

Demolition of Heavy Fuel Oil Tanks

Outline Method Statement

South Tees Development Corporation

June 2020

5192474-TK-MS-001



Notice

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1. Introduction

1.1. Purpose

The purpose of this document is to present an outline method statement for the demolition of the heavy fuel oil tanks as part of the South Tees Development project. It has been written to form a guidance to the client, South Tees Development Corporation, of some of the key works and considerations anticipated as part of these works.

A Principal Contractor (PC) is to be appointed following contract award, it should be recognised that the responsibility of demolition works shall lie with them. Atkins Limited assumes no responsibility to this regard, this document serves to highlight key considerations only.

The works are to be carried out in line with all the PC's policies and procedures, including all relevant Task-Specific Safe Working Procedures.

The works are to be carried out in line with all current relevant legislation and regulations and comply with BS 6187:2011 Code of Practice for Full & Partial Demolition, including the below mentioned regulations:

- The Control of Substances Hazardous to Health Regulations 2002
- Health and Safety at Work Act 1974
- Control of Asbestos Regulations 2012
- Environmental Protection Act 1990
- As part of the works the PC will abide by the STDC site rules and receive a local induction to the site.

It is anticipated the works will be notifiable to HSE under the CDM 2015 regulations.

1.2. Site Location & Works Segregation

The tanks are located between the River Tees and the Hansons Concrete Works and are adjacent to areas of land used by Tarmac (Lafarge). Although the Oil Tank Farm is no longer in use these adjacent areas are live and are operational at all times.

The principal Contractor is responsible for ensuring the work area is suitably segregated and secured within the site boundary and that no harm will come to members of the public or any other 3rd party. The site is located in the former SSI steel works which is secured by fencing and patrolled on a regular basis. The tank farm is surrounded by a chain link fence and has vehicle and pedestrian access. This is to be maintained for the duration of the works. It must be noted the site is in a location close to Hanson & Tarmac, with associated HGV's and Concrete Mixer wagons transiting near this area. Contractor operations and segregation and control of the area shall be confined and limited to within the site fencing

Warning signs are to be displayed in pertinent positions leading up to the site and around the boundary fence of the site. The boundary of the site is anticipated to be the outer extent of the exclusion zone which will be supplemented with internal double clipped Heras style fence required to form an Active Demolition zone (ADZ) but generally as indicated in the site plan in Section 4.

The welfare unit and works parking may be located in the carpark adjacent to the former office and boiler house outside the ADZ, segregated with crowd barrier and signage.

The site gates shall be secured during working hours. The security of the site shall be monitored for evidence of trespass and break ins.

The site is to be accessed and egressed from the vehicular gate via the main STDC road network.

1.3. Utilities and Services

All service isolations shall be carried out within the site boundary at incomers or back to the main substation switchgear. Isolations are to be completed by the client's suitably qualified and trained engineers who will issue the PC with written confirmation upon completion, these records will be held on site.

Water services are to be isolated by the client at the nearest valve chamber and again written confirmation supplied.

As part of the works the local Heavy Fuel Oil (HFO) pipelines are to be decontaminated prior to any demolition works. The pipelines should be cleaned back to a suitable termination point out with the work area and the pipelines capped with written handover certification. This will be the same process with the five heavy oil tanks upon completion of the decontamination a handover certificate issued to confirm clean of product and gas free.

Any drainage outlets or interceptors to be capped by the client on completion of the works.

Isolation points will be fully identified and marked on a site drawing and clearly defined with pegs/signage on-site.

1.4. Welfare

The principle contractor is responsible for the provision of suitable welfare facilities for the duration of the works to comply with CDM 2015 requirements. The facilities may include a self-contained unit with generator, toilet, messing facilities and site office. The unit is suggested to be located as per the plan in Section 4 within a dedicated barriered area.

1.5. Asbestos

A Refurbishment & Demolition (R&D) Asbestos Survey is still to be carried out at the time of writing this document. A management survey is available this is in the process of being updated. Prior to any works commencing a full R&D survey is to be carried out by the client and issued to the Principle Contractor for full review.

All asbestos will be removed prior to commencing demolition of the structure. Asbestos identified at this stage are mastic floor tiles, electrical flash guards and gaskets (non-licensed non-notifiable works). These products will be removed in accordance with the Control of Asbestos Regulations (CAR 2012) and all current amendments. Any licensed asbestos removal will be completed by specialist sub-contractors under their task specific Asbestos Plan of Work.

Should any suspect material, in addition to the R&D Survey, be discovered during the course of the project, works are to stop immediately, and the site manager informed. The contaminated area will then be managed until a suitable asbestos management/removal plan has been implemented.

The PC site manager is to ensure all relevant clearance certificates are received for licensable works prior to demolition.

1.6. Demolition Works Scope

The following scope of works is anticipated as part of the tanks demolition;

- Erection of temporary barriers / fencing and signage to supplement the existing site boundary.
- HFO removal and decontamination of tanks and pipelines shall have been completed by others prior to demolition commencing.
- Removal of Non-Notifiable asbestos.
- Existing services location, isolation, and removal within building. Any remaining live underground services are to be identified and protected.
- Oil Decontamination (by others).
- General soft strip of boiler houses and offices followed by demolition to top of slab.
- Demolition of five HFO tanks, pipelines existing structures to top of slab.
- Crushing of demolition rubble to Class 6F2 specification and infill of voids.
- General levelling of site to existing site contours using site won material.
- Removal of all arisings off site including recycled metal.

1.7. Building Construction

The boiler house is a steel frame structure with metal clad external cladding to the roof and side walls. The main building is approximated at 31m x 12 m and 5 m high. The plant room to the north west is 8m x 15m in area. The

office & welfare area steel framed with brick infill with a concrete “bison” panel with felt coverings. The main office adjoining the boiler house is 25m x 5m and approx. 2.5m high.

The 5 HFO tanks are of steel plate construction 30 m diameter and 10 m high. They have a Man-Made Mineral Fibre MMMF insulation surrounding the outer skin and covered with light weight metal cladding. The steel pipelines connecting the Boiler house and tanks which also route to Redcar are insulated with MMMF located in soil bunds with connecting steel ladders and pathways.



1.8. Site Finishes and Hand Back to Client

All Floor slabs and hardstanding’s to be retained at this stage. The site is to be left level on completion, with any voids backfilled utilising on site crush material. The brick work to the buildings is to be crushed to a 6F2 specification and used to infill any voids or pipe channels. The soil mounds to the pipelines are to be levelled and the site left in a level condition with no trip hazards prior to handing back to the client.

Existing roads and hardstanding areas, including site pathways and fence surrounding the site are to remain in place.

No remediation or sub surface works are to be undertaken as part of this project.

2. Method Statement Details

2.1. Overall Scope of Work

The scope of works covered within this method statement consists of the above ground demolition of all structures within the demolition zone hatched in green site boundary and associated plant and equipment.

- Establish the welfare facilities
- Secure the boundary
- Soft stripping of structures
- Non-Licensable asbestos removal
- Demolition of structures and process/clear arisings
- Level site
- De-mobilise

As well as the Health & Safety Management System developed by the PC, the Construction Phase Plan, Drawings, Specification and the Project Risk Assessments collectively make up the safe systems of work for these above-mentioned tasks.

2.2. Contract Timescale

The following contract timescales are anticipated. Finalised timescales shall be determined by the PC once appointed for the works:

- Decontamination Contract timescales **16 weeks** – to be undertaken prior to demolition commencing
- Demolition Contract timescale: **6 weeks**

Working Hours generally – Monday to Saturday 7.00am to 6.00pm

Sunday working is to be by agreement with the client.

2.3. Plant & Equipment

It is anticipated that the following items of plant & equipment will be required:

- 45 & 20 tonne demolition specification excavator with various attachments (selector grab, shear, buckets)
- 5 tonne crushing bucket .
- Various RORO Skip Wagons & 40 Yard Skips
- Various hand tools
- Motofog 100 dust suppression unit.
- Bunded fuel bowsers
- Heras Fencing (2.0 metres in height)

Certification for the above plant & operative training is to be held at the work site.

(Please note that this is not an exhaustive list and that plant & equipment will be provided at a frequency to deliver the works in a safe manner and in accordance with the agreed programme of works).

2.4. Personnel

The following personnel requirements are anticipated however this will ultimately be determined by the PC and any subcontractors performing site tasks;

- 1 x Full-time Site Manager
- 1 x Visiting Contracts Manager
- 2 x Plant Operators
- 1 x Crusher operator
- 1X Topman / small plant operators
- 2 x Labourers/Banksmen

2.5. Site Security

The site is presently fully secured with a 2 m high boundary chain-link fence to deter unauthorised access. The security of the site shall be monitored by the clients Security guards in conjunction with the patrols of the wider site with programmed inspections outwith working hours to be carried out. During working hours the security of the site and the maintenance of the fence line surrounding the demolition works shall be the responsibility of the PC

2.6. Environmental Considerations

Prior to any demolition works commencing an ecological survey is to be carried out to confirm any presence of nesting birds or other sensitive wildlife. If required any nesting birds will be relocated as per regulations.

The PC is to execute the works sympathetically to the surrounding environment. During the works a watching brief is to be in place to ensure the controls in place to control dust migration are suitable.

Demolition dust will typically be controlled by applying water spray manually and remotely using a (MOTFOG 100 or similar) dust water spray cannon.

Banksmen will be positioned as required during works to ensure the controls in place are suitable. Due to the location of the site being remote and industrial land with no local residual properties this will reduce any risk imposed also with the structures being of steel construction and cold cut using excavators reducing fume or dust release. The site is surrounded by a soil bund historical to the previous site use and is in proximity south of the river Tees.

The site drainage interceptor is to be inspected, emptied and cleaned prior to commencing works. Drainage points will be managed throughout the works to capture any potential accidental spillage. Drain points are to be identified prior to commencing and will be managed as works proceed to prevent flooding. Upon completion these are to be capped as required and the drainage inspector decommissioned

Demolition arisings are to be sorted and segregated on site into designated 40-yard skips, these will be collected for onward recycling at the applicable local recycling depots in line with the companies Waste Management, Collection, Delivery and Recycling of Waste Policy. All waste vehicles leaving the site are to be covered using the vehicle automated net system as required.

Prior to demolition works commencing nearby boreholes shall be sampled and monitored to establish current background conditions within the local groundwater, or perched water within the made ground. These same boreholes shall also be monitored and sampled during the demolition works to monitor any effect the works may have on the local groundwater or perched water within the made ground.

2.7. Continual Liaison

It is imperative that the works do not impact unduly or as a nuisance to the site stakeholders. It is noted that there is a concrete plant operated by Hanson Tarmac to the south outwith the boundary of the works area.

Initial pre commencement meetings are to be carried out with all stakeholders within the direct vicinity of the site, informing them of the forthcoming works and anticipated duration; contact details will also be provided should they have any queries or concerns. Due to the traffic and vehicle interaction the traffic management plan will take this into account and communicated to Hanson Tarmac and Stakeholders

The Site Manager is to be the initial contact with any concerned parties to maintain good neighbourly relationship. Any complaints are to be communicated to the Contracts Manager as soon as practicable.

2.8. Site Inductions & Training

All persons undertaking works on site are to be suitably trained and competent to carry out their tasks. All PC or subcontractors operatives are to hold a CSCS card minimum and have undertaken both demolition activities and Asbestos Cat B training.

All plant operatives are to have relevant CPCS tickets or equivalent and have suitable experience undertaking demolition activities. All persons required to work on site will undertake a full site induction prior to commencing

any works. The site inductions will be carried out by the site manager and held within the canteen area on site. Programmed 'Toolbox Talks', 'Safety Meetings' and Briefings will be undertaken and records to ensure all person involved with the works continue their personal development.

All Site Managers are to be suitably trained and hold the relevant CCDO Supervisor/Manager Card or SSSTS/SMSTS as a minimum.

2.9. First Aid

First aid assistance is to be available from the trained first aiders on site. The PC is to confirm who these nominated individuals are and confirm they have had appropriate training.

The first aiders will be indicated on the first aid posters, which will be located around the welfare areas.

2.10. COSHH

Full set of COSHH Assessments are to be held on site by the PC / Site Managers for all materials that may be used during our works. Any new materials encountered will have a COSHH Assessment undertaken prior to commencement of use.

Burning equipment if used will consist of liquefied oxygen & propane gas, supplied in pressurised cylinders. The storage of these will be in designated security fenced areas or purpose designed security cages away from welfare and office facilities.

Fuel oil for plant will be stored in double bunded tanks, their location will take into account features such as drain systems. This will ensure in the event of catastrophic failure released liquids will be contained locally. Spill kits will be maintained in close proximity to fuel storage and refuelling areas. COSHH assessments are regularly checked to ensure they are relevant to the operations being carried out. This takes place at least once a year on release of the new EH40 standards (reassessed by HSE) or when operating circumstances change.

2.11. PPE

The following site minimum PPE & RPE Requirements are recommended, however specific requirements are to be set out within the relevant method statements appropriate to each task.

- Cut resistant gloves
- Overalls
- Safety boots
- Light eye protection (LEP)
- Safety helmet
- Hi-vis vest/jacket or overalls.
- P3 filtered half masks

3. Method Statement

The following method of works and tasks, numbered below, are anticipated with notes applicable to each listed in bullet points.

3.1. Site set up, mobilisation of plant and equipment

- Take delivery of Heras Fencing at site.
- Take delivery of telehandler and skid steer loader
- Take delivery of Self-Contained Welfare Cabin.
- Take delivery of 22T & 45T Excavator with attachments at site.
- Plant delivery;
 - All plant & equipment is to be delivered to site utilising low loaders.
 - All plant & equipment off loaded on level firm ground.
 - All deliveries will access site via Shepherd Road.
 - When offloading, a banksman wearing hi-viz will be present at all times and will direct any traffic as required (in accordance with SWP 9).
- Operatives to Erect Heras Fencing along site compound (office/boiler house area) of site as per site plan (in accordance with SWP 35). A separately defined
- Welfare cabin delivered by HIAB and positioned on a level surface within site compound.
- Refer to Site Layout drawing further on within the Method Statement showing indicative traffic routes and positioning of site compound.

3.2. Removal of Asbestos-Containing-Materials

(Non-Licensable only – Licensed Material to be removed by specialist subcontractor prior to demolition works mobilising)

At the time of writing, the full R&D asbestos survey had not been issued.

- All asbestos removal activities to be carried out in strict accordance with CAR 2012 and HSE Asbestos Essentials Task Sheets.
- Due to the nature of the asbestos removal identified within the Asbestos Survey, all shall be removed as classed as Non-Licensed Non-Notifiable Works. Refer closely to R&D survey and utilise as a checklist once sections of removals are complete.
- All operatives carrying out works will require to be trained to Cat B Non-Licensed Asbestos Removal Standard, have an approved Asbestos Medical and be correctly face-fitted for a Sundstrom Half Mask Respirator (in accordance with Asbestos Essentials EM2).
- An Asbestos Waste Skip is to be suitably lined in 1000g polythene and located nearby the asbestos removal activity to minimise transit of materials. Disposal of material will be to an asbestos landfill cell nearby transported under a Section 62 Hazardous Waste Consignment (in accordance with Asbestos Essentials EM9).

Non-Licensed Asbestos Removal Activities- Floor Tiles

- Control access to the building to essential personnel only.
- Place warning signs at the entry and exit points.
- Identify and area of floor tiles to be removed.
- Use “Big Mutt” floor scrapers or shovel to remove the tiles. RPE and PPE worn by operatives as per SWP.
- Using hand held spray to dampen the area down as floor tiles removed.
- Tiles to be shovelled up and placed in asbestos bags or direct into skip.
- Tiles to be loaded into skip as required.

3.3. Soft stripping works to buildings (office & boiler house)

- Using shovels and nail bars operatives to lift all the carpet tiles to the floors and place in a central area so that the skid steer can transport to the relevant skip.

- Operatives using hand tools nail bar's, mattocks and hammers remove timber. Plastic trucking and partition walls. All waste is to be removed either through window /door openings to allow the excavator with grab attachment to clear away and place in skips.

3.4. Mechanical demolition of all buildings & structures within project the site boundary

The structures are low level steel framed with concrete roofs, a 40 tonne excavator or as determined by the PC / Subcontractor, with a grab attachment will commence from the car park area of Block "E" and progressively work east.

Office/boiler area



The 40-tonne excavator with grab and shear will commence from north end of the structures and remove brick infill from the building to expose the steel frame, the steel frame will then be sheared to grade working bay by bay to allow the concrete roof to fall into the footprint of the building. The secondary excavator will follow on removing steel work and large lumps of concrete ready for processing for recycling. The same process will be carried working through the structure bay by Bay. The smaller buildings to the South will be demolished using the same process until down to ground level. All floor slabs to remain place. All steel work cut to size and placed in waiting skips.

Tank demolition



Working from level ground the 45-tonne excavator with grab attachment will progressively remove the metal cladding and MMMF insulation working top down to the perimeter of the tank. All material will be placed in waiting skips to minimise any windblown debris. Upon completion the excavator with shear attachment will start from the top and cut through the top ring then shear down the vertical. The cut line will be completed to approx. 1.5mmeter from the base. The same process will be carried out on the opposite side to form and opening. The excavator will push the cut panel and fold into the footprint of the tank. The bottom circumference will remain in place at this stage to maintain integrity of the tank and prevent the floor from lifting and weakening the side walls. Following this the tank wall cut will be removed to allow access into the tank for the excavator. The excavator will then enter the tank and progressively shear the roof lattice frame to grade. The roof sections cleared away to allow the side walls to be cut down. the second 20 tonne excavator with grab attachment will be positioned in the tank and hold the top of the steel wall while the cut line is completed vertically, the excavator will then progressively fold the steel plate into the tank. The same process will be carried out for the circumference of the tank until demolished. All steel work removed to expose the steel floor plate.

Steel Floor and pipelines

The excavator is to be positioned on top of the remaining steel floor plate and progressively cut the floor into strips approx. 4 m wide working from one side to the other. As the cuts are completed the excavator will “roll” fold the plate into sections to allow them stockpiled into manageable sections for the secondary machine to load into transport and removed off site.

The pipe lines will be stripped of the cladding using a grab attachment and the waste removed to skips following this they will be cut into 4 m sections and removed. The same process will be completed for all pipelines until cleared.

All rubble and brick work associated with pipelines and buildings are to be stockpiled locally and this will be crushed into a 6F2 product using an excavator mounted crushing bucket or processing plant. This material will be used to infill any voids across site.

The surrounding soil within the bunded area will then be graded level using the excavator and bucket to remove any trip hazards and leave a safe level area. The Chain link fence and Gate access will remain in place and made secure to hand back to the client.

- All demolition activities to be carried out in accordance with BS 6187:2011 Code of Practice for Full & Partial Demolition.
- The methodology and sequence of demolition is determined by the site manager to ensure a safe and controlled process and avoidance of any uncontrolled collapse of any structure.
- A suitable exclusion zone (ADZ) to be barriered off prior to any mechanical demolition commencing and all operatives briefed on activities.
- All machine operatives in direct contact with a banksman (in accordance with SWP 9) and site manager at all times through two-way radio communication.
- Others safe working procedures to be complied with are SWP 2, 8, 10, 11, 21.
- At the end of each shift trim off loose structure back to a strong point.
- Demolition will be carried out top-down and on a bay-by-bay basis and materials stockpiled in waste streams away from the workface as works progress.
- Once building has been demolished waste will then be extracted and loaded into designated 40Yd recycling bins.

3.5. Segregation of arising materials on ground and removal off-site of waste

- Waste will be segregated at the demolition workface and loaded directly into 40Yd recycling bins.
- Skip and waste movements will be booked in advance and controlled under Albatross’s Duty of Care Waste Transfer Notes, stating producer/registered haulier/registered recycling facility.
- Any wagons entering/leaving the site will be controlled by a banksman.

3.6. Grubbing up foundations and crushing.

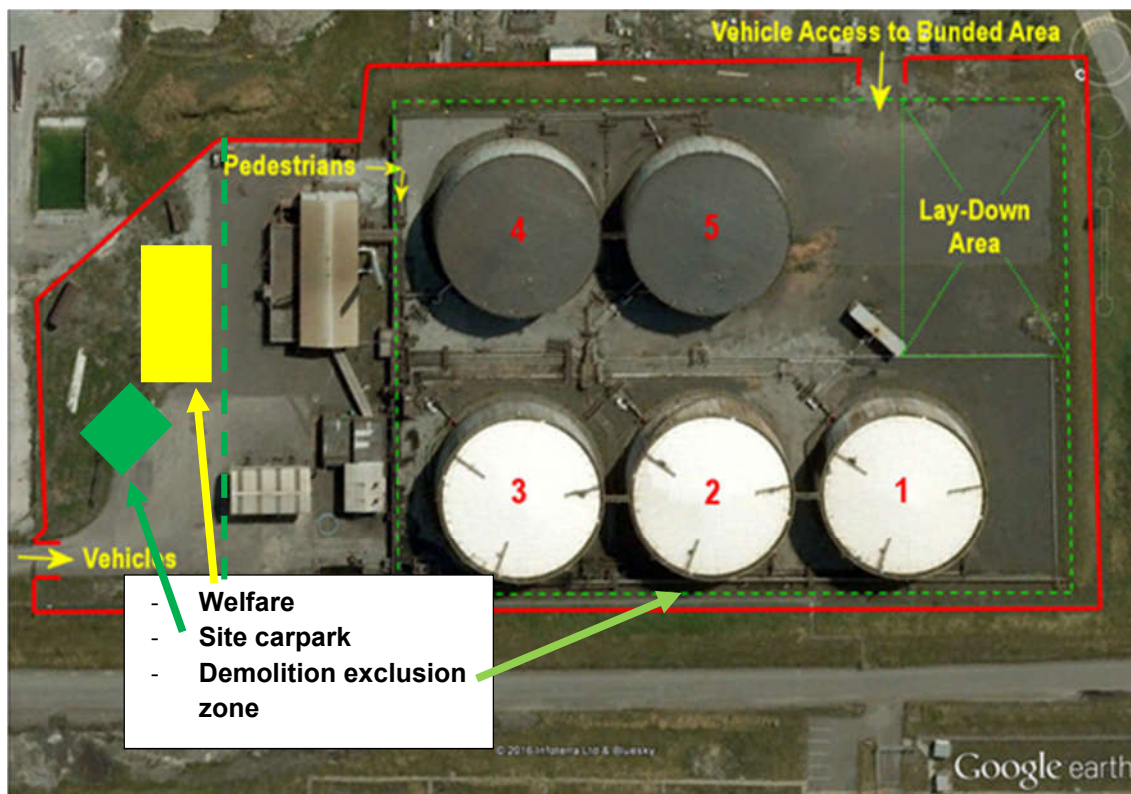
- Floor slab and foundations are to remain at this stage.
- All concrete will be processed to remove steel reinforcing bars ready for crushing.
- Material will be stockpiled in a windrow ready for crushing.
- Back fill open trenches/pipe tracks with site won material.
- Do not leave any open excavations overnight, always backfill or fence off with double clipped Heras style fence.
- Grade off footprint of building by utilising crush to taper off slab edges.
- All brick and concrete will be crushed to a 6F2 Specification and stockpiled on site in the designated area. The crusher will be positioned on firm level ground as required as per the safe working procedure.
- Water supply connected to the crusher and dust suppression used as required as crushing is carried out.

3.7. Site finishes & demobilise

- All unsafe edges, voids, trip hazards are to be infilled with site won material to leave site in a safe condition.
- Plant and equipment is to be demobilised in a reverse sequence to Section 3.1.

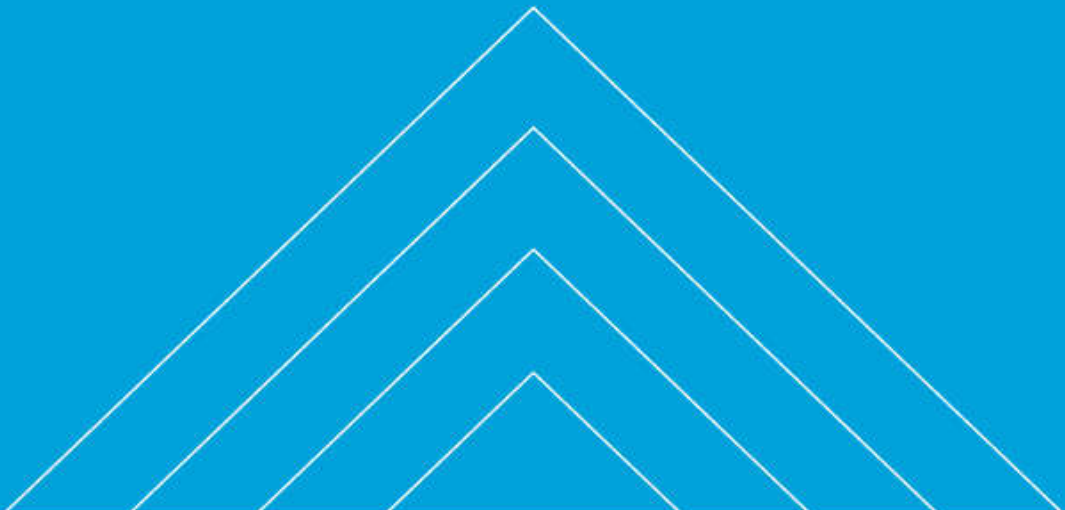
4. Site Location and Exclusion Zone Plan

The following marked up Aerial imagery showing potential site layout is for guidance only. The establishment of the site layout and facilities required to undertake the works shall be determined by the PC.



The main entrance to the site is via the site road system and all accesses by the main security gate. All operatives & visitors are required to sign in and out of site and shall be subject to a Albatross site induction. All vehicle movements to be strictly controlled by a banksman.

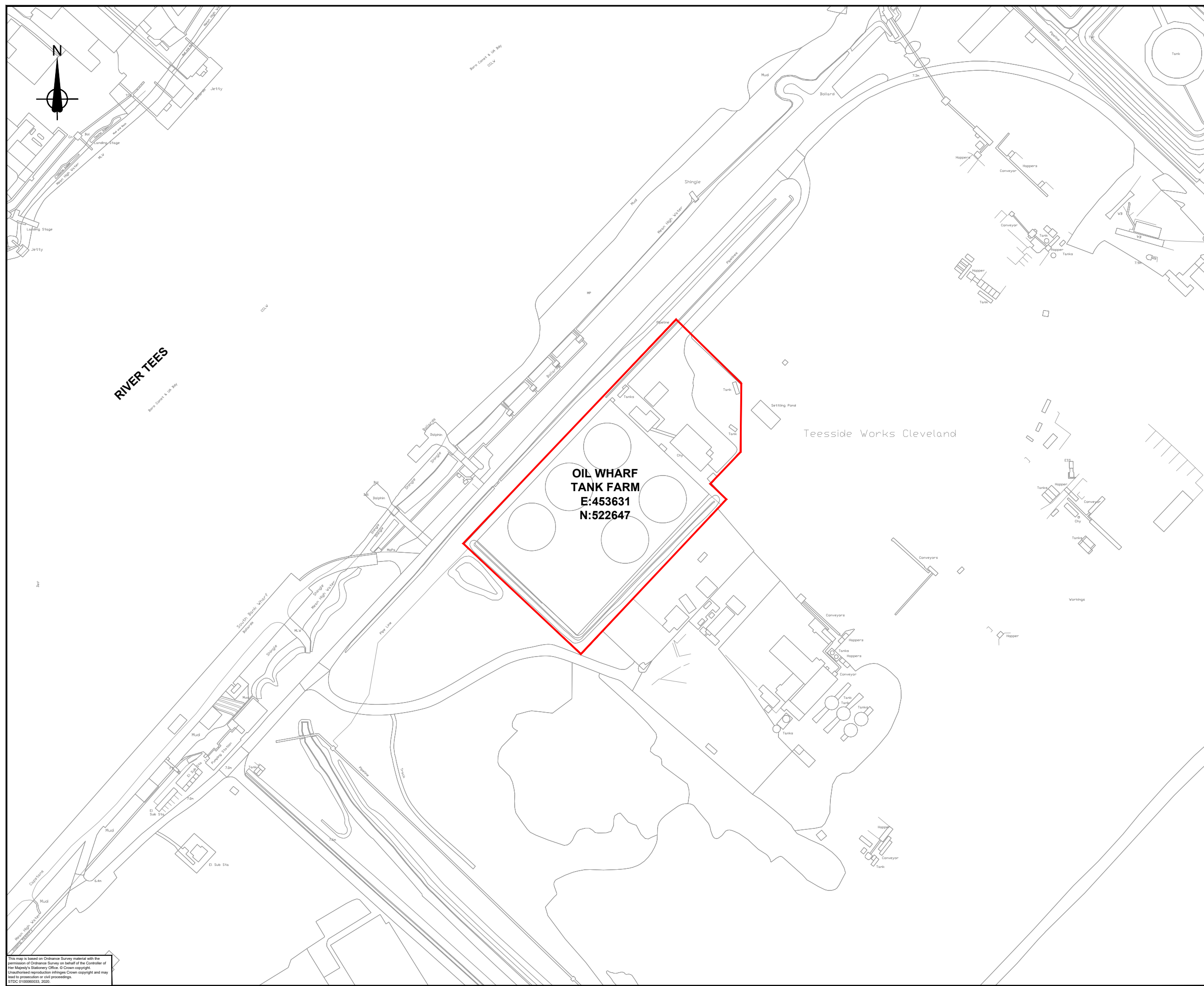
Appendices



Appendix A. HFO Tank Farm Red Line Boundary Plan

DO NOT SCALE

Millimetres
0 10 100



NOTES
1. Do not scale from this drawing

KEY
Red line boundary

Rev.	Date	Description	By	Chk'd	App'd

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**FORMER STEELWORKS
SOUTH TEES**

Drawing Name:
**Oil Wharf
Heavy Fuel Oil Tank Farm
Red Line Boundary Plan**

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