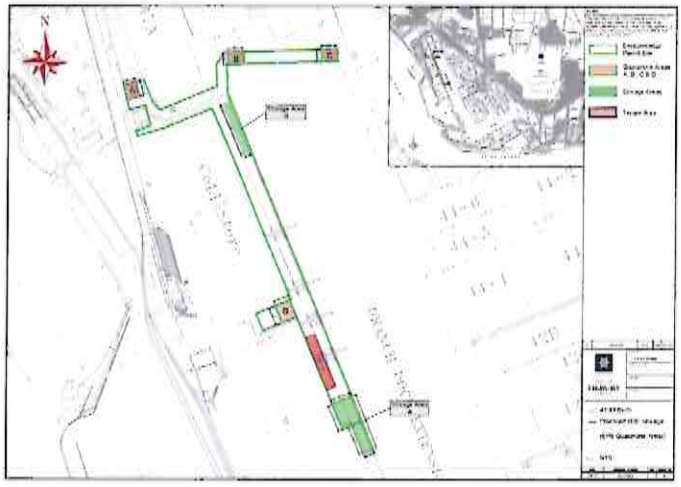
(i) The issuing of written instructions for the carrying out of work; and

(ii) A system of permits to work, with such permits being issued by a person with responsibility for this function prior to the commencement of the work concerned.

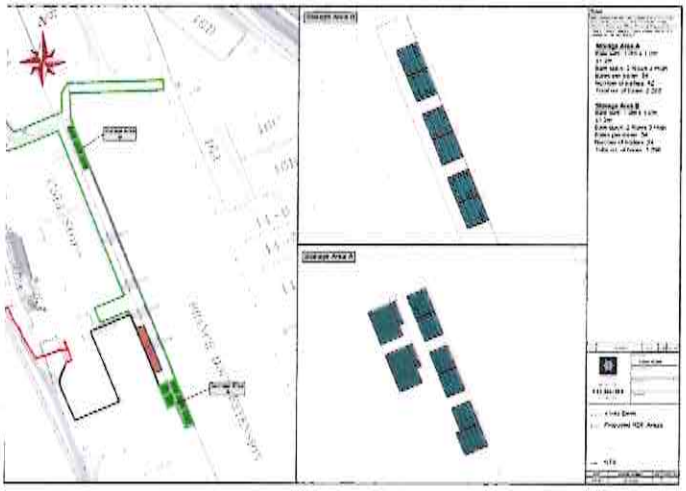
Fire Plan



UKPH 47B Terminal Overview of the permit site & quarantine areas with locations



X4 Quarantine areas for approx. 270 bales



Berth 41/43 expected storage capacity circa 3564 bales

Identifying the Hazards (Sources of Ignition)

There is a current statute in force preventing smoking within the workplace and shared public spaces. Smoking is permitted 'outside' the premises in designated areas under licence and provisions have been provided to ensure cigarette butts can be adequately extinguished and disposed.

Following an assessment of the permit areas, the following ignition sources have been identified;

Ignition Source	Description	Risk Rating
Cigarettes	Smoking personnel cannot be discredited as a possible fire risk. Although smoking is not permitted on the premises nor do personnel smoke within the area the risk cannot be ignored.	HIGH
Matches & lighters	As an immediate risk due to the naked flame element, it is considered that these items are likely to be carried onto the premises by persons that utilise the area.	HIGH
Sparking	Handling equipment clamps striking the ground and sparking.	LOW
Fixed electrical installations	Fixed electrical installations such as wiring, mains lighting, Substation, external shed and berth lighting etc.	LOW
Arson	Risk of malicious damage cannot be ignored.	HIGH
Workmen/ Tradesmen	A competent person should appropriately manage any work undertaken in the permit areas. From a risk perspective, considerations should be given to types of work undertaken, some may include metal striking metal, cutting tools, striking tools, friction caused from a process, hot works etc. Additionally, consideration should also be given to works carried out on neighbouring sites, and the robustness of management control	MEDIUM
Hot Surfaces on Mobile Plant & 3rd Party Vehicles	Operating machinery generates heat, specifically the engine bays and exhaust outlets. During the course of operational duties, these may come into contact with combustible materials which may cause an ignition	LOW
Portable Electrical Equipment	Trade persons etc. In line with workmen and tradesmen as mentioned above, faulty or uninspected portable electrical equipment may be bought into the operational area and present an ignition risk.	LOW
Self-Combustion	Heat generated as a result of biodegradable material stored within the RDF/RCF bales.	LOW
Equipment Failure	Electrical or mechanical failure of mobile plant and fixed electrical installations within the operational permit areas	LOW
Open Fires	Bonfires or the burning of unwanted combustible materials. While it is considered that this will not occur on the site, consideration should be given to neighbouring tenanted premises. Provisions for the granting of a fire license is the responsibility of the Port Police and could be granted where conditions and permissions allow.	LOW
Lightning	Lightning strike to the operational yards, buildings or structures.	LOW

Identifying the Hazards (Sources of Fuel)

Following an internal assessment of the permit area, the following sources of fuel have been Identified:

Fuel Source	Fuel Class	Description	Risk Rating
RDF/RCF Bales & Plastic Wrappers (once stored)	Class A	Tightly bound bales of combustible refuse. Each bale is approximately 1.0 ton. It is expected that a maximum of 3,745 tonnes will be stored on the terminal at any one time, which equates to approximately 3,564 bales at 41/43 berth.	HIGH
Mobile Plant	Class A	By nature of combustible materials utilised within the manufacture of the equipment.	LOW
Diesel Fuel	Class B	Stored inside MHE fuel tanks and that are likely to operate within the permit areas. Lorry road vehicle diesel tanks.	HIGH
Bottled Fuels/Gasses	Class B & C	Tenants / Work/ Trades Persons utilising bottled or transportable fuels either in liquid or gas form.	MEDIUM
Prefabricated Building & Containers	Class A	Prefabricated buildings/structures are present on the terminal although not in close proximity with the closet shed being 250 meters away from the storage area.	MEDIUM

Identifying the Hazards (Sources of Oxygen)

Following an internal assessment of the permit areas, the following sources of oxygen have been identified:

Oxygen Source	Description	Risk Rating
Natural present air	Present by virtue of the natural environment.	HIGH
Oxidising Agents	Work/trades persons using substances that have oxidising properties. While these may be present on the site, it is considered that these will not be present in large quantities and would also be mobile and removable where required.	LOW

Fire Risk Assessment Fact Finding *Please read in the context of open areas and operational yards.

Legal Fire Documentation		YES	NO	NA
1.0	Has there been a fire risk assessment completed before?	✓		
1.1	Is there a 'Fire Log Book' available for inspection by a 'Fire Officer' at all times?	✓		
1.2	Is the 'Fire Log Book' fully updated?		✓	
1.3	Was a 'Fire Certificate' issued under the 'Fire Precautions Act 1971'?		UNKNOWN	
1.4	Are services being carried out by a competent person?	✓		
Fire Prevention		YES	NO	NA
2.0	Do any work processes cause excessive build-up of combustible material?		✓	
2.1	Smoking - Adequate policy, controls & provisions provided?	✓		
2.2	Is access to the building controlled by the visitors register or badge system?	✓		
2.3	Is access to plant rooms restricted to authorised persons?	✓		
2.4	Safe use of portable/radiant heaters			✓
2.5	Are there reasonable measures to prevent fires of electrical origin?	✓		
2.6	Is electrical equipment in a satisfactory condition (PAT testing)			✓
2.7	Is there evidence of electrical circuit overloading (Ext leads/adaptors)?			✓
2.8	Is there policy regarding the use of personal electrical appliances?	✓		
2.9	Are there adequate arrangements for disposal of flammable waste?			✓
2.10	Are there adequate arrangements for disposal of combustible waste?	✓		
2.11	Are there any works in progress that could cause ignition?	✓		
2.12	Are light bulbs/electrical appliances and fittings near combustible materials?		✓	
2.13	Cooking appliances - are there arrangements for cleaning of filters and ducting?			✓
2.14	Contractors (external and in house) policy and controls including Hot work permits?	✓		
2.15	Are there arrangements for maintenance of plant, boilers and major appliances?	✓		
2.16	Is there adequate lightening protection?			✓
2.17	Have electrical installations BS 7671 been checked in the last 5 years?	✓		
2.18	Are electrical cupboards clear of combustible material?			✓
2.19	Are plant rooms clear of combustible material?			✓
2.20	Are boiler rooms clear of combustible material?			✓
2.21	Is the general housekeeping in good order?	✓		
2.22	Any rooms that are not permanently manned or have glass panels			✓
2.23	Does the company have an effective system to sweep the operational areas	✓		
Combustible Material/ Flammable Liquids		YES	NO	NA
3.0	Are combustible materials sorted in a safe location?	✓		
3.1	Are flammable substances, gasses & liquids used & stored correctly?	✓		
3.2	Is DSEAR applicable (Risk assessment in place)			✓
3.3	Do walls & ceilings have combustible coverings?			✓
3.4	Is there adequate fire stopping (concealed spaces/ wall penetrations)?			✓
3.5	Are there adequate routes/ reasonable compartmentation?	✓		
3.6	Are fire dampers provided (reasonable provision - as far as can be ascertained)?			✓
3.7	Are ceiling tiles fitted correctly?			✓
Emergency Lighting		YES	NO	NA
4.0	Does the system have a method to simulate mains failure?			✓
4.1	Do all final exit doors have emergency escape lighting (EEL) internally?			✓
4.2	Do all final exit doors have EEL?			✓
4.3	Do all escape routes have EEL?			✓
4.4	Do all intersections of escape corridors have EEL?			✓
4.5	Do all external escape routes have EEL?			✓
4.6	Do all stairways on escape routes have EEL?			✓
4.7	Does change of direction on escape routes have EEL?			✓
4.8	Do all toilets exceeding 8m2 have EEL?			✓
4.9	Do all toilets less than 8m2 without borrowed light have EEL?			✓
4.10	Do all windowless rooms other than store rooms have EEL?			✓
4.11	Do all areas greater than 60m2 have emergency lighting?			✓
4.12	Do all lifts have EEL?			✓
4.13	Is all escape signage illuminated with EEL?			✓
4.14	Do all switch rooms, plant rooms and generator rooms have EEL?			✓
4.15	Is the fire alarm panel illuminated with EEL?			✓
4.16	Does all of the equipment that needs to be shut down in an emergency have EEL			✓
4.17	Does areas with working machinery have EEL?			✓

Means of Escape		YES	NO	NA
5.0	Are there adequate & suitable 'Means of Escape'?	✓		
5.1	Are all escape routes useable without passing through doors needing keys/codes?			✓
5.2	Do all critical doors open in the direction of travel where necessary?			✓
5.3	Are escape routes free from obstruction (internally & externally)?			✓
5.4	Are all travel distance requirements met? (Single & alternative means of escape)			✓
5.4a	Not exceed 35m where more than one route is provided for normal risk			✓
5.4b	Not exceed 18m where only a single route is provided for normal risk			✓
5.4c	Not exceed 18m where more than one route is provided for high risk & bedrooms			✓
5.4d	Not exceed 9m were only a single route is provided for high risk and bedrooms			✓
5.5	Do external stairways, platforms, ladders etc. appear in good condition?			✓
5.6	Are escape routes free of combustible materials/electrical appliances?	✓		
5.7	Is the use of sliding and revolving doors as means of escape avoided?			✓
5.8	Are exits easily operable where necessary?			✓
5.9	Are there reasonable arrangements for occupants with disabilities?			✓
5.10	Are surfaces in good condition, free from trips, slips hazards?	✓		
5.11	Are normal lighting levels adequate?	✓		
5.12	Are fire evacuation diagrams displayed?		✓	
5.13	Is the loft space sub-divided			✓
5.14	Are there required arrangements for inner rooms?			✓
5.15	Are all removable fastenings removed from doors when the premises are opened?			✓
5.16	Do any rooms which may occupy 60 or more people have more than one exit			✓
5.17	Is the minimum width of all escape routes not less than 750mm			✓
5.18	Is the minimum width of escape routes used by wheelchairs 900mm minimum			✓
5.19	Do no more than 100 people use the 750mm escape route			✓
Fire Doors		YES	NO	NA
6.0	Are effected self-closing devices fitted, where necessary?			✓
6.1	Do doors fit correctly to adequate rebates? (full self-closure)			✓
6.2	Are smoke or heat seals fitted?			✓
6.3	Are 'fire door' notices fitted on fire doors?			✓
6.4	Is a record kept that fire doors are checked regularly to ensure they function satisfactorily?			✓
6.5	Is the building free of wedge open fire doors?			✓
6.6	Are fire doors free from holes and vents?			✓
Access & Fire Safety		YES	NO	NA
7.0	Is there sufficient equipment commensurate with the risk?		✓	
7.1	Is equipment located correctly & identifiable			✓
7.2	Is site access suitable for emergency services	✓		
7.3	Is any fixed fire suppression installed?	✓		
7.4	Does the room that has fixed fire suppression system have a room integrity test?			✓
7.5	Date of last fire brigade inspection? (If known)		TBA	
7.6	Has the Fire & Rescue Service been advised of any changes to the building or occupancy?			✓
Fire Alarm		YES	NO	NA
8.0	Reasonable manually operated electrical fire alarm system provided?			✓
8.1	Extent automatic fire detection generally appropriate to risk and occupancy			✓
8.2	Does the loft space have automatic detection			✓
8.3	Is there a zone plan fixed adjacent to the fire control panel?			✓
8.4	Is the panel showing normal status?			✓
8.5	Do all final exit doors have break glass call points?			✓
8.6	Are all break glass call points visible and unobstructed?			✓
8.7	Does anyone need to travel no more than 45m to find a break glass call points?			✓
8.8	Are break glasses situated to accommodate for disability and high fire hazard?			✓
8.9	Were magnetic door locks are fitted, do they release on activation of fire alarm?			✓
8.10	Is there a green break glass fitted to all magnetic doors?			✓
8.11	Are calling voids fitted with automatic smoke detectors?			✓
8.12	Is there a need for visual indicators or pagers to allow for DDA requirements?			✓
8.13	Has provision been made for DDA i.e. beacons and pagers?			✓
8.14	Is the boiler room/lift motor room covered by detection			✓
8.15	Is the automatic sprinkler systems connected to the fire alarm			✓
8.16	Is the system linked to remote manned centre			✓

Fire Extinguishers		YES	NO	NA
9.0	Are all portable fire extinguishers provided appropriate to this site?		✓	
9.1	Are all risks on site covered?		✓	
9.2	Are all the units serviced in accordance with BS 5839?	✓		
9.3	Are all units fixed to the wall or on stands?	✓		
9.4	Are identification signs present for all fire extinguishers?	✓		
Arson Reduction		YES	NO	NA
10.0	Has the area got CCTV Cameras	✓		
10.1	Has the building got a burglar/ intruder alarm?			✓
10.2	Does the basic security against arson appear reasonable?	✓		
10.3	Are outside waste disposal units kept at a safe distance from the main building?	✓		
10.4	Is there a regular collection of rubbish?	✓		
10.5	Are gas cylinders stored in a locked caged area away from the building?			✓
Fire Safety Training		YES	NO	NA
11.0	Is there a procedure in place to train all new employees?	✓		
11.1	Have all existing employees been trained?	✓		
11.2	Is there an appointed Fire Warden'(s) who have been given extra training?	✓		
11.3	Have all employees been trained in how to use the firefighting media?		✓	
Emergency Planning		YES	NO	NA
12.0	Competent person/fire safety manager appointed?	✓		
12.1	Are the fire safety management levels at the required standard	✓		
12.2	Is there an established fire policy/fire plan?	✓		
12.3	Suitable arrangements for calling services?	✓		
12.4	Suitable arrangements for meeting fire services? (Provisions of information)	✓		
12.5	Suitable arrangements for ensuring premises have been evacuated?	✓		
12.6	Is the assembly point clearly marked? (When allowed)	✓		
12.7	Are there adequate procedures for evacuating occupants that are unconscious on upper floors?			✓
12.8	Written arrangements for inspecting the premises at the end of the day?		✓	
12.9	Routine in house fire inspections?	✓		
12.10	Written arrangements in place for the removal of fastenings from fire doors?			✓
12.11	Appropriate liaison with the Fire Brigade?			✓
12.12	Has a PEEP been drawn up or considered?			✓
Emergency Signage		YES	NO	NA
13.0	Are all signs in accordance with BS 5499-5		✓	
13.1	Are all signs fitted at the correct height?		✓	
13.2	Would all signs be illuminated & legible in the event of a power failure?		✓	
13.3	Do all signs meet the required viewing distance for their size?		✓	
13.4	Are all escape routes & final exits indicated with signs?			✓
13.5	Are all fire doors with self-closing devices fitted with a sign?			✓
13.6	Are all fire doors leading to plant rooms, service cupboards fitted with a sign?			✓
13.7	Are there staff action notice signs in staff places?		✓	
13.8	Are there signs fitted to the final exit doors with push bar/pads?			✓
13.9	Are there signs to indicate action on hearing the fire alarm?		✓	
13.10	Are signs fitted externally to final exit doors?			✓
13.11	Are all emergency telephones indicated with a sign?			✓
13.12	Are there signs to indicate action to be taken in the event of a fire?		✓	
13.13	Are any sprinkler valves indicated with a sign?			✓
13.14	Are there any electrical cut-off switches indicated with a sign?			✓
13.15	Has any hazardous substances been indicated with a sign?			✓
13.16	Are there signs to indicate non automatic fire safety equipment?		✓	
13.17	Are all assembly areas fitted with a sign & identified?	✓		
13.18	Are fire hoses fitted with a sign?			✓
13.19	Are any fire suppression systems fitted with a sign?		✓	
13.20	Are all disabled refuge areas indicated with a sign?			✓
13.21	Are lifts fitted with signs (not to use in the event of fire)?			✓
Records		YES	NO	NA
14.0	Fire drills		✓	
14.1	Fire alarm testing			✓
14.2	Emergency lighting testing			✓
14.3	Fire doors			✓
14.4	Fire extinguisher		✓	
14.5	Other suppression systems			✓
14.6	Fire training	✓		
Testing & Maintenance		YES	NO	N/A
14.0	Have the required regular tests & maintenance been carried out on the following:			
14a	Fire detection & alarm systems?			✓

14b	Emergency lighting system?			✓
14c	Fire extinguishers & hose reels?	✓		
14d	Automatic sprinkler system?			✓
14e	Other fixed suppression systems?	✓		
14f	Automatic closing doors & shutters?			✓
14g	Evacuation & firefighting lifts?			✓
14h	Rising mains?			✓
14i	Escape stairs & corridors?			✓
14j	Final exits & fire doors/ security fastenings?			✓
14k	Lighting protection?			✓
14l	Fire Hydrants	✓		

Evaluating the Current Provisions

To ascertain suitable recommendations, an evaluation of the current provisions is required so that better mitigations against the risk of fire can be agreed and implemented within a reasonable timescale. Although not exhaustive, the following findings are considered to be most important.

Area/ Subject	Findings
Fire Detection/ Warning System	The proposed storage yard, loading and unloading areas have no fire alarm/automated detection systems present. Fire detection at the time of the inspection is only achievable via visual means only. CCTV on the terminal is provided albeit in limited capacity at the storage area. There are regular police patrols 24hours a day in the area. The terminal and its employees are in contact via a linked radio system.
Emergency Lighting	The proposed storage yards, loading and unloading areas have no automated emergency lighting systems present. Lighting within the area is provided by means of hard wired tower lights and fixed electrical installations.
Fire Prevention	Provisions for smokers have been provided by way of a licenced shelter. Suitable means to extinguish cigarettes has also been provided. Provision of bins and rubbish collection ensures that waste materials are adequately controlled. Permit system for contracted works is currently in operation on the site. Provisions exist for the checking of fixed electrical installations. Records are available from the engineering dept. RDF/RCF material will be handled in line with strict requirements as detailed in internal procedures. There are arrangements in place to help reduce the risk of arson. There are a number of concrete separations and fences used on the terminal to segregate cargo and buildings. In a limited capacity, these provide fire breaks between operational areas and neighbouring sites.
Fire Fighting Equipment	The terminal has a number strategically placed fire hydrants which operate on a pressurised ring main which runs through the entire Port. It is believed that these are regularly pressure checked and inspected. Not all were easily identifiable. Flow rate and pressure of the hydrant system was not available at the time of the inspection. There are small 2kg powder extinguishers installed within each of the operational trucks that operate on the site. There are extinguishers located throughout the warehouses although none in the location of the storage yard. Operational plant on the site is fitted with automated powder fire suppression systems. Available fire safety media is being inspected on an annual basis by a third party contractor (Bonds Fire). Fire tugs are contactable which may enter the dock basin to assist where necessary.

Fire Doors	Not immediately applicable, due to the risk assessment covering the operational yards only
Escape Routes	Escape routes from open operational areas are sufficient with multi directions of travel available that do not exceed 45 meters in any direction to a place of safety.
Signage	No fire safety signage is present in operational areas. Limited no smoking signs are present on the terminal. Fire assembly point is clearly marked and identified at the front of the terminal.
Portable Electrical Appliances	No portable appliances in operational storage areas were identified at the time of the inspection. Portable appliances may be brought onto the terminal and specifically the permit areas by means of contractors.
Fixed Electrical Installations	Records are available from Port engineering services to suggest that fixed electrical installations have been regularly maintained & tested. Buildings on the terminal are believed to be earthed. No lightening protection on any structures were observed at the time of the inspection.
Emergency Planning and Procedures	There are no specific fire procedure(s) or emergency arrangements written for the permit area although these are being prepared to be included in existing written procedures. Internal management procedures exist for fire safety within the business namely HSOP33 which can be found on the internal intranet. The Port Police have control over entire dock's emergency plan and would provide emergency assistance and escort where necessary. Limited fire plans exist for the offices and warehouses, does not include the permit site at present. Limited information and liaison is a risk should the emergency services attend out of hours. There appears to be no arrangements for inspecting the terminal at the end of the working day. Visitors to the site in some scenarios may not always be accompanied. It was discussed how these personnel would be notified if a fire was to occur and they were required to attend the assembly point for roll call. At present, it would be the responsibility of shift managers/fire wardens/marshals to locate them on site.

Staff Training & Awareness	Fire awareness/ fire safety training has been provided to employees operating on the terminal. General fire awareness training is usually delivered at induction. Fire wardens/Marshalls have been established on the terminal and have been provided extra training. Other than the appointed fire wardens/marshals, no other personnel have been give training on how to use fire safety media. It is believed that the fire safety training for non-wardens/marshals has not been reviewed in some time. A yearly fire safety 'tool box talk' is usually issued to all employees. ??
Records	Training records are available at the training dept. A fire log book is available at the terminal. Other related fire safety records are available with the quality control officer within the department.
Maintenance of MHE	Regular maintenance of plant and equipment is undertaken by Briggs and Central Plant and Engineering. Service records are available where necessary.
Monthly Tests/ Checks	Monthly provision and fire safety inspection checks are currently undertaken within the offices/terminal to include outside areas.
Emergency Drills	No fire drills have been conducted for operational area although fire drills have been conducted for the office buildings.
Storage & Use of COSHH Items Potentially Dangerous & Hazardous Substances	Diesel was the only other dangerous substance identified during the inspection, which exists in Operational plant fuel tanks. Briggs workshop and tenant use gas, these cylinders are kept secure within their sites.
House Keeping	Generally the housekeeping arrangements throughout the premises were of a good standard. These should be maintained at all times. It is noted that he terminal has a permanently employed full time berth cleaner and also road sweeper on the terminal.
Disabled Provisions	No PEEP's have been considered or implemented. Although it is thought no disable persons will be present within the premises.
Young persons	No 'Young Persons' risk assessment has been considered or implemented as it is thought that no young persons will be present on the terminal.

List of Current Fire Risk Mitigations *these can be added to or amended to as necessary

- Port Police & 24/7 – 365 security. Regular patrols in marked and unmarked vehicles
- Port CCTV Network which is monitored
- Controlled entry to the port under ISPS requirements
- Active operations team between 06:00 and 22:00 hours* Operations pending
- Daily monitoring of the work site
- Restricted access at nights and weekends
- Appoint and trained fire marshals
- Fire awareness training provided to all staff
- Fire breaks and product segregation
- Fire hydrants on pressurised ring main throughout the terminal
- Fire suppression systems on handling equipment
- Fire extinguishers provided in MHE cabs
- Maintained plant and equipment under statutory inspection regimes
- Smoking policy enforced and provisions for smokers provided outside of operational areas
- MHE refuelling undertaken outside of operational areas
- Locked fuel tanks and engine bays on mobile MHE
- Sign in and sign out procedures operated
- Maintenance of fixed electrical installations
- Hot works policy and procedures implemented
- Approved contractors list
- Documented risk assessments and safe systems of work for operational activities
- Dynamic risk assessment capabilities
- Site inspections
- Suitable and sufficient cargo stowing methods and configurations
- Dock basin with large water supply capacity
- Firefighting tugs available
- Stringent waste acceptance criteria and product analysis
- Provisions for the disposal of waste and rubbish. Regular waste collections

Applying the Principle of Prevention

It is recommended that when implementing any preventive & protective measures the following principles are adhered to by the 'responsible person', as per Regulation 10 & Schedule 1 of the FSO.
The principles are as follows;

(1) Avoid the risks.

(2) Evaluate the risks that cannot be avoided.

(3) Combat the risks at source.

(4) Adapt the technical progress.

(5) Replace the dangerous by the non or less dangerous.

(6) Develop a coherent overall prevention policy which covers technology, organisation of work & the influence of factors relating to the working environment.

(7) Give collective protective measures priority over individual protective measures.

(8) Give appropriate instructions to employees.

(9) Personal Protective Equipment

NOTE: Not all risks can be removed or avoided from the work environment, however the better the principle is applied (in numerical order) the better the level of mitigation is achieved.

Overall Fire Risk Assessment

Following the fire safety inspection of the permit areas, it is the opinion of the assessor that;

- The likelihood of a fire occurring is; Possible
- The potential severity of harm is; Slight
- The current risk to life is; Tolerable

HAZARD SEVERITY	LIKELIHOOD OF OCCURRENCE
5 Very High	**5** Very Likely
4 High	**4** Likely
3 Moderate	**3** Quite Possible
2 Slight	**2** Possible
1 Nil	**1** Unlikely

Risk Assessment = 2 x 2 = 4

Estimated Risk Level	Actions & Timescales
Trivial	No further action required other than maintaining the control measures that are currently in place.
Tolerable	No major additional controls required, however improvements could be beneficial.
Moderate	It is essential that efforts be made to reduce the risk. The additional control measures that are recommended should be implemented within a defined time period.
Substantial	Urgent action should be taken to reduce the risk. The additional control measures that are recommended should be implemented as soon as possible or limitations should be imposed on parts of the premises affected.
Intolerable	The premises or part of the premises affected should not be occupied until additional control measures that are recommended have been implemented

LIKELIHOOD							
	5	5	10	15	20	25	Intolerable
	4	4	8	12	16	20	Substantial
	3	3	6	9	12	15	Moderate
	2	2	4	6	8	10	Tolerable
	1	1	2	3	4	5	Trivial
		1	2	3	4	5	**SEVERITY**

Recommendations

In line with regulation 19 & 20 of the FSO the responsible person must provide information to their employees and others (those being, employees of others working on the premises) regarding the risks identified within the risk assessment and the preventive and protective measures in place to ensure their safety.

Following a review of the current arrangements, evaluations and hazards identified during the initial fire assessment of the permit sites, considerations should be given to the following areas for immediate review with the intention of bringing a better level of mitigation against the significant risk that fire could impose on the business.

Area/ Subject	Recommendations
Fire Detection/ Warning System	Automated fire detection in open operation yards is not thought to be practicable as part of this fire risk assessment. Management should consider expanding the current CCTV network to ensure better coverage of storage areas are achieved (advised that 2 additional cameras are to be fitted at either end of the storage area). It is recommended that management actively champion prevention methods in keeping sources of ignition, fuel and oxygen apart by means of suitable and sufficient proactive monitoring of the premises. Means of heat detection and monitoring technologies should be investigated to mitigate against self-combustion risk of bales.
Emergency Lighting	Although the lighting on the terminal appeared sufficient at present under normal conditions, it is suggested a lux survey of the area is conducted. It is not thought the addition of emergency lighting to open operational areas will materially affect this fire risk assessment or the risk to life. Where terminal lighting is provided, it is encouraged that this is not blocked or impeded by stows of cargo.
Fire Fighting Equipment	It is recommended that further firefighting media is installed within the permit areas as soon as possible by means of 'fire points'. It is recommended that firefighting media introduced to operational areas be appropriately located in a prominent safe position so that it is readily accessible. These should be housed in weather proof boxes. All firefighting media should be appropriately signed. It is recommended that luminescent (glow in the dark) signage is used. It is recommended that the terminal's fire hydrants are repainted bright yellow and signed with the letter 'H' to aid visibility. Furthermore, cargo should not impede or be stored over the top of a hydrant. Locations of hydrants are documented and available.
Signage	Safety signage should be placed at strategic points particularly in the permitted area and in line with fire safety, site hazards and risks. (e.g. extend out Fire action notices / no smoking / escape route)

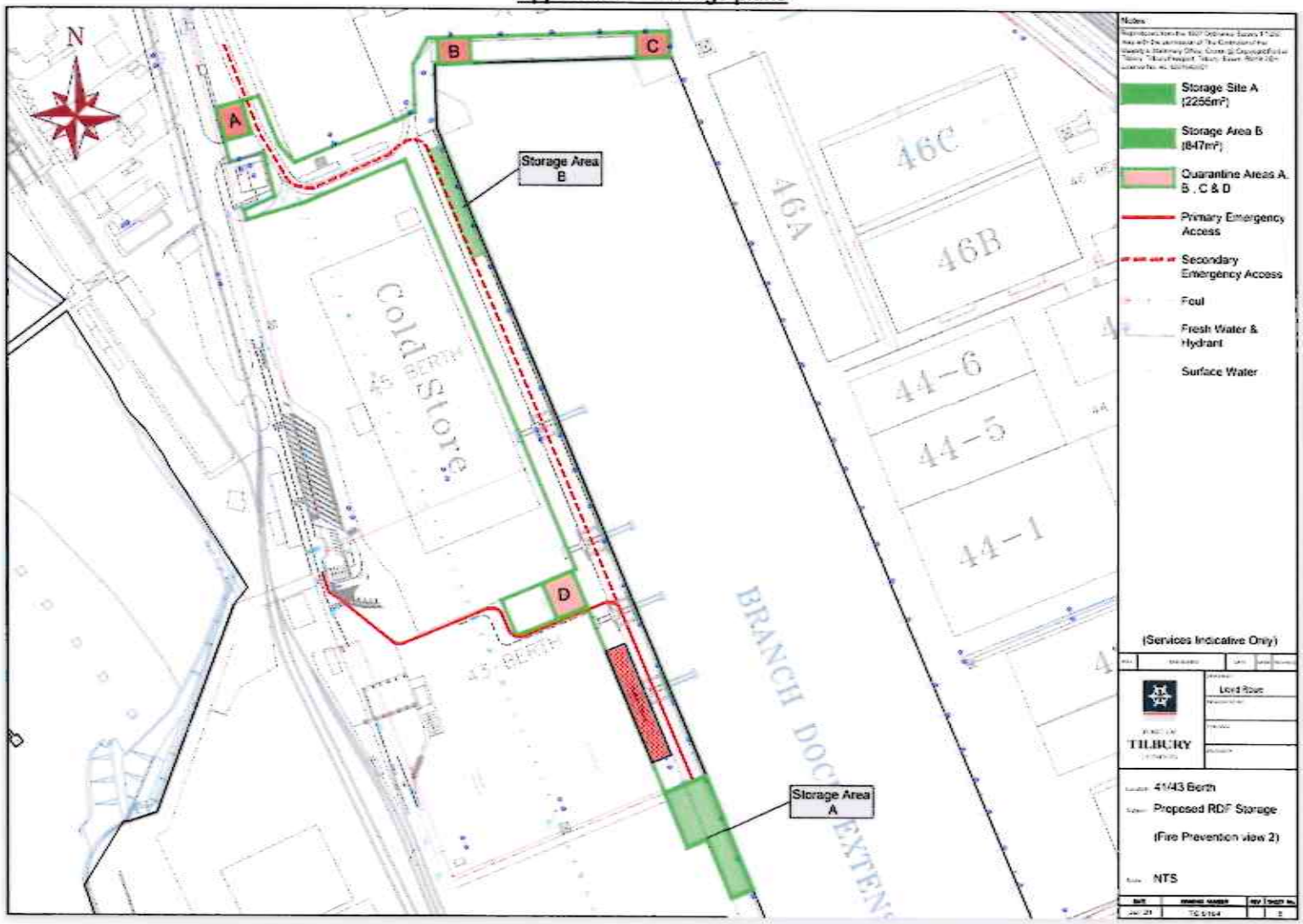
Emergency Plan/ Procedure	It is recommended that an emergency plan be drawn up and included with existing plans for the permit area, documented and briefed to all employees. Content should include (not exhaustive): • Action in the event of an emergency • Emergency contacts • Evacuation Procedure & roll call • Liaison with the emergency services • Site plans and drawings (terminal fire plan) • Dangerous Substances & MSDS information • Any other important factors such as power isolation for example • Fire hydrant flow rate & pressure • Fire hydrant couplings and auxiliary attachment Consideration should be given to how unaccompanied personnel (customers and contractors) who access the site be contacted in the event of an emergency where a roll call would be required or evacuation to the assembly point.
Records	It is recommended that the fire log book is reviewed to ensure that it is up to date and includes external areas/permit site.
Staff Training & Awareness	As per Regulation 21 of the FSO all employees must be provided with adequate fire safety training within work time. It is recommended that all staff are given refresher training where appropriate. Consideration should also be given to providing practical training or guidance on how to use a fire extinguisher. Additionally, consideration should also be given in providing the Fire Marshals practical training or guidance on how to engage the fire hydrants on the site should the fire brigade be unaware.
Monthly Tests/ Checks	It is recommended that the Permit site is added to existing checks.
Emergency Drills	It is recommended that two emergency drills are undertaken each year. To include external and permit areas .Ideally one drill should be planned, the other unplanned. In both instances these should be recorded with the records of those drills maintained. Usually these are recorded in the 'fire book' or via the 'Fire Drill Log'. After each drill a review meeting should be conducted.
House Keeping	The level of housekeeping should be maintained and ensure the permit site is included on the cleaning regime.

Quick Glossary of Terms

Term	Definition
Automatic fire detection system	A means of automatically detecting the products of a fire and sending a signal to a fire warning system. See 'Fire warning'.
Basement/ Cellar	A storey with a floor which at some point is more than 1,200mm below the highest level of ground adjacent to the outside walls, unless, and for escape purposes only, such area has adequate, independent and separate means of escape.
Child	Anyone who is not over compulsory school age, i.e. before or just after their 16th birthday.
Combustible Material	A substance that can be burned.
Compartment wall and/or floor	A fire-resisting wall or floor that separates one fire compartment from another.
Competent Person	A person with enough training and experience or knowledge and other qualities to enable them properly to assist in undertaking the preventive and protective measures.
Dangerous substance	1. A substance which because of its physico-chemical or chemical properties and the way it is used or is present at the workplace creates a risk. 2. A substance subject to the Dangerous Substances and Explosive Atmosphere Regulations 2002 (DSEAR).
Dead end	Area from which escape is possible in one direction only.
Direct distance	The shortest distance from any point within the floor area to the nearest storey exit, or fire-resisting route, ignoring walls, partitions and fixings.
Domestic Premises	Premises occupied as a private dwelling, excluding those areas used in common by the occupants of more than one such dwelling.
Emergency Escape Lighting	Lighting provided to illuminate escape routes that will function if the normal lighting fails.
Enforcing Authority	The fire and rescue authority or any other authority specified in Article 25 of the Regulatory Reform (Fire Safety) Order 2005.1
Escape Route	Route forming that part of the means of escape from any point in the premises to a final exit.
False Alarm	A fire signal, usually from a fire warning system, resulting from a cause other than fire.
Final Exit	An exit from a building where people can continue to disperse in safety and where they are no longer at danger from fire and/or smoke.
Fire Compartment	A building, or part of a building, constructed to prevent the spread of fire to or from another part of the same building or an adjoining building.
Fire Door	A door or shutter, together with its frame and furniture, provided for the passage of people, air or goods which, when closed is intended to restrict the passage of fire and/or smoke to a predictable level of performance.
Fire Resisting	The ability of a component or construction of a building to satisfy, for a stated period of time, some or all of the appropriate criteria of relevant standards. (Generally described as 30 minutes fire resisting or 60 minutes fire-resisting.) See BS EN 1363-1,45 BS 476-732 and associated standards for further information.

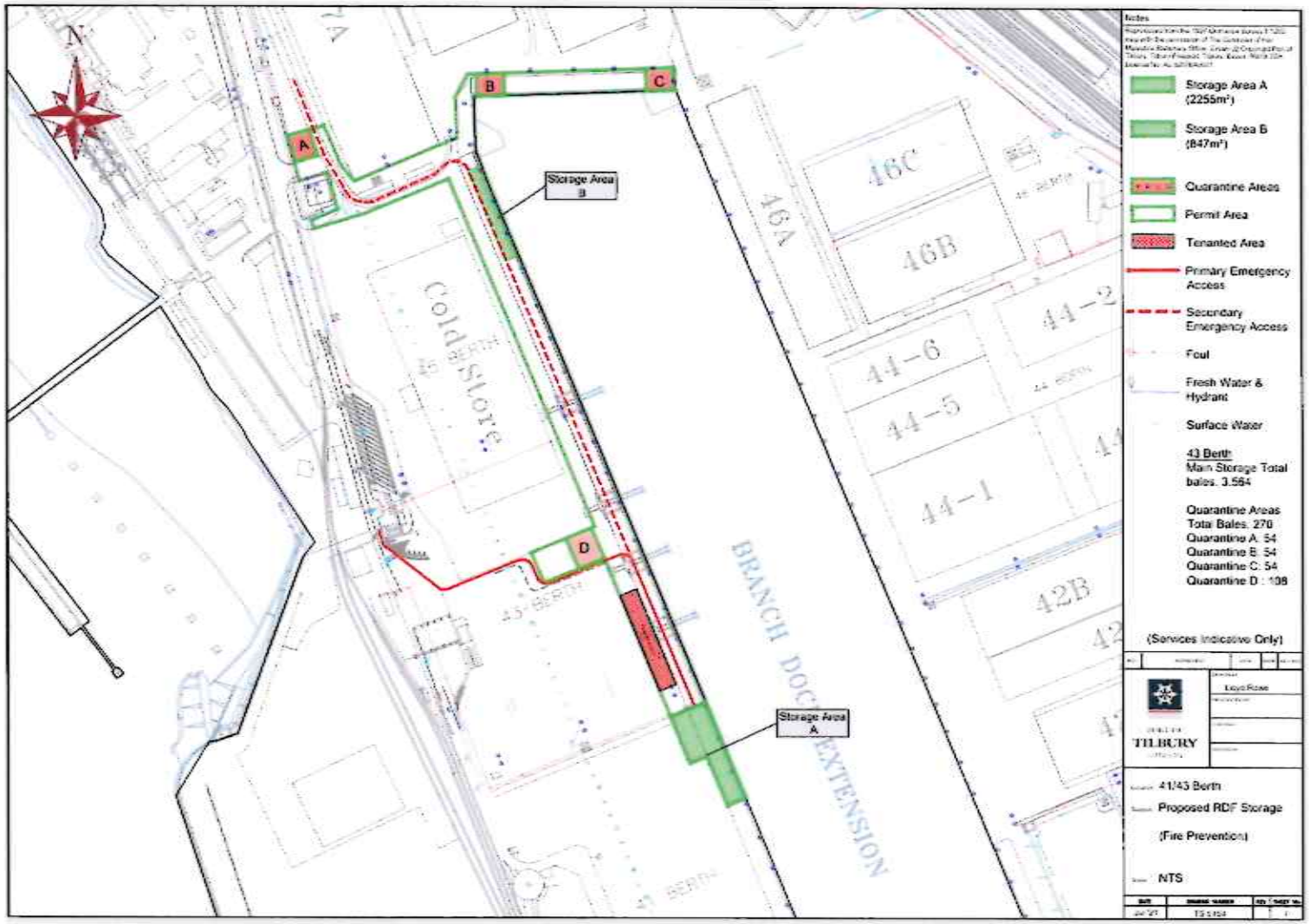
Fire Safety Strategy	A number of planned and co-ordinated arrangements designed to reduce the risk of fire and to ensure the safety of people if there is a fire.
Fire Stopping	A seal provided to close an imperfection of fit or design tolerance between elements or components, to restrict the passage of fire and smoke.
Fire-Warning System	A means of alerting people to the existence of a fire. (See automatic fire detection system.)
Flammable Material	Easily ignited and capable of burning rapidly.
Highly Flammable	Generally liquids with a flashpoint of below 21°C. (The Chemicals Hazard Information and Packaging for Supply Regulations 200247 (CHIP) give more detailed guidance.)
Hazardous Substance	1. See Dangerous substance. 2. A substance subject to the Control of Substances Hazardous to Health Regulations 2002 (COSHH).
Inner Room	A room from which escape is possible only by passing through another room (the access room).
Licensed Premises	Any premises that require a licence under any statute to undertake trade or conduct business activities.
Means of Escape	Route(s) provided to ensure safe egress from the premises or other locations to a place of total safety.
Premises	Any place, such as a building and the immediate land bounded by any enclosure of it, any tent, moveable or temporary structure or any installation or workplace.
Responsible Person	The person ultimately responsible for fire safety as defined in the Regulatory Reform (Fire Safety) Order 2005.1
Self Closing Device	A device that is capable of closing the door from any angle and against any latch fitted to the door.
Smoke Alarm	Device containing within one housing all the components, except possibly the energy source, for detecting smoke and giving an audible alarm.
Travel Distance	The actual distance to be travelled by a person from any point within the floor area to the nearest storey exit or final exit, having regard to the layout of walls, partitions and fixings.
Vision Panel	A transparent panel in a wall or door of an inner room enabling the occupant to become aware of a fire in the access area during the early stages.
Young Person	(a) A person aged 16 years, from the date on which he attains that age until and including the 31st August which next follows that date. (b) A person aged 16 years and over who is undertaking a course of full-time education at a school or college which is not advanced education. (c) A person aged 16 years and over who is undertaking approved training that is not provided through a contract of employment. For the purposes of paragraphs (b) and (c) the person: (a) Shall have commenced the course of full-time education or approved training before attaining the age of 19 years; and (b) Shall not have attained the age of 20 years.

Appendix C – Storage plans

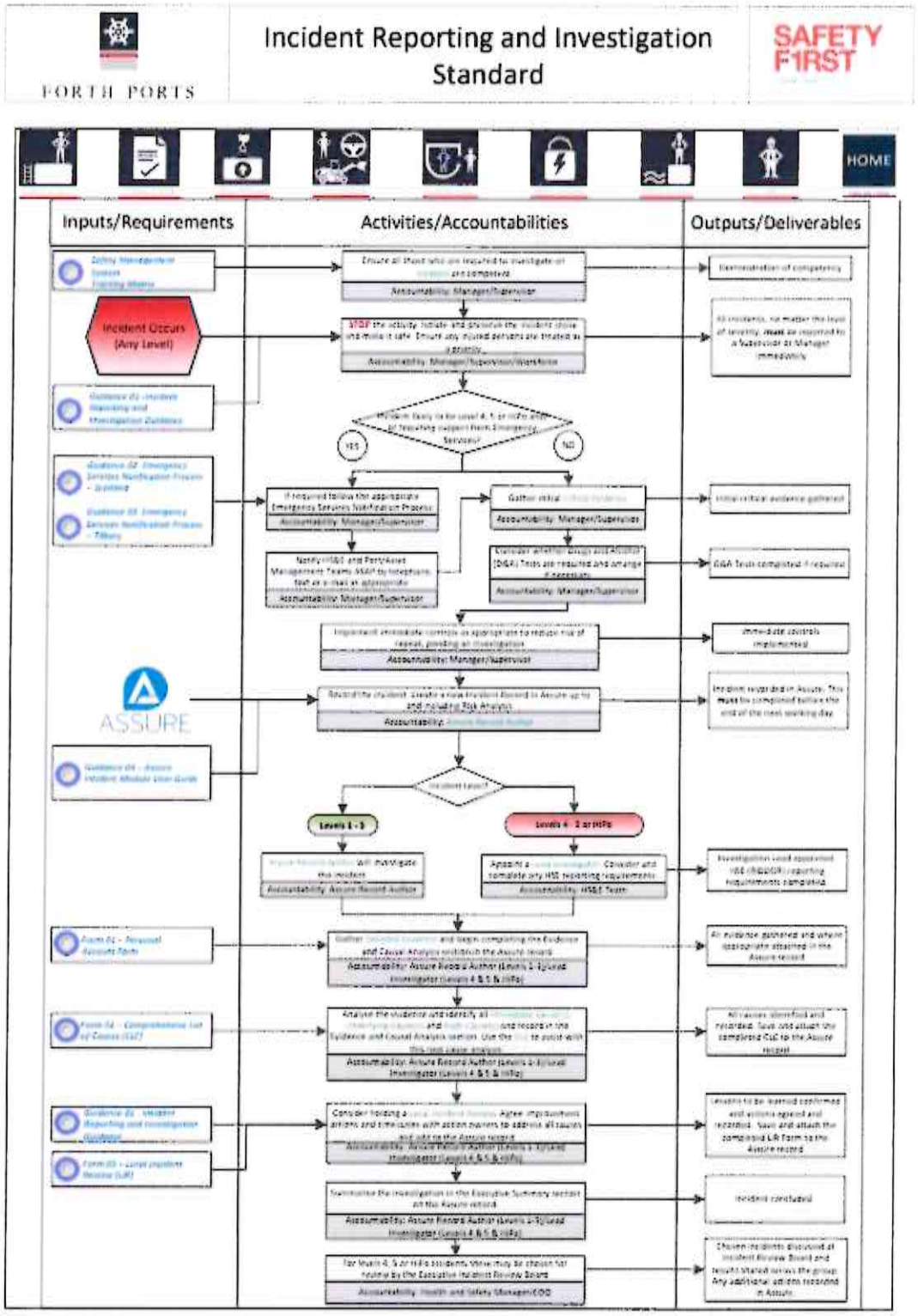



N
46D
46C
46A
46B
44-6
44-5
44
Storage Area B
Storage Area A
Cold Store
BRANCH DOCK EXTENSION
41 BERTH
Storage Area B
Bale size: 1.0m x 1.0m x1.3m
Bale stack: 2 Rows 3 High
Bales per trailer: 54
Number of trailers: 42
Total no. of bales: 2,268
Storage Area B
Bale size: 1.0m x 1.0m x1.3m
Bale stack: 2 Rows 3 High
Bales per trailer: 54
Number of trailers: 24
Total no. of bales: 1,296
Storage Area A
Storage Area B
Lloyd Rowe
TILBURY
41/43 Berth
Proposed RDF Areas
NTS
Jul '21
15.5454

Appendix D – Site Plans



Appendix E


FORTH PORTS
Incident Reporting and Investigation Standard
SAFETY FIRST
HOME
Inputs/Requirements
Activities/Accountabilities
Outputs/Deliverables
Incident Occurs (Any Level)
ASSURE

Appendix F – Environmental Spill Management and Incident Report Procedure

1.0 PURPOSE

This procedure provides for the identification and, where possible, the permanent rectification of any condition that might adversely affect the environment. The procedure now includes details of Spill Management for Asset based spills, common area spills such as, the Dock Perimeter Road, and spills into the dock water.

2.0 SCOPE

This procedure encompasses any activities that do not conform to the Environmental Procedures of the SHEQ Manual, or any other incident that may have an impact on the environment.

Ring fenced Tennant Operations will be expected as part of their contracts to have their own local emergency spill response procedures and equipment.

3.0 DEFINITIONS

Environmental Incident	Onsite release of a pollutant in sufficient quantity that could cause land, water or air contamination, which requires containment and recovery.

4.0 ROLES AND RESPONSIBILITIES

Senior Asset and Asset Managers / Department Heads are to ensure that investigations of significant incidents are implemented and that root cause analysis is undertaken to prevent future recurrences.

Operations Managers, Supervision and Employees are to ensure significant incidents which could affect the environment are reported and acted upon following the emergency procedures outlined in section 6 and that a full investigation is undertaken to identify the root causes.

SHE Department verify the reports of incidents and log the records accordingly for discussion at the relevant Management Committee meetings.

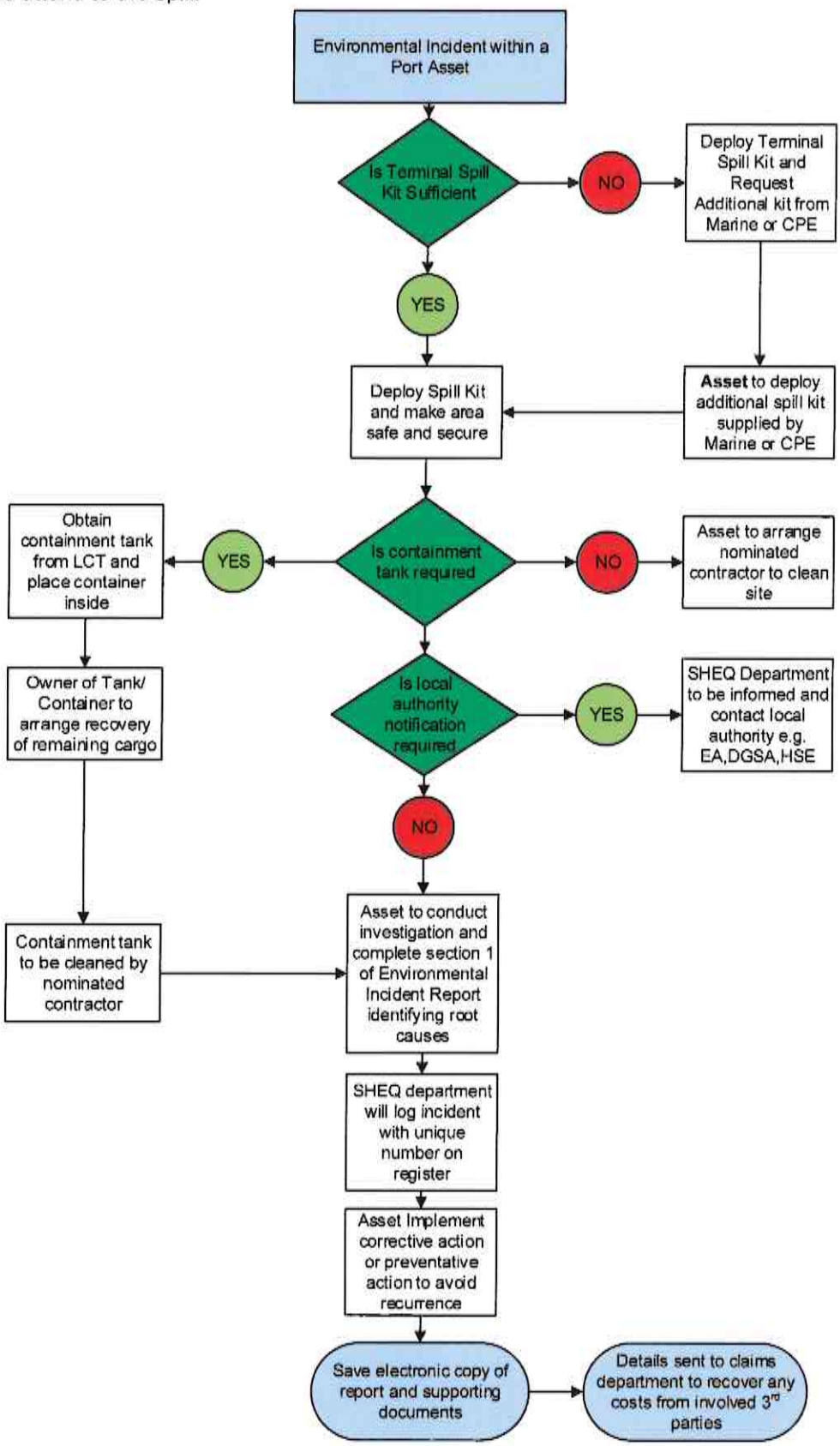
Port Police – will be first responders for any spillages on common areas for example the Dock Perimeter Road.

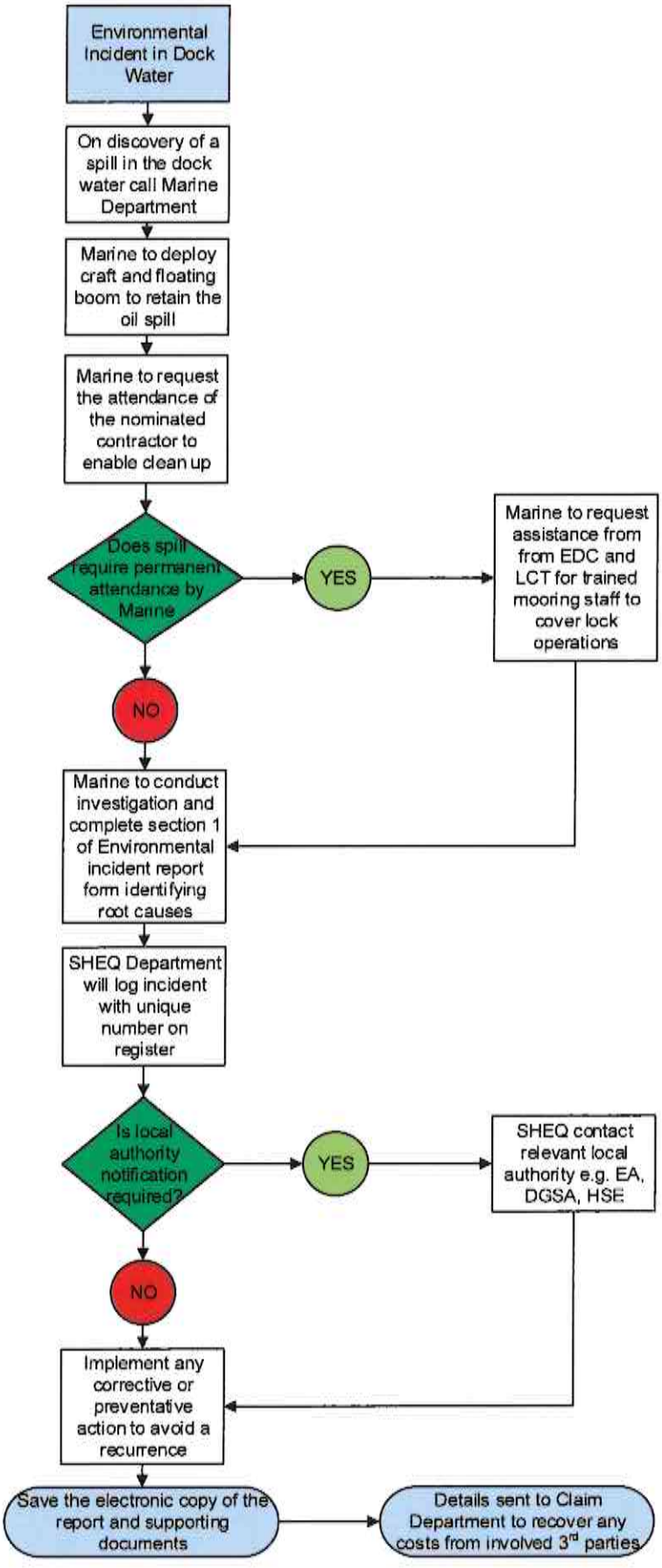
Marine and/or Central Plant Engineering– deliver the additional backup spill kits to the scene of a spill, this could be to common areas such as the Dock Perimeter Road or to an Asset/Department should local resources be insufficient. In addition, Marine will be first responder to any Dock Water based spillages.

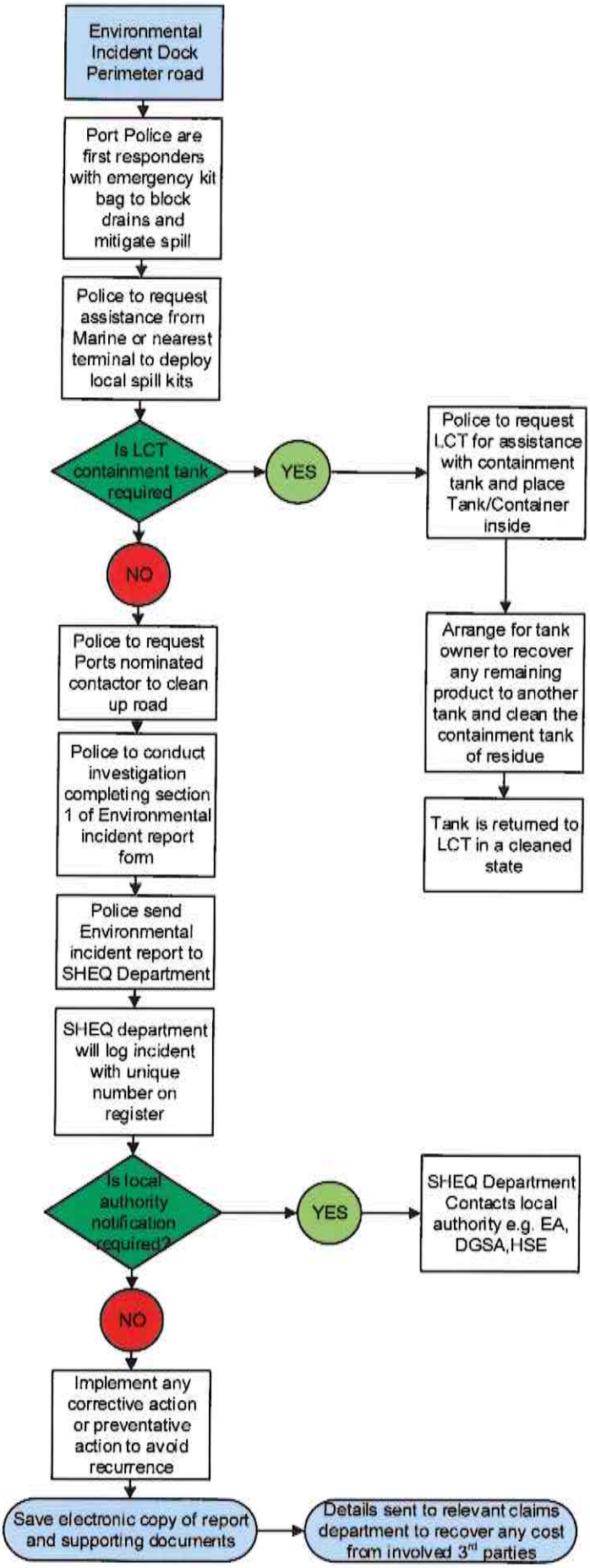
A nominated contractor will be retained for all major oil spill response and clean up see Call out guidance.

Claims Department- details of any associated cost for the deployment and clean-up of spill kits which need to be claimed from an involved 3rd party will need to be passed to the Claims Department to recover the funds.
(Claims Department comprises of the Deputy Harbour Master and Port Engineering Superintendent).
Should a major spillage occur, Assets and Departments may be requested to provide support in either the form of additional labour to deploy spill kits, operate equipment to lift containers or right overturned vehicles.

In addition, should a major dock water spill occur both LCT and EDC may be requested to provide operatives qualified to the Ports recognised mooring training level to cover lock movements whilst Marine attend to the spill.




Environmental Incident in Dock Water
On discovery of a spill in the dock water call Marine Department
Marine to deploy craft and floating boom to retain the oil spill
Marine to request the attendance of the nominated contractor to enable clean up
Does spill require permanent attendance by Marine
YES
Marine to request assistance from from EDC and LCT for trained mooring staff to cover lock operations
NO
Marine to conduct investigation and complete section 1 of Environmental incident report form identifying root causes
SHEQ Department will log incident with unique number on register
Is local authority notification required?
YES
SHEQ contact relevant local authority e.g. EA, DGSA, HSE
NO
Implement any corrective or preventative action to avoid a recurrence
Save the electronic copy of the report and supporting documents
Details sent to Claim Department to recover any costs from involved 3rd parties


Environmental Incident Dock Perimeter road
Port Police are first responders with emergency kit bag to block drains and mitigate spill
Police to request assistance from Marine or nearest terminal to deploy local spill kits
Is LCT containment tank required
YES
Police to request LCT for assistance with containment tank and place Tank/Container inside
NO
Arrange for tank owner to recover any remaining product to another tank and clean the containment tank of residue
Tank is returned to LCT in a cleaned state
Police to request Ports nominated contactor to clean up road
Police to conduct investigation completing section 1 of Environmental incident report form
Police send Environmental incident report to SHEQ Department
SHEQ department will log incident with unique number on register
Is local authority notification required?
YES
SHEQ Department Contacts local authority e.g. EA, DGSA,HSE
NO
Implement any corrective action or preventative action to avoid recurrence
Save electronic copy of report and supporting documents
Details sent to relevant claims department to recover any cost from involved 3rd parties

1.0 Purpose

This procedure provides for the identification and where possible, the permanent rectification of any condition that might adversely affect the areas related to Quality Management.

2.0 Scope

This procedure encompasses any activities that do not conform to the Quality Procedures Manual, or any other incident related to EQ.

3.0 Definitions

Non Conformance - When there is a deviation from a set process for cargo handling and/or information instruction and training. As a result of significant damage to a customer's product, or drop in agreed service provision, which results in a claim and/or formal complaint.

4.0 Responsibilities

Procedures have been set up to monitor Quality conditions in the Port and to rectify any matter that may adversely affect them. The procedures involve the appropriate Operational Asset Manager, Head of Engineering & Procurement, Asset Manager Marine and the SHE Department.

4.0 Records / Logs

Incident Report Forms and Registers will form part of the SHEQ System Documentation and, as such, shall be subject to periodic evaluation by the COO, or his delegated representative.

The documents required for the implementation of this procedure are: -

Non Conformance Report General (NCR)
Example of Import Goods Report Form (Conventional)
Example of Export Goods Report Form (Conventional)
Example of Conventional NCR register
Example of EDC NCR Register
Example of Grain and Bulks NCR Register

4.0 Procedure

Process based NCR's are identified in the Internal Systems Audits and Inspections and the NCR report is contained within the body of the Audit report

Corrective and Preventative Action

Corrective Action (Reactive approach)

The Company shall take action to eliminate the cause of nonconformities in order to prevent recurrence.

Corrective Actions shall be appropriate to the effects of the nonconformities encountered.
The Company shall:

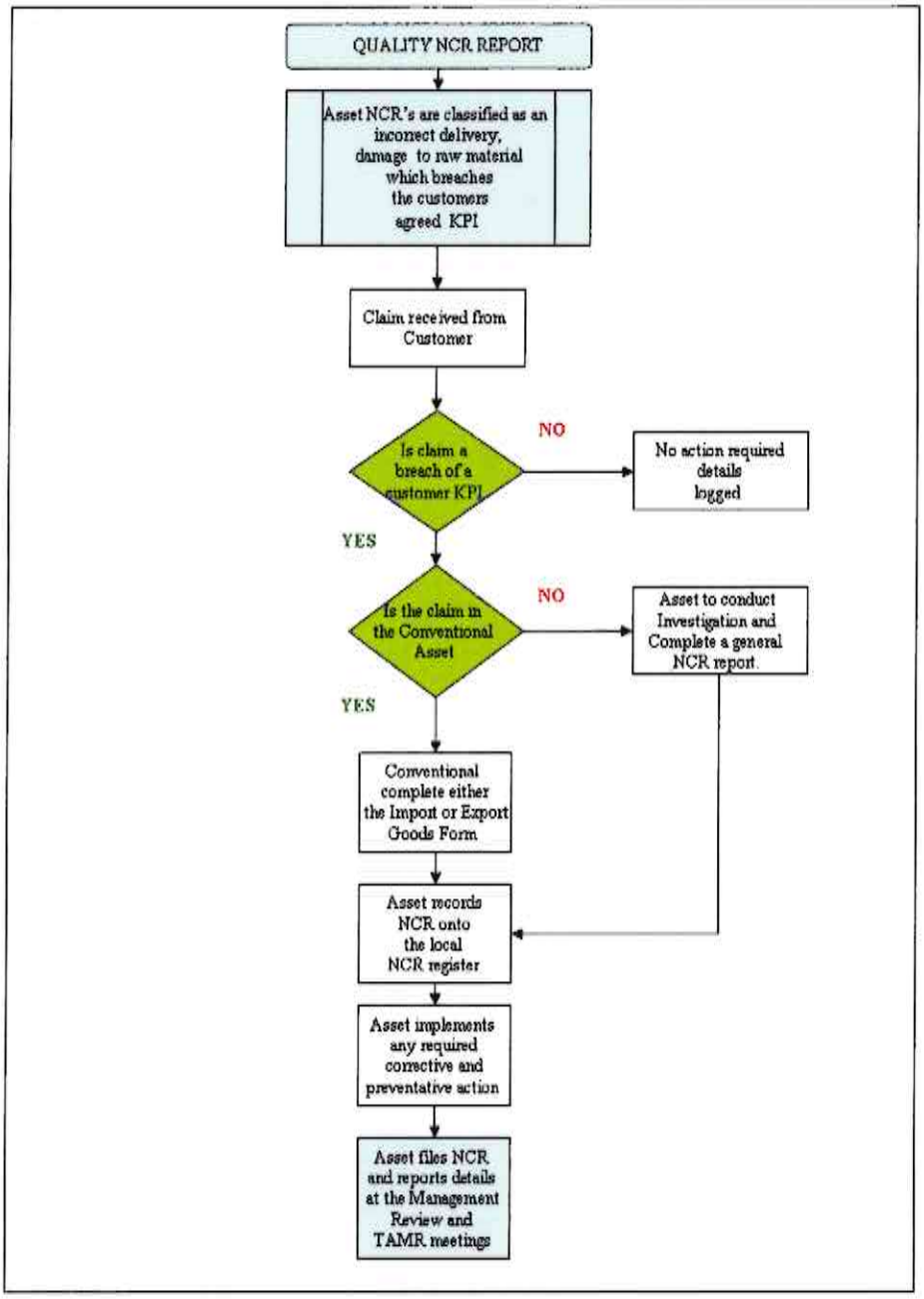
- Review nonconformities (including customer complaints) via the Non-Conformance Reporting System
- Determine the cause of nonconformities by review and analysis
- Evaluate the need for action to ensure the nonconformities do not recur
- Determine and implement action needed
- Hold records of the results of action taken
- Review corrective action taken in Operations Management Meetings and Quality Management Review Meetings

Preventative Action (Proactive approach)

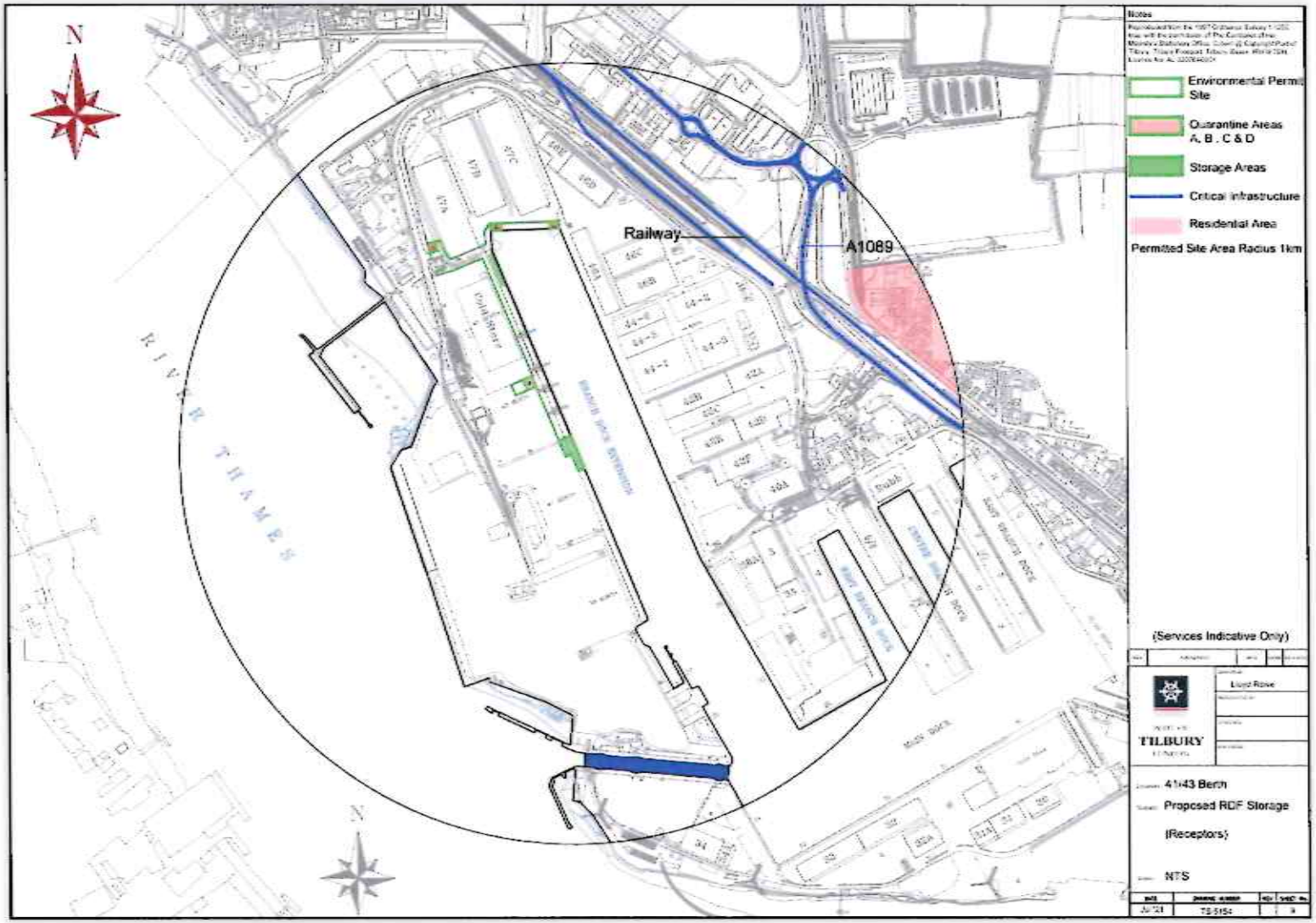
The Company shall determine action to eliminate the causes of potential nonconformities in order to prevent their occurrence. Preventative actions shall be appropriate to the effects of the potential problems.

The Company shall:

- Determine potential nonconformities and their causes in Operations Management Meetings and Internal Audits
- Evaluating the need for action to prevent occurrence of nonconformities
- Determine and implement action needed
- Hold records of results of action taken
- Review preventative action taken in Operations Management Meetings, Internal Audits and Quality Management Review Meetings



Appendix H – Location of Receptors



Environment Agency & ECFRS Joint Inspection

V2

Venue	Port of Tilbury London Ltd – RDF (Refuse Derived Fuel) Storage Area 21, Area 5/6, Area adjacent to 36a, Port of Tilbury, Essex, RM18 7DP
Date	22/07/2015
ECFRS	ADO Dave Moore (EPSA 07881 833344)
	StnO Steve Milchard (TFS 07785577671)
EA	Alison Hart (Environmental Officer (07789947299)
Site Representatives	Derek McGlashan (0131 555 8900)
	Dennis Tones (07972 051512)
	Alison Hall (0131 555 8900)

Outcomes

Variety of materials recycled.

- Storage for distribution only.
- RDF bales / Aggregates.
- Maximum storage currently 10,000 tonnes, looking to 25,000 tonnes.
- Bails selective household plastic rubbish,
  $1m^3$ size, weight 1 - 1.4 tons.
  Type 1 Refuse Derived Fuel (RDF) (black covering) – Low burn temperature
- Stored 4 m high, 30m x 15m.
- Source material from defined providers with set material criteria.
- Stored up to 14 weeks.

Comments :

- Operating Times – 06:00 to 22:00.
- Expected to be operating within 2015.
- Once storage capacity reached – no further materials accepted.
- Stack temperature measuring: As materials will not ignite without an external interaction, monitoring via CCTV and security monitoring out of hours considered appropriate.
- Action if stack hot – If stack smokes, space available to open stack and cool.
- Foul water system available to contain fire water.
- Dock gates are able to close to contain contaminated water run-off.

Fire separation : - Considered suitable

- Spacing between stacks currently maintained at 2.5 metres, to be extended to 3m, for fire appliance access. (Appliance width 2.67 m).
- Consolatory factors,
  A – 24/7 security with CCTV.
  B – Non-smoking site / designated smoking area.
  C – Water supply always available, site hydrants and dock water level guaranteed by closure of dock gates.
  D – Access available around the sites, access possible within the storage areas by ECFRS appliances.
- Heavy plant available, site operatives live locally and other machine operatives are available via mutual aid on the Port.
- Storage of Aggregate (non-flammable) which may be utilised as a fire break to extend the distance between RDF stacks (replace RDF stacks).
- Consideration for the introduction of LEGIO concrete fire resisting blocks will enable a reduction of those storage distances. (Thermal insulation).
- Consideration to increase the spacing around building to protect the structures or to utilise LEGIO blocks to separate bales from the building, LEGIO blocks to be higher than the bale storage.
- The above opinions are based on the specific type of materials proposed to be stored and the available consolatory factors, should any of these change, and then a re-evaluation will be required.

Surrounding risks :

- Due to distance of surrounding risks, not considered an issue.

Water supplies: – Considered suitable.

- Port water in dock.
- Hydrant system throughout tilbury docks.

Other :

- Fork lifts diesel engine.
- Fire extinguishers on each machine.

Local Recommended Station Action :

- Site visits recommended once fully operational.
- SSRI – suggest plan included on SSRI.

TFS Action :

- Initiate Audit, interaction with site.
- Fire risk assessment to be completed by occupants.
- Means of giving warning in case of fire.

EA Actions :

- The EA will inspect this site as required and request ECFRS assistance as required, similarly should ECFRS identify any queries, contact the EA.

Appendix J

Daily Temperature Monitoring Record

Daily Temperature Report

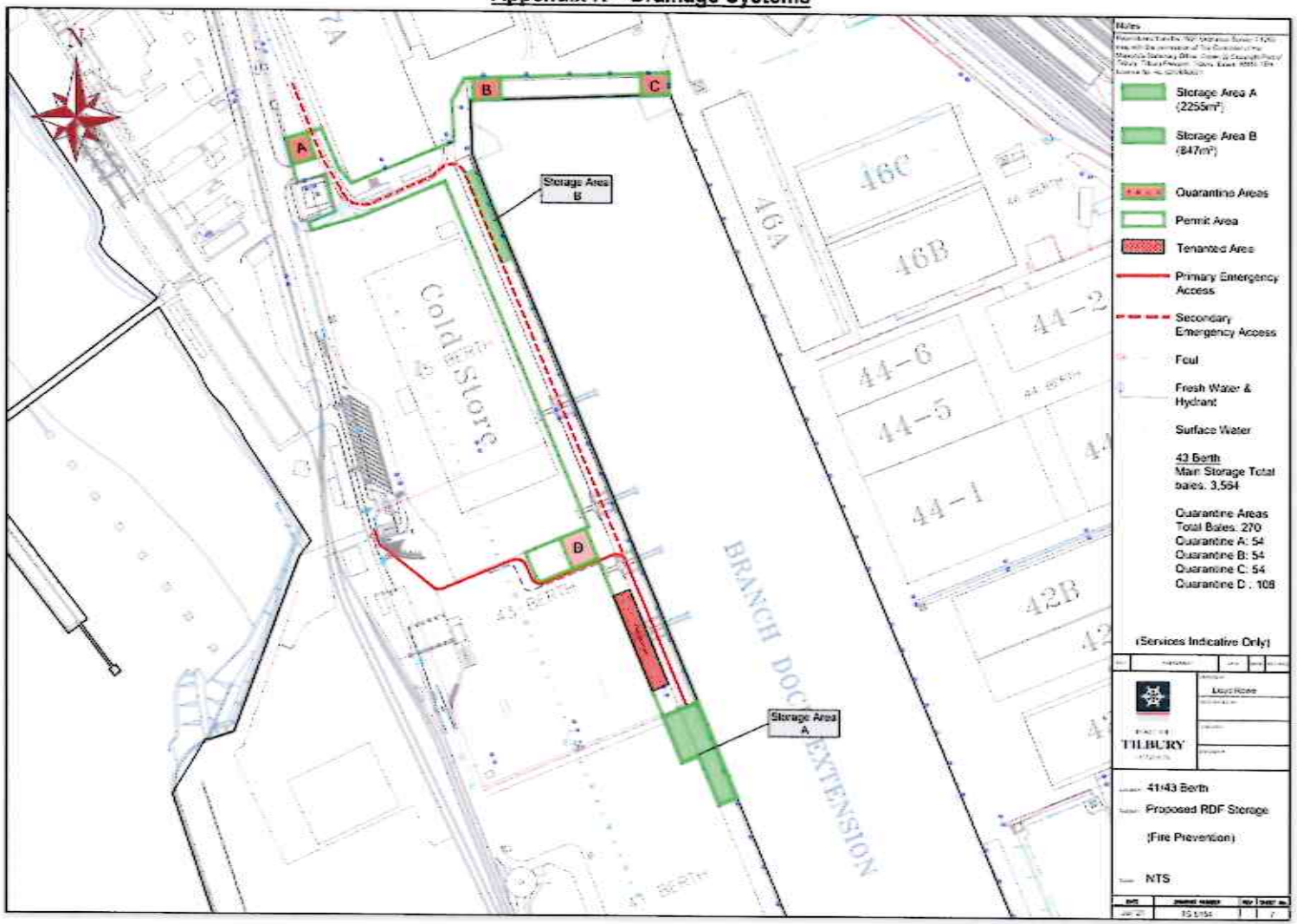
PORT OF TILBURY LONDON

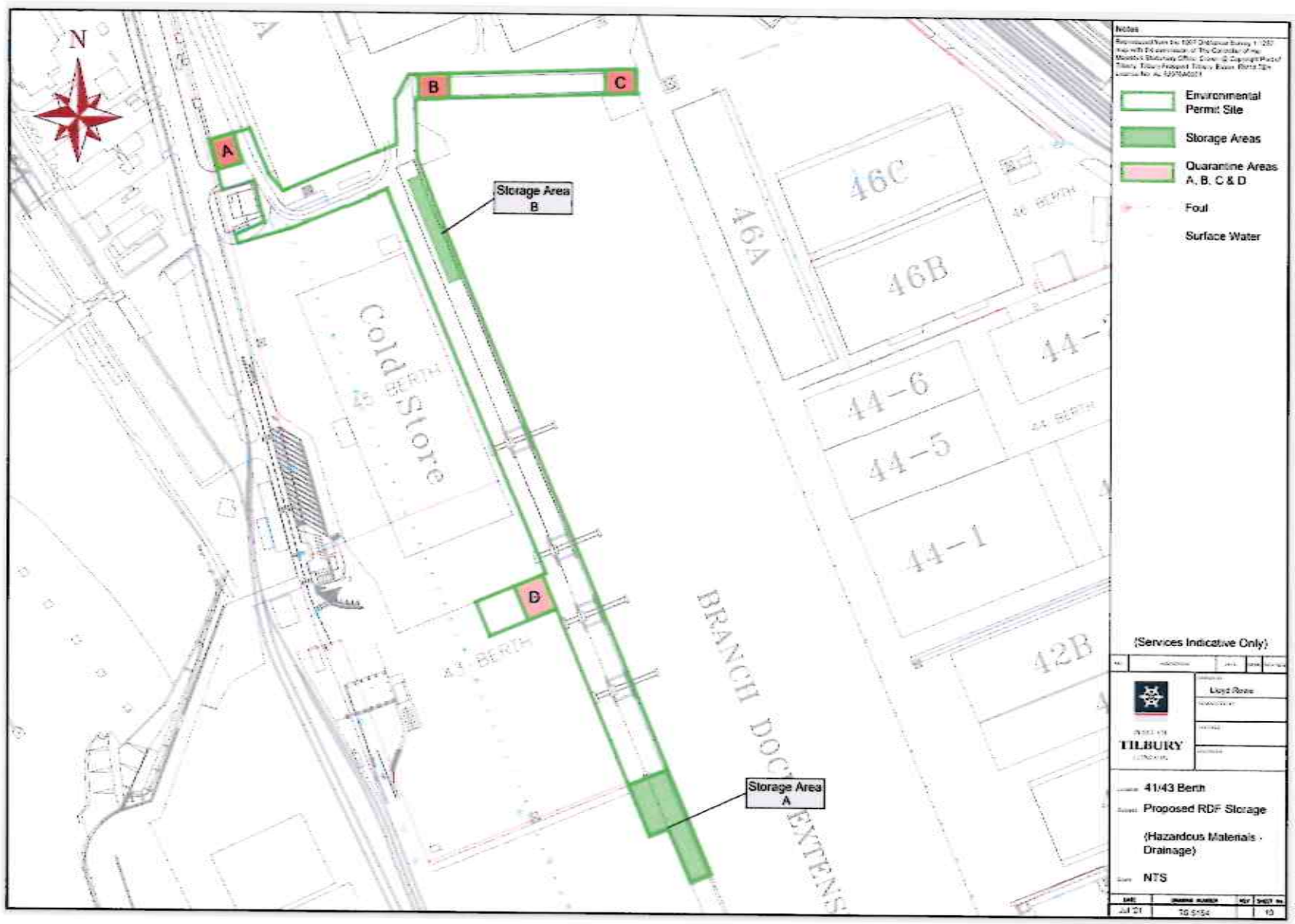
	Time of Test		Comments	Date
Location of test (Using Attached marked areas on Map to clearly identify location)				
Weather conditions (Dry, Rain, Fog, Snow)				
Ambient Air Temperature (Very warm, warm, mild, cold, very cold)				
Is the source evident?				
Temperature of Bales				
Temperature Intensity Rating				
Any other comments or observations				

Temperature Intensity Rating	

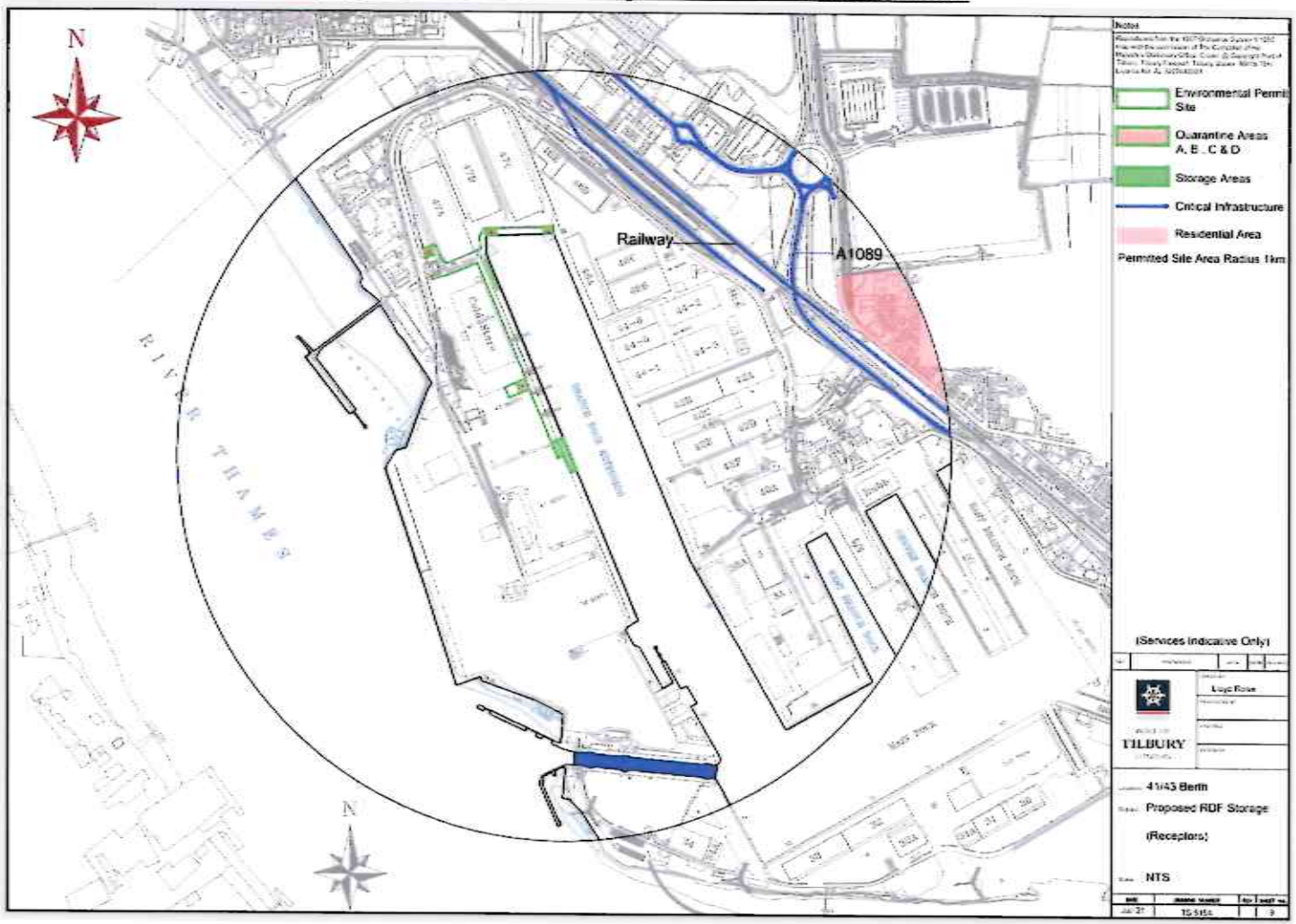
Temperature Intensity Rating
0 – 5-15 °C
1 – 15-25 °C
2 – 25-35 °C
3 – 35-45 °C
4 – 45+ °C

Appendix K – Drainage Systems

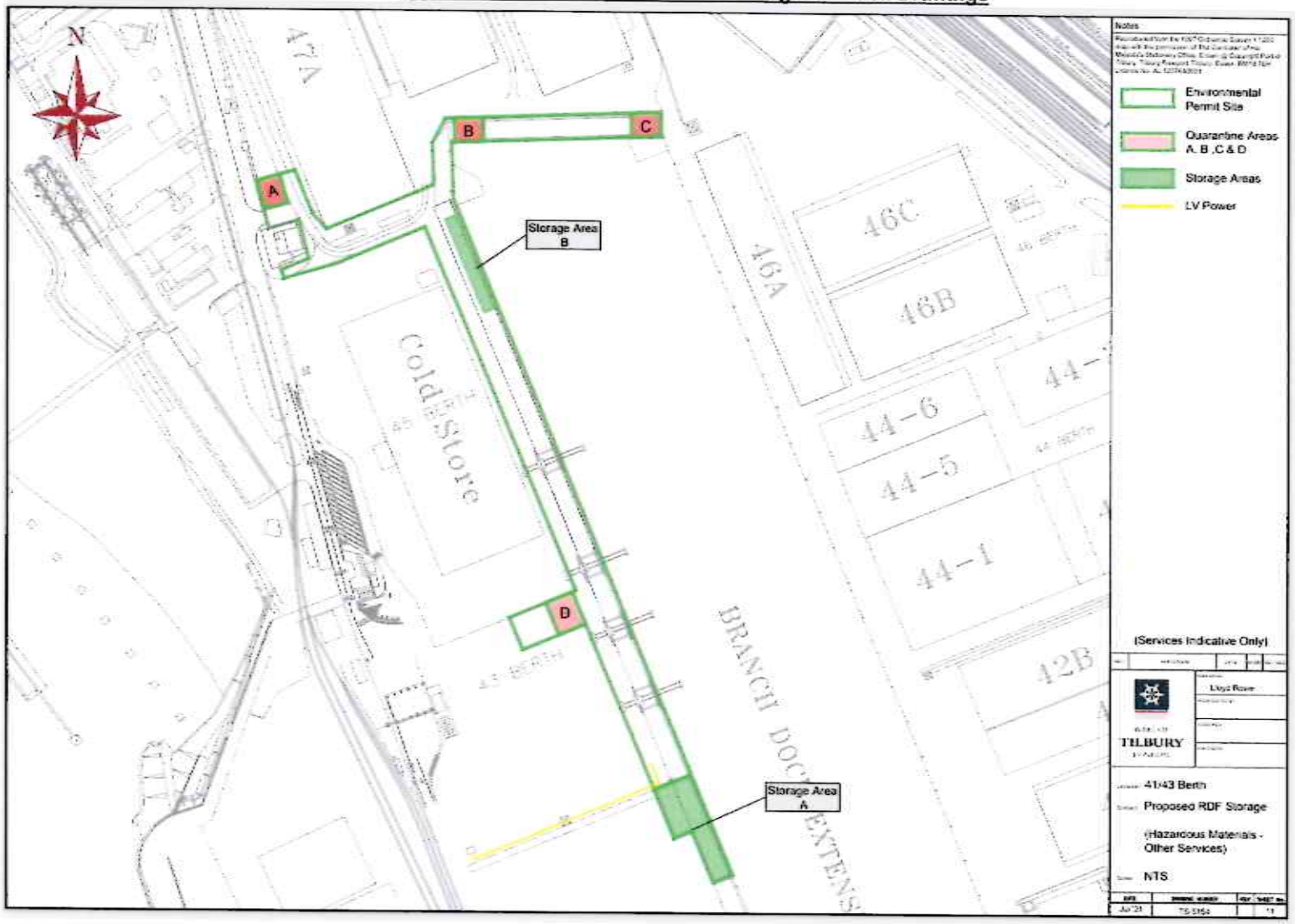



N
A
B
C
D
Storage Area B
Storage Area A
Cold Store
46A
46C
46B
44-6
44-5
44-1
42B
BRANCH DOCK EXTENS
Notes
Environmental Permit Site
Storage Areas
Quarantine Areas A, B, C & D
Foul
Surface Water
(Services Indicative Only)
Lloyd Rose
TILBURY
41/43 Berth
Proposed RDF Storage
(Hazardous Materials - Drainage)
NTS
Jul '21
TG 5154
10

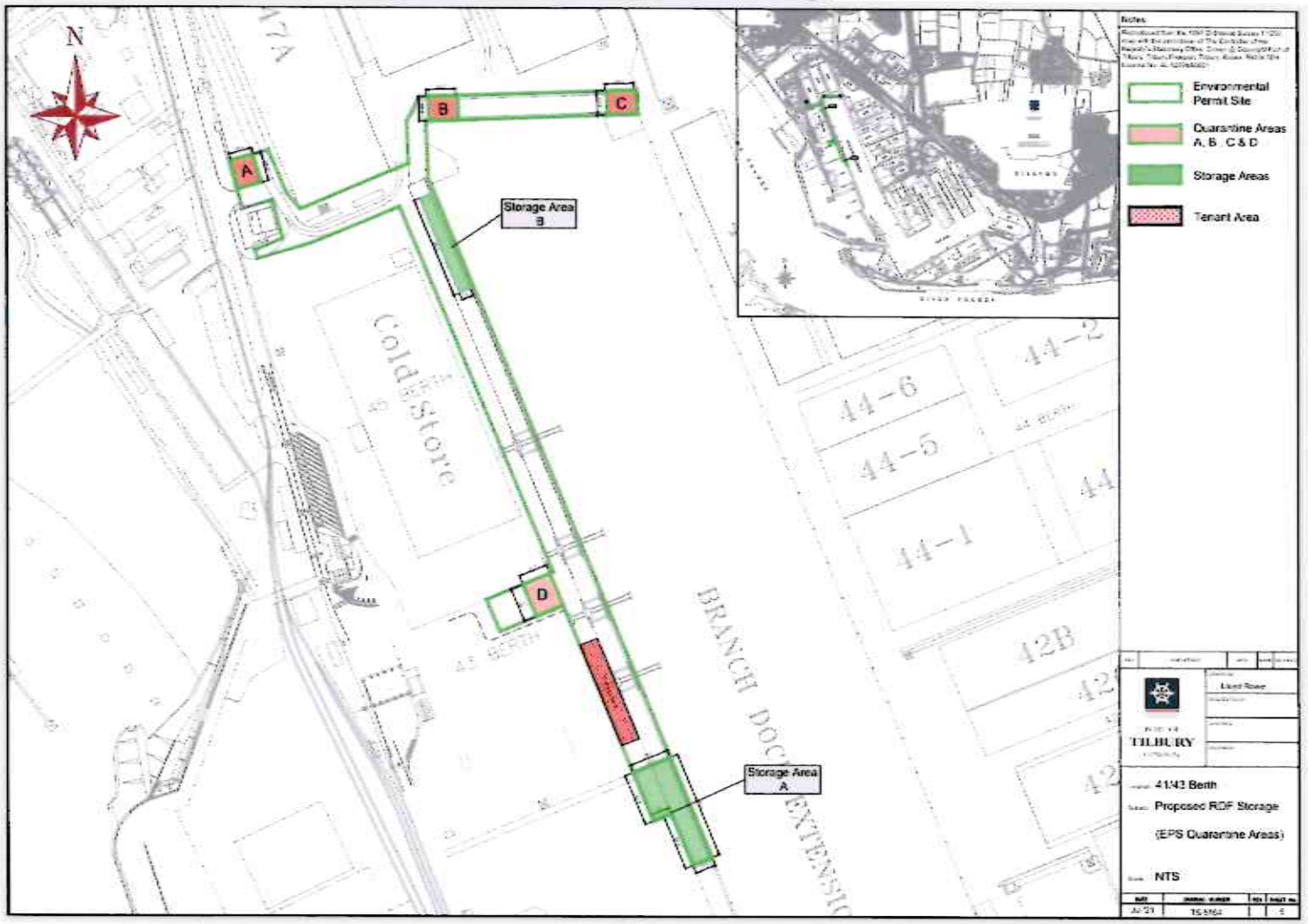
Appendix L – Receptor dock gates / dock critical infrastructure

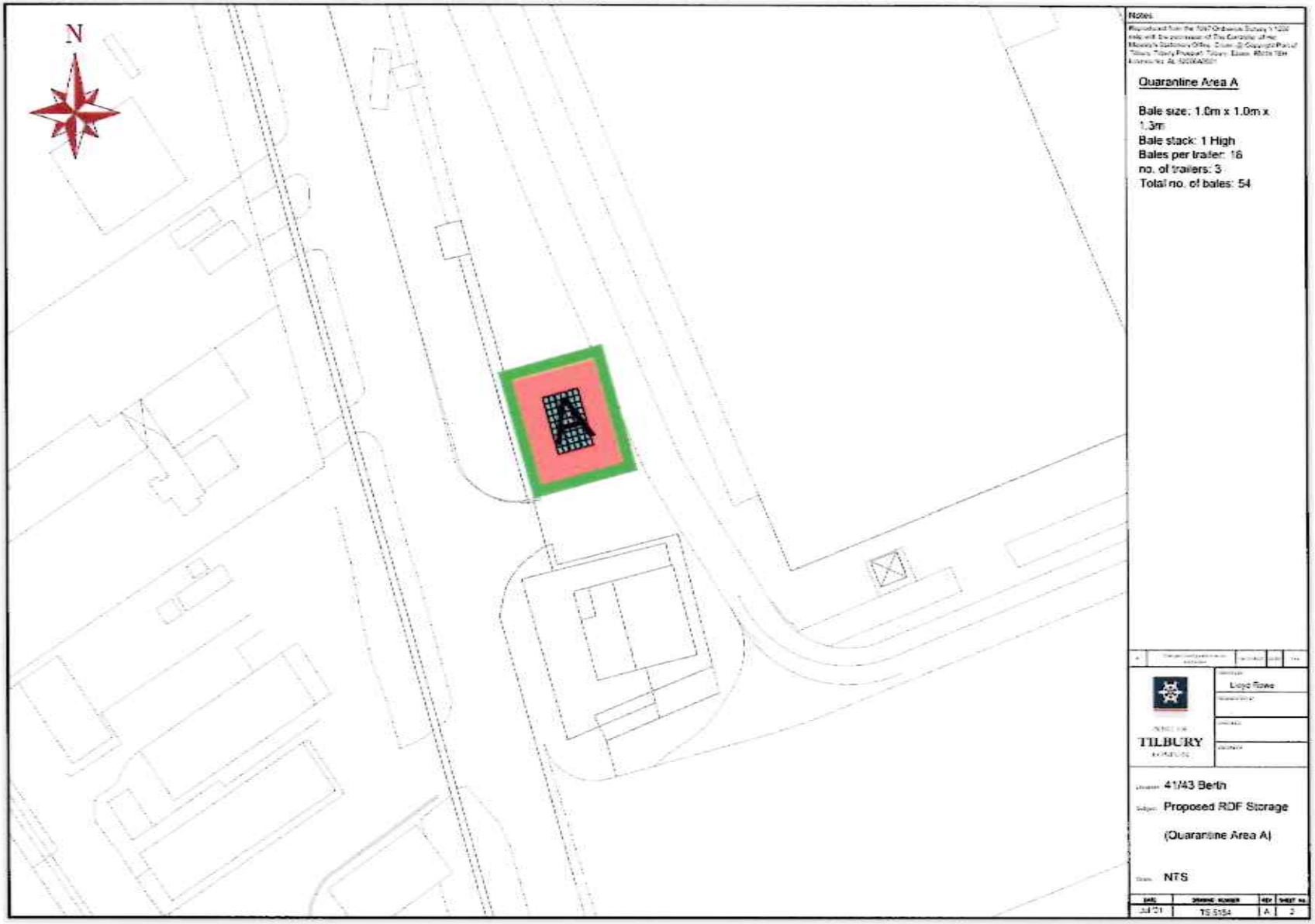


Appendix M – Hazardous Material -Storage Location Drawings



Appendix N - Quarantine Location Drawings





Notes

Quarantine Area A

Bale size: 1.0m x 1.0m x 1.3m
Bale stack: 1 High
Bales per trailer: 18
no. of trailers: 3
Total no. of bales: 54

A	Changed quarantine area location	30.07.21	LR

TILBURY

Lloyd Rowe

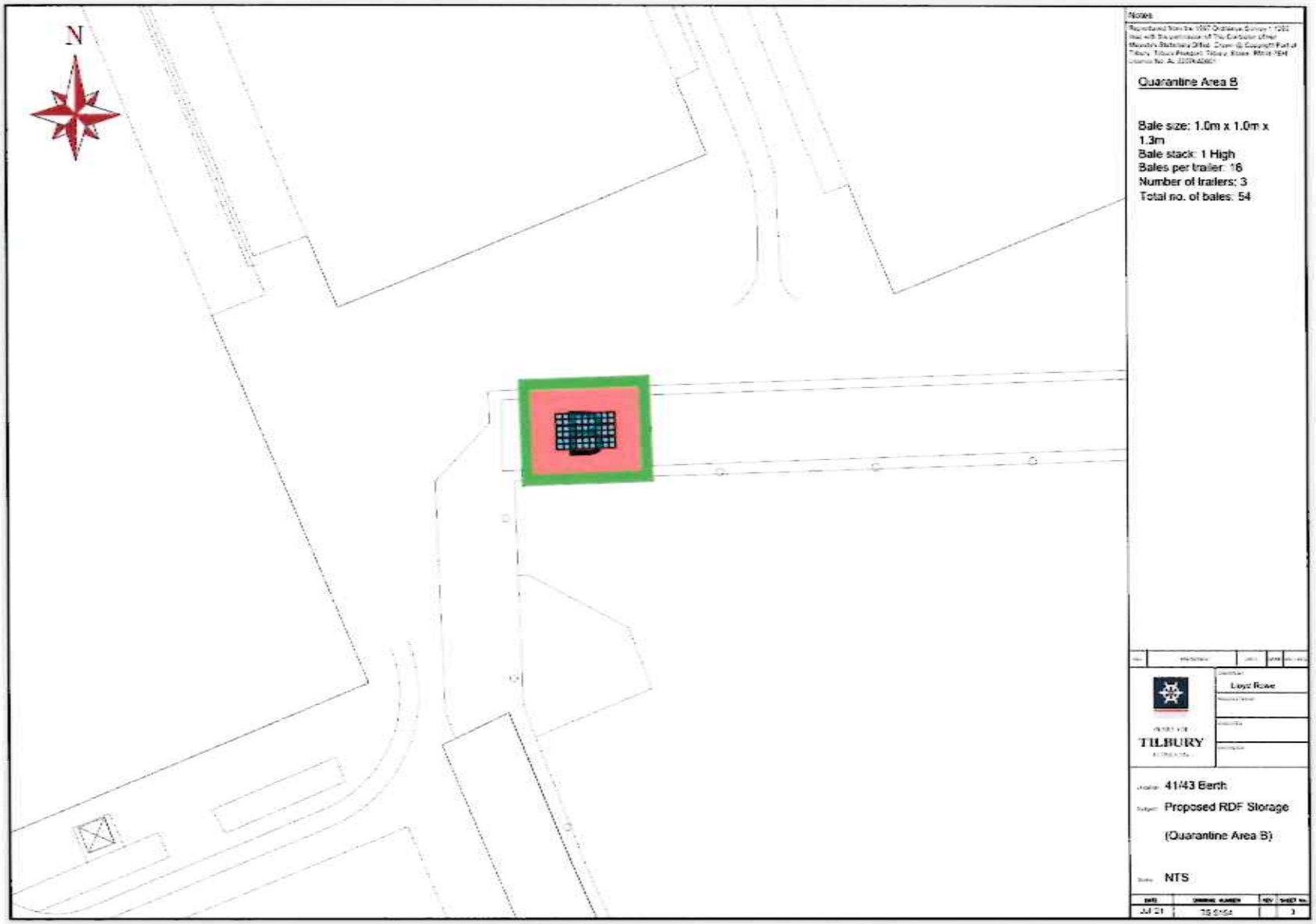
41/43 Berth

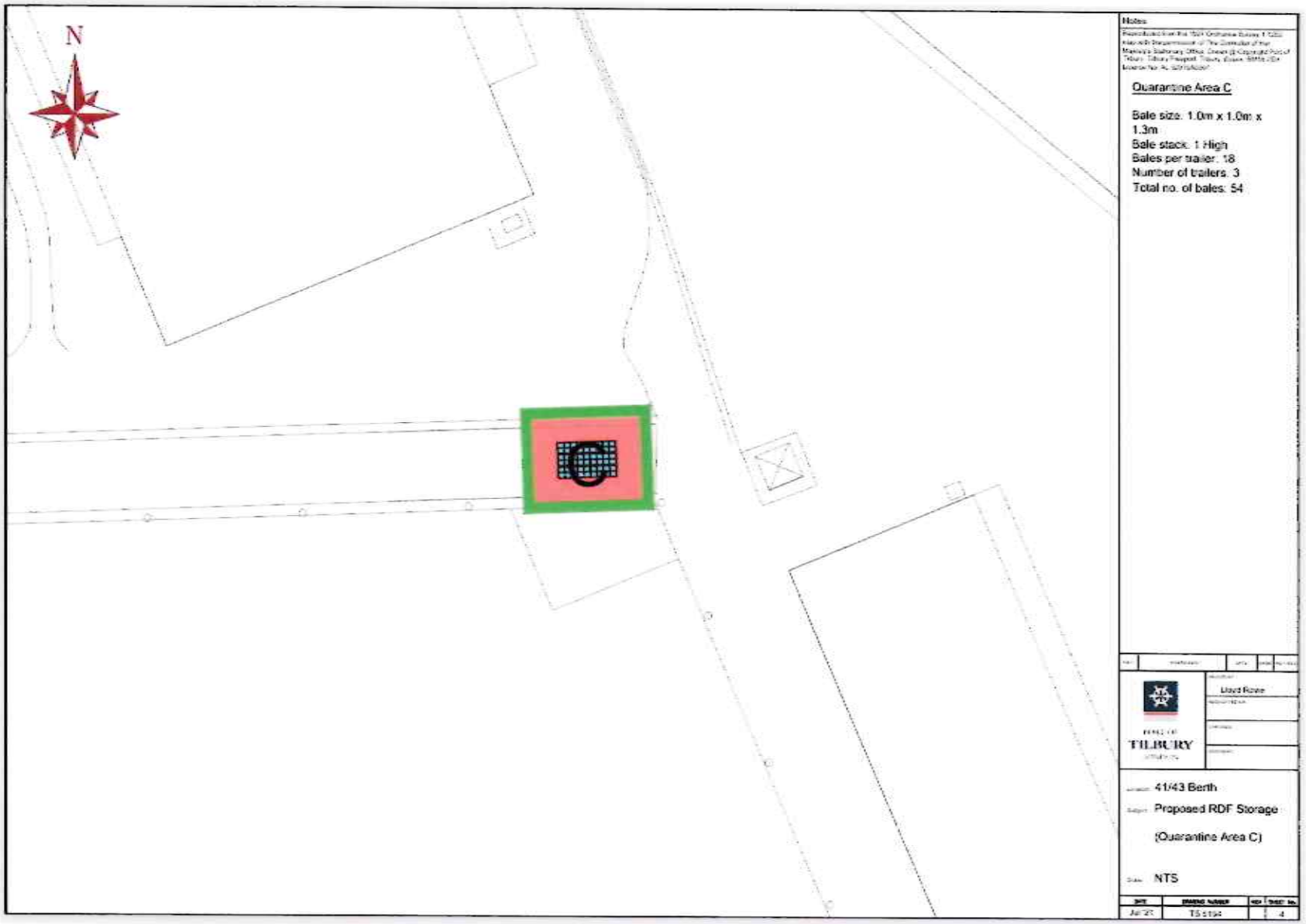
Proposed RDF Storage

(Quarantine Area A)

NTS

Date	Drawing number	Rev	Sheet no.
Jul 21	TS 5154	A	2


N
Notes
Quarantine Area B
Bale size: 1.0m x 1.0m x 1.3m
Bale stack: 1 High
Bales per trailer: 16
Number of trailers: 3
Total no. of bales: 54
Lloyd Rowe
PORT OF
TILBURY
41/43 Berth
Proposed RDF Storage
(Quarantine Area B)
NTS
Jul 21



Notes

Quarantine Area C

Bale size: 1.0m x 1.0m x 1.3m
Bale stack: 1 High
Bales per trailer: 18
Number of trailers: 3
Total no. of bales: 54

PORT OF TILBURY

41/43 Berth

Proposed RDF Storage

(Quarantine Area C)

NTS

DATE	DRAWING NUMBER	REV	SHEET No.
Jun '21	TS 5194		4


N
D
43 BERTH
Notes
Quarantine Area D
Bale size: 1.0m x 1.0m x 1.3m
Bale stack: 1 High
Bales per trailer: 18
Number of trailers: 6
Total no. of bales: 108
TILBURY
Lloyd River
41/43 Berth
Proposed RDF Storage
(Quarantine Area D)
NTS
Jul '21
TS 5154
12

Appendix O

Darcy Spillcare
Unit B7 Chaucer Business Park,
Watery Lane, Kemsing,
Sevenoaks, Kent,
TN15 6QY
T +44 (0)1732 762328
F +44 (0)1732 764700

CHEMICAL RESISTANCE OF FABRICS USED IN CONTACT WITH HYDROCARBONS

All coatings are especially attuned to suit the specific requirements of "oil spill equipment" or flexible tanks and dispose in particular of subsequent attributes:

- Superb UV stabilization
- Salt-water-resistance
- Good resistance to oil and fuel*
- High grade of adhesion
- Very good reliability against repeated flexure
- High abrasion resistance*

*depending upon the particular type of coating

This document gives you our provider test results on their fabric used in contact hydrocarbons. These fabrics are used for the manufacturing of the oil boom, open and close tanks.

1) GENERAL RESULTS

Mechanical properties of oil boom fabrics

	PVC Oil Resistant	TPU-Blend	TPU	Alcryn
Oil resistance (poor in aromatics)	+	++	+++	+++
Fuel resistance (poor in aromatics)	0	+	++	++
Abrasion	+	++	+++	+
Adhesion	+	++	+++	++
Hydrolysis resistance	+	++	+++	+++
Price (compared to oil resistant PVC)		1,5-2x	3x	3x

The a.m. statements are approximate values. Characteristics and price may vary on realisation. The resistance to oil, fuel and chemicals depends basically on their concentration in water and the environmental temperature.

Darcy Spillcare
Unit B7 Chaucer Business Park,
Watery Lane, Kemsing,
Sevenoaks, Kent,
TN15 6QY
T +44 (0)1732 767838
F +44 (0)1732 764700

SPECIFICATION FOR ALCRYN FABRIC FOR FLOOD BARRIERS

Base Fabric	Glass yarn 1360 dtex
Surfacic Mass	490 g/m²
Breaking Strength	390/240 daN/5cm EN ISO 1421/V1
Tear Strength CH(W)/TR(F)	40/25 daN DIN 53363
Extreme Temperatures of Use	- 30°C / + 100°C
Fire Resistant	MO (noncombustible) NF P 92-507
Finish	Mat

Revision Date: 31-01-2017