

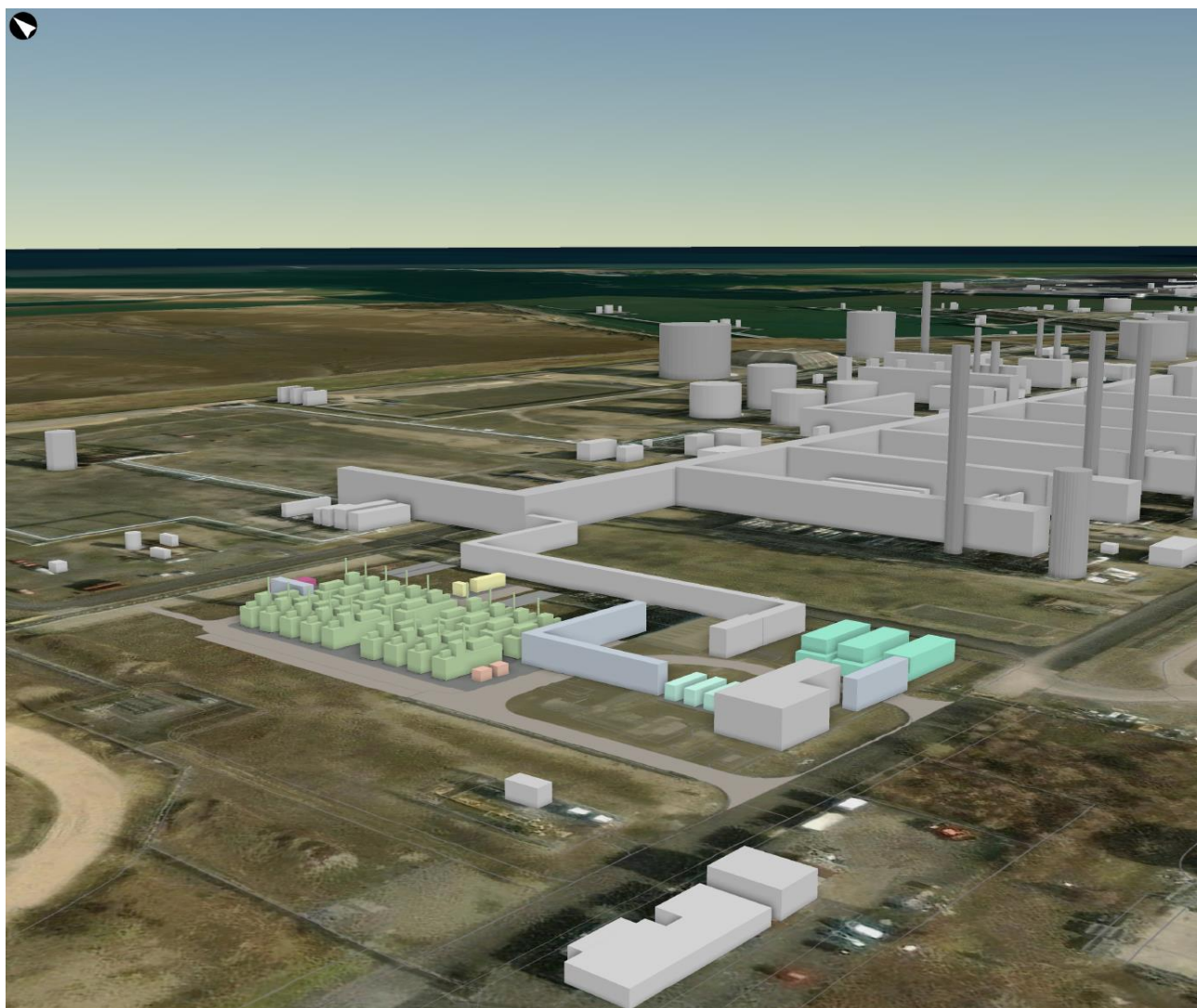
ConocoPhillips (UK) Teesside Operator Limited

Teesside Crude Oil Stabilisation Terminal Environmental Permit Variation

Appendix B: Site Condition Report

Reference: E2P-ARU-ZZ-ZZ-RP-YE-0020

P03 | 16th June 2025



This report takes into account the particular instructions and requirements of our client. It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.

Job number 297973

Ove Arup & Partners Limited
12 Wellington Place
Leeds
LS1 4AP
United Kingdom
arup.com

Document Verification

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P01	20/01/2025	Description	Draft issue for client comment		
			Prepared by	Checked by	Approved by
		Name	Izzy Mills	Helen Watson	Richard Lowe
		Signature			
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		Name	Izzy Mills	Helen Watson	Richard Lowe
		Signature			
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		Description			
			Prepared by	Checked by	Approved by
		Name	Izzy Mills	Helen Watson	Richard Lowe
		Signature			

Issue Document Verification with Document



List of Abbreviations

bgl	Below Ground Level
BGS	British Geological Survey
BTEX	Benzene, toluene, ethylbenzene, xylene
CCGT	Combined Cycle Gas Turbine
CHP	Combined Heat and Power
DLN	Dry Low-NOx
EA	Environment Agency
E2P	Ethane to Power
WFD	Water Framework Directive

1.0 SITE DETAILS	
Name of the applicant	ConocoPhillips (UK) Teesside Operator Limited ('ConocoPhillips').
Activity address	The site address is: Teesside Crude Oil Stabilisation Terminal Seal Sands, Middlesbrough, TS2 1UH The site coordinates are: 54°36'59" N 001°11'03" W https://maps.app.goo.gl/rAYuXB7vVDwx4yTA9
National grid reference	NZ 526 249

Document reference and dates for Site Condition Report at permit application and surrender	E2P-ARU-ZZ-ZZ-RP-YE-0020 Site Condition Report – February 2025.
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Document references for site plans (including location and boundaries)	• Site Location Drawing (Figure 1, Appendix A of the Main Supporting Document of the Environmental Permit Variation (document reference number: E2P-ARU-ZZ-ZZ-RP-YE-0019) • Site Installation Boundary (Figure 2, Appendix A of the Main Supporting Document of the Environmental Permit Variation (document reference number: E2P-ARU-ZZ-ZZ-RP-YE-0019) • E2P Plant Location within the Installation Boundary (Figure 3, Appendix A of the Main Supporting Document of the Environmental Permit Variation (document reference number: E2P-ARU-ZZ-ZZ-RP-YE-0019) • E2P Power Island Indicative Layout (Figure 4, Appendix A of the Main Supporting Document of the Environmental Permit Variation (document reference number: E2P-ARU-ZZ-ZZ-RP-YE-0019)
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2.0 CONDITION OF THE LAND AT PERMIT ISSUE	
Environmental setting including: • geology • hydrogeology • surface waters	The E2P Power Island (the also referred to as the 'Site') will be located on approximately 11.5 hectares of land that is within the existing permit boundary of the Teesside Crude Oil Stabilisation Terminal Installation (hereby referred to as the Teesside Terminal). This land was previously occupied by the RWE Generation UK PLC's Seal Sands Power Station, which was operated under a separate Environmental Permit, granted on 06/03/2007 (EPR/RP3130LN before being transferred to EPR/CP3939QN)¹. This permit was fully surrendered on 20/03/2024 and was deemed to be a low risk surrender by the Environment Agency (EA). The accompanying Surrender Site Condition Report can be found in Annex 1. The EA were satisfied that the necessary measures were taken during the operation of the facility to avoid a pollution risk resulting from the operation of the regulated facility, as stated in the Surrender Decision Document². This permit variation is seeking to incorporate the

¹ Environment Agency (2007) Notice of variation and consolidation with introductory note - RWE Generation UK PLC (permit number EPR/CP3939QN). [Online]. Available at: https://assets.publishing.service.gov.uk/media/5eb3ff5286650c278fc64b4d/Variation_Notice_CP3939QN-V002.pdf (Accessed 07/01/2025)

	land for E2P Power Island into the permit for the Teesside Crude Oil Stabilisation Terminal. A Geo-Environmental Desk Study (Annex 2) has been produced for the E2P Power Island, which includes a review of site history and geological reports for the Site. The Desk Study indicates that the earliest available mapping dating from 1855 shows the Site and surrounding area comprised tidal mudflats of the River Tees estuary, with subsidiary channels 500 to 750m to the north, west and south of the site. The land beneath the Teesside Terminal and the Site was progressively reclaimed from the River Tees estuary during the latter part of the twentieth century, however this period is poorly represented by historical maps. Following reclamation, the Site is shown to be within the boundaries of an oil refinery by 1981, and the Site itself is indicated to have been developed by 1992, with subsequent developments in the late 1990's. Between 1998 and 2023, the Site was then developed as a combined cycle gas turbine (CCGT) plant. The site was upgraded in 2005 to provide combined heat and power (CHP) capability, and again in 2006 to fit dry low NO_x burners (DLN) and enable acceptance of off-gas from ConocoPhillips. In 2023 the site was demolished and the permit surrendered (See Annex 1 for the Surrender Site Condition Report). Geology The Geo-Environmental Desk Study (Annex 2) includes a review of British Geological Survey (BGS) GeoIndex³ and previous Ground Investigations completed for the Site and Teesside Terminal. This review identified the following Ground Conditions: • Made Ground: proven to range between c. 4.5 and 5m thick and near surface materials generally comprises grey to brown gravelly sands and sandy gravels with slag gravel and occasional concrete and glass. Underlying made ground generally comprises medium dense grey to brown sands overlying a layer of soft to firm dark grey silt, anticipated to have been deposited as part of the land reclamation on Seal Sands during the 1950s. • Superficial deposits: anticipated at approximately 4 to 5m below ground level (bgl) and are anticipated to comprise a sequence of soft to firm clayey silts, underlain by estuarine deposits of interbedded sands, silts and clays. Glacial deposits are anticipated at approximately 30m bgl to comprise firm to stiff sandy clay with occasional cobbles. The full thickness of superficial deposits has not been proven on, or adjacent to the site. • Bedrock: no exploratory holes on or within 100m of the site encountered bedrock, indicating bedrock to be present at greater than 30 to 35m across the site. The geological mapping from BGS indicates bedrock to comprise Mercia Mudstone Formation underlain by Sherwood Sandstone Formation. A detailed review of the ground conditions can be found in The Geo-Environmental Desk Study (Annex 2).
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³ British Geological Survey GeoIndex (onshore). Available at: <https://www.bgs.ac.uk/map-viewers/geoindex-onshore/>

	Hydrogeology The Geo-Environmental Desk Study (Annex 2) confirmed that in previous ground investigations across the Site, groundwater was encountered typically between depths of 2 and 3m bgl. within the reworked estuary materials. It is anticipated that shallow groundwater is in continuity with the underlying groundwater within natural deposits. The Geo-Environmental Desk Study (Annex 2) confirmed that the underlying superficial deposits are designated as a Secondary A (Undifferentiated) Aquifer, which is defined by the BGS³ as “<i>where it is not possible to apply either a Secondary A or B definition because of the variable characteristics of the rock type. These have only a minor value</i>”. Glacial deposits at depth are anticipated to be relatively low permeability. The Mercia Mudstone Group is designated as a Secondary B Aquifer, which is defined by BGS³ as “<i>predominantly lower permeability strata which may in part have the ability to store and yield limited amount of groundwater by virtue of localised features such as fissures, thin permeable horizons and weathering</i>”. The Site is not on or within 2km of a source protection zone or nitrate vulnerable zone. The Site is located within Flood Zone 1 with surrounding areas located within Flood Zone 2 and 3. Surface water / hydrology The Site is located in the Tees Lower and Estuary Operational Catchment⁴. The statutory Main Rivers within in 1km of the Installation Site boundary include the River Tees⁵ (directly adjacent to northeastern boundary) and Greatham Creek (approximately 500 m northwest). The Teesside Terminal is approximately 1 km from the mouth of a Water Framework Directive (WFD) coastal waterbody named Tees Coastal. The EA Flood Maps for Planning show that the majority of the Teesside Terminal, and E2P Power Island, are within a Flood Zone 1. This is defined as land having a less than 1 in 1,000 annual probability of river or sea flooding (<0.1%) – very low. The northern section of the Teesside Terminal, which includes the jetties within the River Tees, is within a Flood Zone 3, which is defined as land having a 1 in 100 or greater annual probability of river flooding (>1%), or a 1 in 200 or greater annual probability of flooding from the sea (>0.5%) in any year.
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⁴ Environment Agency (2023). Catchment Data Explorer - Tees Lower and Estuary Operational Catchment. [Online]. Available at: <https://environment.data.gov.uk/catchment-planning/OperationalCatchment/3445> (Accessed 27/11/2024)

⁵ Environment Agency (2023). Catchment Data Explorer - River Tees. [Online]. Available at: <https://environment.data.gov.uk/catchment-planning/WaterBody/GB510302509900> (Accessed 27/11/2024)

Pollution history including: • pollution incidents that may have affected land • historical land-uses and associated contaminants • any visual/olfactory evidence of existing contamination • evidence of damage to pollution prevention measures	The Geo-Environmental Desk Study (Annex 2) confirmed that there were no recorded pollution incidents on the Site. Five incidents located within 500m of the site were identified and summarised below:																													
	<table><tr><th>Location</th><th>Year</th><th>Description</th></tr><tr><td colspan="3">Discharge of substances on List I of the European Directive E 2006/11/EC of Dangerous Substances</td></tr><tr><td>350 south east of Site</td><td>Not specified</td><td>Discharge of Mercury to the River Tees by Dow Chemical Ltd.</td></tr><tr><td colspan="3">Discharge of substances on List II of the European Directive E 2006/11/EC of Dangerous Substances</td></tr><tr><td>75m east of Site</td><td>Not specified</td><td>Discharge of BTEX to the River Tees by Shanks Chemical Services Ltd.</td></tr><tr><td>300m south of Site</td><td>Not specified</td><td>Discharge of cyanide to the River Tees by Fine Organics</td></tr><tr><td>350m south of Site</td><td>Not specified</td><td>Discharge of cyanide to the North Sea by Seal Sands Chelates and Fine Chemicals.</td></tr><tr><td colspan="3">Pollution Incidents</td></tr><tr><td>230m southeast of Site</td><td>2003</td><td>Atmospheric pollution (category 3 minor impact)</td></tr></table>			Location	Year	Description	Discharge of substances on List I of the European Directive E 2006/11/EC of Dangerous Substances			350 south east of Site	Not specified	Discharge of Mercury to the River Tees by Dow Chemical Ltd.	Discharge of substances on List II of the European Directive E 2006/11/EC of Dangerous Substances			75m east of Site	Not specified	Discharge of BTEX to the River Tees by Shanks Chemical Services Ltd.	300m south of Site	Not specified	Discharge of cyanide to the River Tees by Fine Organics	350m south of Site	Not specified	Discharge of cyanide to the North Sea by Seal Sands Chelates and Fine Chemicals.	Pollution Incidents			230m southeast of Site	2003	Atmospheric pollution (category 3 minor impact)
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	230m southeast of Site	2003	Atmospheric pollution (category 3 minor impact)																											
	Based upon the findings of the Geo-Environmental Desk Study (Annex 2) a number of potentially contaminative land uses have been identified on and adjacent to the Site, including: • Land reclamation during the mid 20th century • Unknown developments on and adjacent to the site pre-1996; • Steam Generation plant from 1996 to 2022, with associated demolition in 2023; • Construction and operation of ConocoPhillips Oil Terminal immediately adjacent to the site, including stabiliser trains for the removal of impurities and stabilising of crude oil.																													
Based on the previous permitted activities under EPR/CP3939QN, the potential sources of contamination may include: • Oily water storage sump located in the west of the site; • Fuel oil stored in several bulk tanks; • Boiler and cooling water conditioning chemicals stored in several bulk tanks • Lubrication/ transformer oil.																														
Table 5-1 of The Geo-Environmental Desk Study (Annex 2) provides a summary of the potentially hazardous materials used on or adjacent to the site.																														
A review of the EA database of historical landfills⁶ shows there are two historic landfill sites within 500 m of the Site, one is located directly adjacent to the southern boundary of the Installation and the other is located approximately 110m to the northeast. Details of the site are provided in Table 1.																														

⁶ Environment Agency (2024) *Historic Landfill Sites*. [Online]. Available at: <https://www.data.gov.uk/dataset/17edf94f-6de3-4034-b66b-004ebd0dd010/historic-landfill-sites> (Accessed 10/12/2024).

	Table 1: Identified landfill sites within 500 m of the Site boundary		
	Landfill site name and address	Waste type and details	Approximate distance from site (m)
	Seal Sands	Historic landfill dataset reference: EAHLD05488 Licence issued: 13/01/1978 Licence surrendered: 01/11/1989 Waste type: inert waste Licence holder: Tees and Hartlepool Port Authority	110
	Seal Sands	Historic landfill dataset reference: EAHLD05489 Licence issued: 01/04/1977 Licence surrendered: Unknown Waste type: Commercial waste Licence holder: Imperial Chemical Industries Limited	Immediately adjacent (south)
	Section 5.5 of the Geo-Environmental Desk Study (Annex 2) includes a preliminary contamination risk assessment completed in accordance with the guidance in CIRIA Report C552 ⁷ . Based on the findings of the Desk Study, it is considered that there is a low likelihood of widespread significant contamination being present on the site. Although limited previous testing on site did not identify the presence of significantly elevated contaminants, there remains a residual risk of unrecorded contamination locally associated with spills from former industrial uses on and adjacent to the site.		
Evidence of historic contamination, for example, historical site investigation, assessment, remediation and verification reports (where available)	The Geo-Environmental Desk Study (Annex 2) concluded that the results of the ground investigation indicate no significant contaminant concentrations have been identified, and that the levels on contamination shown are indicative of general background conditions. The Seal Sands Power Station Permit Surrender Site Condition Report (Annex 1) states that, on the basis of the 2020 ground investigation results, the site has not deteriorated since the permit was commissioned and that the site is in a satisfactory state.		
Baseline soil and groundwater reference data	Ground investigation has been undertaken for the Site which indicate the Site to be suitable for the intended end use, with low risk from land contamination. No remediation is considered to be necessary as part of the E2P Power Island's construction.		

⁷ CIRIA, 2001, Contaminated land risk assessment. A guide to good practice (C552). Available at: https://www.ciria.org/CIRIA/CIRIA/Item_Detail.aspx?iProductCode=C552&Category=BOOK

Supporting information	See Annex 1 for the Seal Sands Power Station Permit Surrender Site Condition Report. See Annex 2 of this report for the Geo-Environmental Desk Study which contains the relevant soil and groundwater reference data, including the locations of the boreholes.
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3.0 PERMITTED ACTIVITIES	
Permitted activities	There are number of activities carried out at the Installation which fall under Schedule 1 of the EP Regulations, this variation application will vary the existing the Section 1.1 Part A(1) (a) combustion activity and the existing Section 1.2 Part A(1) (e) activity of handling or treating crude oil and stabilised crude petroleum.
Non-permitted activities undertaken	All areas other than the gas engines units including maintenance and waste storage areas and surface water and foul water drainage.
Document references for: - plan showing activity layout; and - environmental risk assessment.	- Site Location Drawing (Figure 1, Appendix A of the Main Supporting Document of the Environmental Permit Variation (document reference number: E2P-ARU-ZZ-ZZ-RP-YE-0019)) - Site Installation Boundary (Figure 2, Appendix A of the Main Supporting Document of the Environmental Permit Variation (document reference number: E2P-ARU-ZZ-ZZ-RP-YE-0019)) - E2P Plant Location within the Installation Boundary (Figure 3, Appendix A of the Main Supporting Document of the Environmental Permit Variation (document reference number: E2P-ARU-ZZ-ZZ-RP-YE-0019)) - E2P Power Island Indicative Layout (Figure 4, Appendix A of the Main Supporting Document of the Environmental Permit Variation (document reference number: E2P-ARU-ZZ-ZZ-RP-YE-0019)) - Environmental Risk Assessment (Section 7 and Appendix H of the Main Supporting Document of the Environmental Permit Variation (document reference number: E2P-ARU-ZZ-ZZ-RP-YE-0023)). - Annex 3 Site Condition Report (document reference number: E2P-ARU-ZZ-ZZ-RP-YE-0020) Stage 1-3 Baseline Report.

4.0 CHANGES TO THE ACTIVITY	
Have there been any changes to the activity boundary?	Not applicable
Have there been any changes to the permitted activities?	Not applicable
Have any 'dangerous substances' not identified in the Application Site Condition Report been used or produced as a result of the permitted activities?	Not applicable
Checklist of supporting information	• Plan showing any changes to the boundary (where relevant) • Description of the changes to the permitted activities (where relevant) • List of 'dangerous substances' used/produced by the permitted activities that were not identified in the Application Site Condition Report (where relevant)

5.0 MEASURES TAKEN TO PROTECT LAND	
Not applicable	
Checklist of supporting information	• Inspection records and summary of findings of inspections for all pollution prevention measures • Records of maintenance, repair and replacement of pollution prevention measures

6.0 POLLUTION INCIDENTS THAT MAY HAVE HAD AN IMPACT ON LAND, AND THEIR REMEDIATION	
Not applicable	
Checklist of supporting information	• Records of pollution incidents that may have impacted on land • Records of their investigation and remediation

7.0 SOIL GAS AND WATER QUALITY MONITORING (WHERE UNDERTAKEN)

Checklist of supporting information	• Description of soil gas and/or water monitoring undertaken • Monitoring results (including graphs)
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8.0 DECOMMISSIONING AND REMOVAL OF POLLUTION RISK

Not applicable

Checklist of supporting information	• Site closure plan • List of potential sources of pollution risk • Investigation and remediation reports (where relevant)
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9.0 REFERENCE DATA AND REMEDIATION (WHERE RELEVANT)

Not applicable

Checklist of supporting information	• Land and/or groundwater data collected at application (if collected) • Land and/or groundwater data collected at surrender (where needed) • Assessment of satisfactory state • Remediation and verification reports (where undertaken)
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10.0 STATEMENT OF SITE CONDITION

Not applicable

Annex 1
Surrender Site Condition Report



RWE Generation UK Seal Sands

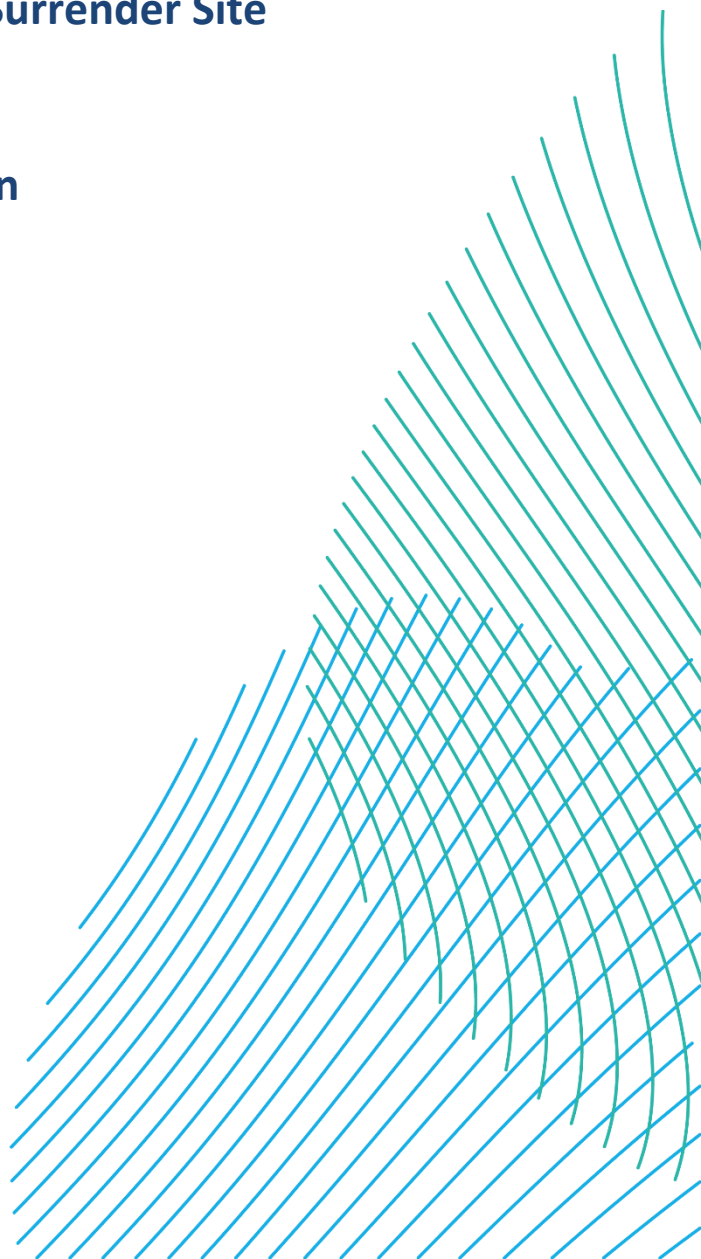
**Seal Sands Power Station Permit Surrender Site
Condition Report**

Location: Seal Sands Power Station

Permit No: CP3939QN

Date: 22nd June 2023

Document Ref: SS/ENV/001





Prepared by: Maggie Whitford

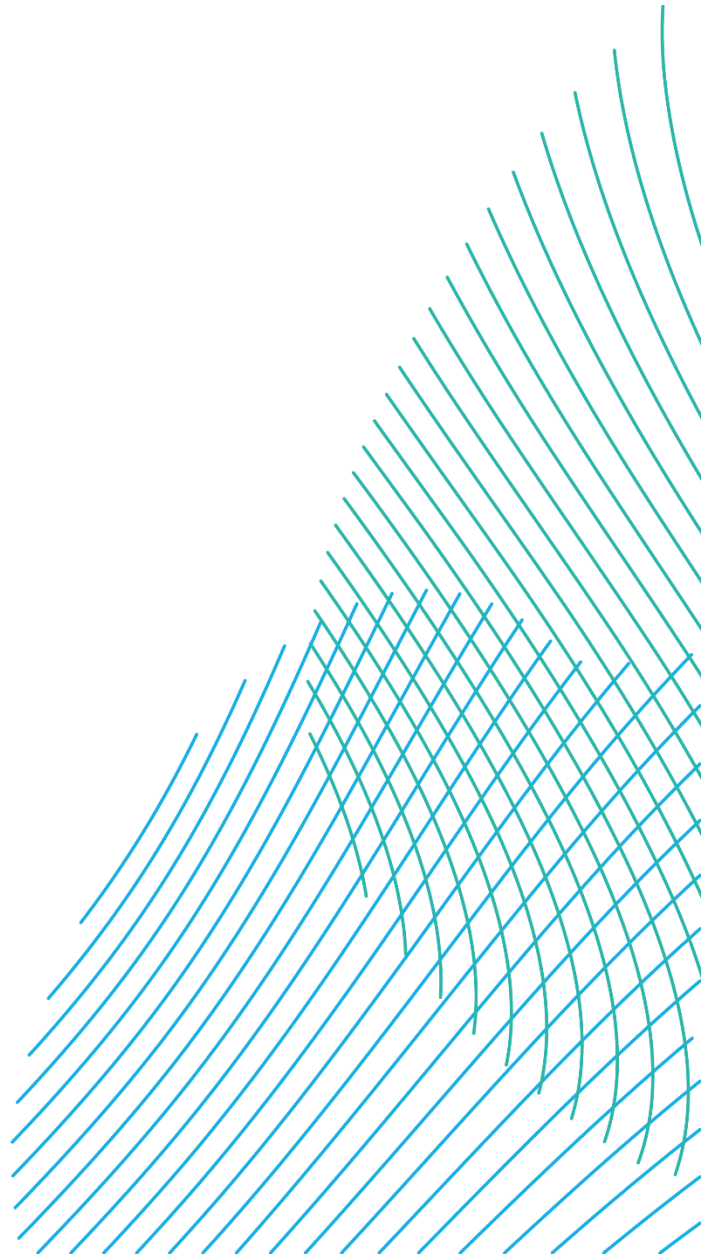
A handwritten signature in black ink, appearing to read 'Maggie', is shown within a light gray rectangular box.

Reviewed by: David Price

A handwritten signature in black ink, appearing to read 'David', is shown within a light gray rectangular box.

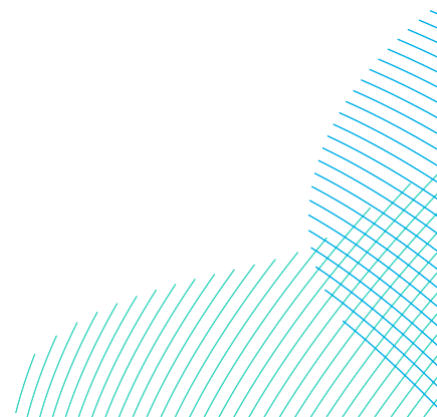
Approved by: Gill Hunter

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Summary

This site condition report has been prepared by RWE Generation UK (RWE) to accompany an application to the Environment Agency to surrender the environmental permit CP3939QN.

RWE believe that the information given this report and the associated appendices show beyond reasonable doubt that the ground and groundwater within the permit boundary has not deteriorated since the environmental permit was issued in 2006. Therefore RWE concludes that the site is in a satisfactory condition at the time of this submission and no further action is required to be undertaken to enable the surrender of the environmental permit.

Introduction

This document has been prepared to support an application by RWE Generation UK plc to surrender the permit for its Seal Sands Power Station following cessation of permitted activities and demolition of the associated plant.

The land is leased from Conoco Phillips (CoP) and RWE are required to vacate leased land by 30th September 2023.

1.0 Site Details

The RWE Generation UK Seal Sands Power Station site is located at North/ South Access Road, Seal Sands, Middlesbrough, TS2 1FB. The centre of the site is at National Grid Reference NZ 5272 2487. The site covers an area of approximately 0.5 ha and lies within an industrial complex at Seal Sands, Teesside, on the north side of the Tees Estuary.

The site is situated in an area dominated by heavy industry which includes oil and gas processing as well as chemicals and pharmaceutical manufacture. The nearest centres of population are located at Haver-ton Hill/ Port Clarence approximately 4.5 kilometres south west of the site. The nearest Site of Specific Scientific Interest (SSSI) and European site Special Protection Area (SPA) is the Teesmouth and Cleveland Coast, located directly adjacent to the site boundary.

A map of the site location and a site plan showing the installation boundary can be found in Appendix A. A site drainage plan and surface water drainage plan can be found in Appendix B.

Site History

Seal Sands site is situated within land owned by Conoco Phillips , the plant was built and commissioned in 1999 as a CCGT plant. There were subsequent upgrades in 2005 to provide CHP capability, with further upgrades in 2006 to fit dry low NOx burners (DLN) and enable acceptance of Off gas from Conoco Philips.

The energy supply contract between RWE and Conoco Phillips ceased due to un-economical commercial operation via Conoco Phillips (CoP) in 2013 and from then on the plant operated up until 2022 as market conditions dictated. Due to business strategic review in 2020 and a downturn in the market, a decision was taken to close the site in September 2020. Following this decision a notification for cease of land lease was given to Conoco Philips in September 2020. The site closed March 31st 2022 to enable decommissioning/demolition to take place.

The plant comprised of :

- 1 GE F6 Gas Turbine (GT),
- 1 Heat Recovery Steam Generator (HRSG) and
- a Steam Turbine (ST). the GT exhausted via the HRSG to a single 50m stack.

- A high pressure (HP) Gas AGI with pressure reduction,
- CHP export steam and condensate capture,
- 2 cell cooling towers,
- CoP Off gas supply from Conoco,
- Chemical Dosing equipment and
- Balance of plant ancillaries.

2.0 Condition of Land at Permit Issue

At the time of permit application, site reconnaissance was undertaken by representatives of RWE on May 5th 2006. The purpose of the reconnaissance was to inspect the site and surrounding area for indicators of potential land contamination. Site infrastructure was visually inspected to assess its competence and potential to cause or have caused releases to land. There were no indicators of land pollution found on site.

In addition, a site condition report was produced to support the permit application and soil and groundwater analysis was undertaken. This can be found in Appendix C. The baseline soil and groundwater reference data can be found in Appendix D.

3.0 Permitted Activities

The Permitted Activities as listed in the current permit are given below.

(Table S1.1 from Permit CP3939QN)

Schedule 1 – Operations

Table S1.1 activities		
Activity listed in Schedule 1 of the EP Regulations	Description of specified activity	Limits of specified activity
Section 1.1 A(1) (a): Burning any fuel in an appliance with a rated thermal input of 50 megawatts or more.	LCP 270 130.28 MWth: Operation of a combined cycle gas turbine power plant (CCGT), with heat recovery steam generator (HRSG), steam turbine and hybrid cooling, burning low pressure fuel gas and/or natural gas to produce electricity. One 1 MWth black start diesel generator.	From receipt of natural gas or low pressure fuel gas to discharge of exhaust gases and the generation of electricity and steam for export.
Directly Associated Activity		
Directly associated activity	Raw material storage – bulk storage of liquids in tanks and drums	Receipt, transfer and storage.
Directly associated activity	Waste handling – generation and storage of wastes	From generation of waste to despatch from the installation.
Directly associated activity	Surface water drainage	Handling and storage of site drainage until discharge to the site surface water system.

4.0 Changes to the Activity

There have been no changes to the permitted activity or the permit boundary since the permit was issued. The most recent variation to the permit was in 2020 to incorporate BREF requirements.

5.0 Measures taken to protect land

The Seal Sands site operates a robust Environmental Management System (EMS) as part of an RWE Generation UK portfolio wide EMS. The EMS has taken all due consideration of Environmental Aspects and Impacts and strived to manage environmental risk appropriately with a continuous improvement philosophy at its core. The EMS is certified with Lloyds Register.

The Environmental Risk Assessment EPR H1 from the permit application in 2006 can be found in Appendix E.

The following extract from the Environmental Aspects Register shows the relevant potential sources of contamination to land associated with the permitted activity at the location.

Ref	Category	Aspect	Source	Responsible
773	Land & Ground-water	Process chemicals (boiler water treatment chemicals, demineralisation plant chemicals)	Significant Environmental Aspects Evaluation	Site Manager
763	Land & Ground-water	Gas Oil	Environmental Permit conditions, Significant Aspect Evaluation	Site Manager
757	Land & Ground-water	Fugitive release from Sewer	Significant Aspects Evaluation & Legislation	Site Manager
748	Land & Ground-water	Fugitive release from Waste	Significant Aspects Evaluation & Legislation	Site Manager
737	Land & Ground-water	Transformer Oil	Significant Aspects Evaluation & Legislation	Site Manager
717	Land & Ground-water	Lubrication Oil	Significant Aspects Evaluation & Legislation	Site Manager
706	Land & Ground-water	Drainage System	Significant Aspects Evaluation & Legislation	Site Manager
398	Waste	Hazardous Waste	Aspect Evaluation, Stakeholder Concern, Legislation	Site Manager

388	Waste	Non-hazardous Waste	Aspect Evaluation, Stakeholder Concern, Legislation	Site Manager
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Each aspect was subject to a specific risk assessment which assessed the intrinsic risk, control measures that existed, and the residual risk after application of controls. These risk assessments are available on request. Site Operating Procedures were used to govern how the control measures were implemented at the location.

All oil and chemical tanks were subject to an pre inspection and maintenance programme (examples are available upon request).

6.0 Pollution incidents that may have had an impact on land, and their remediation

There have been no pollution events that may have had an impact on land. All environmental incidents and near misses are recorded in a central database (Madison). A list of all environmental incidents and near misses taken from the Madison system is included in Appendix G.

7.0 Soil gas and water quality monitoring

No soil gas or water quality monitoring has been undertaken as this was not identified as required in the ground investigation that was carried out.

There were no discharges to controlled waters from the power station. All process effluent, foul waste, surface and roof water run off all discharged to the host site CoP effluent systems.

8.0 Decommissioning and removal of pollution risk

The site was shutdown on 31st March 2022. The site closure has been completed in line with the Site Closure Plan version 5 (see Appendix H).

At time of submission, there have been no incidents during that would have resulted in contamination of ground or ground water during the decommissioning and demolition process.

As part of the asset transfer to CoP, the following items will remain on the plot:

- Black start diesel generator (containerised and banded)
- Distillate fuel oil tank (banded)
- Local Control Room Building
- 66-11kV transformer (within design bund)

- 11-3.3kV transformer (within design bund)
- 2 of 3.3kV-400V transformers (within design bund)
- Site drainage systems, pits and Klarjester on plant
- Effluent discharge system
- Remote control room, office buildings and stores including Klarjester

All the above items are not part of the demolition activities and are considered live. These items will be transferred to CoP on 30th September 2023 when RWE vacate the site.

A description of decommissioning process and removal of products and materials is below.

Gas Pipeline National Gas to AGI

- HP gas is supplied from National Gas (NG) compound within CATS terminal via 1.4KM pipeline. Isolation completed to RWE AGI FG107 (gas inlet valve), pipeline is purged and disconnected from NG network.

On Site Gas AGI

- On site AGI skid has a HP gas supply split into twin stream from pressure reduction (65 bar -30 bar); gas meter skid and dual stream pressure reduction for Potterton boiler house (4 industrial boilers, valves and pumps and closed heating system to gas pipeline heater). Within the compound is two huts: one for gas chromatograph and one meter to external provider (National Gas) for data telemetry.
- Both gas streams & pipework has be isolated, depressurised vented and purged with nitrogen and mainstream isolation valves removed and blanked.
- All AGI electrical/instrument and communications cables has been isolated, identified cut and dropped into the cable pit.
- A telephone line for NG metering from cubicle to control room under croft has been disconnected and cut and in bottom of cable pit. Legacy cable for data telemetry (Northern Gas network, before NG) IC1651 & IC1654 cables form RWE to AGI to CoP AGI has been isolated, identified, cut and placed in bottom of cable pit.
- Potterton boiler house twin stream reduction pipework has been removed.
- Potterton boiler water system has been depressurised and drained.
- Gas chromatographs disconnected. Calibration gases removed from site.

- Nitrogen & compressed air supply depressurised and pipework air gapped.

Reduction gas pipeline to (plot) UGI section

- Outlet pipework has been isolated, depressurised vented and purged with nitrogen.
- At AGI outlet, the discharge valve has been removed, the underground pipework has been disconnected and blanked at both ends of the UGI pipeline
- Fire detection system loops disconnected and placed in cable pits.

Dry Gas Filter Skid to GT inlet

- Gas supply UGI pipework riser blanked. Manual Isolation valve removed.
- Both dry gas filter gas streams & pipework has be isolated, depressurised vented and purged with nitrogen. Vessels opened and filters removed off site.
- All dry gas filter skid electrical/instrument and communications cables has been isolated, identified cut and dropped into the cable pit.
- Off gas inlet valve removed – all off gas supply pipework has been isolated, depressurised vented and purged with nitrogen.
- Nitrogen & compressed air supply depressurised and pipework air gapped.
- Fire detection system loops disconnected and placed in cable pits.

Gas Turbine

- GE Frame 6B 1.0 DLN converted 2006 – 40MW unit; 11KV 2 pole generator. 17 stage compressors with 3 power turbine sections.
- Gas pipework has been isolated, depressurised vented and purged with nitrogen. Manual isolation valves removed.
- All electrical (11kv-24v including DC supplied circuits) /instrument and communications cables has been isolated, identified cut and dropped into the cable pits at the front of the GT and rear Generator end. 11KV-415 including DC supplies cables have been identified, disconnected and air gapped within the appropriate switchgear.
- Compressed air supply depressurised and pipework air gapped.
- Water wash skid disconnected and drained.

- Lubrication oil removed and tanks cleaned, and lubrication/hydraulic filters removed. GT diesel day tank DFO storage drained, and tank cleaned. Diesel starter oil sump drained. Valves, actuators, bearings, motors, pump lubrication and grease pots removed.
- Gas Turbine oil tank contents removed from site by licenced contractor (waste transfer notes (WTN) included in Appendix I1)
- Off base Dollinger oil tank vapour extraction unit drained and contents removed by licenced contractor and included in above WTN.
- Off base oil purifier disconnected and removed.
- CO2 fire protection system disconnected, bottles depressurised, vent, valves disconnected and pipework air gapped.
- Fire detection system loops disconnected and placed in cable pits

Gas Turbine CCCW

- CCCW system for cooling Diesel starter loop, Lubrication oil tank coolers, flame scanners and generator coolers. (Water, glycol and inhibitor mixture). With two fin fan design cooler banks, one bank for GT generator and the other lubricating oil and diesel starter.
- Contents of system drained and removed off site by licenced contractor as part of routine collection of sump contents.
- Fire detection system loops disconnected and placed in cable pits.
- All skid electrical supply/instrument and communications cables has been isolated, identified cut and dropped into the cable pit.
- Pumps motor lubrication and grease pots removed.

HRSB boiler

- Stork HRSB conventional boiler 480 degrees C, 65 bar HP steam and IP steam 12 bar. Gt exhaust gases into boiler through to stack outlet. System consists of HP drum, IP drum, DA and associated pumps, motors actuators and valves.
- Boiler and ancillaries (IP & HP pumps, dosing and blowdown systems) has been fully depressurised, vented and drained.

- Fire detection system loops disconnected and placed in cable pits.
- All HRSG electrical supply (3.3Kv to 24v and DC supply /instrument and communications cables has been isolated, identified cut and dropped into the cable pit.
- Pumps, actuators, motors lubrication and grease pots removed.
- Emission monitor disconnected
- Safety shower disconnected and drained.
- All access doors have been opened and held with one bolt.
- Demin water tank drained, and door opened.

Chemical storage and dosing tanks

The site utilised the following chemical storage and dosing tanks:

- 15% Sodium Hypochlorite Biocide tank – CW Tower
- Inhib 25 Dispersant tank – CW tower
- 99% Sulphuric Acid tank - CW tower
- 5% Ammonia tank HRSG Boiler
- Disp 9 Phosphate tank HRSG boiler

All tank contents were utilised prior to closure, tanks and associated pipework purged and pumped with water, with exception of the INHIB 25 tank which was soapy washed via Veolia. The acid tank was purged via Veolia and contents removed off site (WTN in Appendix I2).

The status of other related aspects is as follows:

- Tanks remain open to atmosphere.
- Safety shower disconnected and drained.
- Pumps, actuators, motors lubrication and grease pots removed.
- Fire detection system loops disconnected and placed in cable pits.
- All dosing electrical supply/instrument and communications cables has been isolated, identified cut and dropped into the cable pits at HRSG front and CW sump area.

Steam turbine

- Steam turbine building contains MCC, control room, crane, ancillary equipment, ABB steam turbine 18MW HP steam and IP steam inlet LP blades exhausting into condenser. Generator is 11KV 4 pole generator.
- All electrical (11kv-24v including DC supplied circuits) /instrument and communications cables has been isolated, identified cut and dropped into the cable pits at the front of the Effluent pit.

11KV-415 including DC supplies cables have been identified, disconnected and air gapped within the appropriate switchgear.

- Compressed air supply depressurised and pipework air gapped.
- CCCW generator cooler and CW systems depressurised, vented and drained.
- Sumps pumped out and Condensate sump pumped out.
- Lubrication oil removed, and tanks cleaned, and lubrication/hydraulic filters removed. Rexroth and Hydac hydraulic system depressurised, vented, drained and tanks cleaned. Valves, actuators, bearings, motors, pump lubrication and grease pots removed.
- Off base oil purifier disconnected and removed.
- Hydrant fire protection system disconnected, and pipework removed.
- Fire detection system loops disconnected and placed in cable pits.
- CoP fire system beacon cables identified and cut on pipe bridge
- HP steam export valve disconnected and blanked (CHP export skid DWA013).
- Demin and process water valves and pipework's removed and air gapped.

CW tower

- The CW towers are a hybrid 2 cell design tower, with bund and pump sump area. The material is designed from tanalised wood and pack material.
- CW tower and systems have been fully shocked dossed.
- Gearboxes, Pumps, actuators, motors lubrication and grease pots removed.
- Fire detection system loops disconnected and placed in cable pits.
- All electrical supply 3.3kv to 24v /instrument and communications cables has been isolated, identified cut and dropped into the cable pits at CW sump area.
- CT tower dosing tanks/pipework empty, purged and disconnected.
- Compressed air has been disconnected and air gapped.

CHP Plot

- CCGT plant was upgraded 2005 for inclusion of CHP capability. Thus consisted of HP steam export pipework; desuperheating station, CHP switch room/control room, condensate return package with tanks and atmosphere vessel, CoP off gas supply skid for mixing Natural gas and ethane rich gas. This included a gas chromatograph.
- CoP off gas has been isolated, vented, purged with nitrogen and supply valve and vent valve has been blanked. CoP has also disconnected the off-gas supply by removing a T piece spool and blanks. CoP vent line has also been purged via CoP. Off gas pipework is air gapped all the way to the GT Dry gas filter skid.
- HP steam isolation MOV valve and bypass valves have been dome ended and radiation NDT completed.

- HP steam pipework warming line for CoP disconnected, dome ended, and radiation NDT completed.
- Condensate water return has been isolated and supply valve blanked with air gap. Condensate vessel access doors removed.
- Compressed air and nitrogen supply depressurised and pipework air gapped.
- Fire detection system loops disconnected and placed in cable pits.
- All electrical supply 415v to 24v /instrument and communications cables has been isolated, identified cut and dropped into the cable pits at Effluent sump area.
- 870DCS 013 & 870DCS014 communication cables to CoP have been isolated, identified and cut. This includes HP steam temperature X989 cable.
- Gas chromatograph disconnected and calibration bottles removed.

Five pipelines with valves and support will remain after demolition with pipe supports:

- HP steam line
- Off Gas vent and supply line
- HP warming line
- Condensate line

Pipe bridge TP Connections (Cross boundary)

The contract Terminal points are within COP land however we have agreed a new terminal point for demolition and asset transfer purposes, rear North side of ST building. It consists of:

- Demin water supply – bridge valve isolated, disconnected, blanked and air gapped
- Process/Raw water supply – bridge valve isolated, disconnected, blanked and air gapped.
- Air supply – bridge valve isolated, disconnected, blanked and air gapped.
- Air supply to CHP plot North on pipe rack to be removed as part of demolition.
- Nitrogen supply - bridge valve isolated, disconnected, blanked and air gapped.
- Nitrogen supply pipework to CHP plot North on pipe rack to be removed as part of demolition.
- Effluent discharge – water system live.
- ESD (legacy) Cables x25 – Cables isolated, disconnected, identified and cut.
- 3 fibre cables – Cables isolated, disconnected, identified and cut.
- 1 telephone cable CoP internal – Cables isolated, disconnected, identified and cut.
- 1 CoP fire system cable – Cables isolated, disconnected, identified and cut
- HP Steam to CoP - blanked and will be left as asset transfer on North of pipe rack.
- HP Steam from ST - shall be removed as part of demolition south direction on piperack.
- HP warming line from CoP - blanked and will be left as asset transfer on North of pipe rack.

- Condensate return from CoP - blanked and will be left as asset transfer on North of pipe rack.
- Condensate water return to RWE shall be removed as part of demolition south direction on pipe rack.
- Off gas supply and vent line - blanked and will be left as asset transfer on North of pipe rack.
- Off gas supply to GT mixing skid – shall be removed as part of demolition south direction on pipe rack.
- Desuperheater spray water from DA - shall be removed as part of demolition south direction on pipe rack.

Other site service such as potable water under pipe rack near air receiver supply will remain in place, as it is feeding CoP project area. After isolation valve to safety showers has been disconnected and blanked.

Compressed air receiver has been depressurised, vent and drained, air gapped.

Fire detection system loops disconnected and placed in cable pits.

Site drainage – (in Service)

The site is designed and levelled to collate site water via surface drains, HRSG blowdown pits and sumps, into the oily water interceptor, onto the effluent pit. This is discharged via a level system and pump controls via DCS.

All site process chemicals and oils have been removed from site.

Effluent pumps, controls, sampling is all left live until further notice. Effluent will stay in place for the duration of the demolition.

All electrical supply and control/instruments cables are low level are protected.

9.0 Reference data and remediation

In 2020, a ground investigation was undertaken to assist in the determination of the environmental baseline in line with the requirements of Directive 2010/75/EU on Industrial Emissions (IED).

The ground investigation concluded although there were detectable concentrations of a number of contaminants recorded in the soil and groundwater samples, no significant pollution linkages are considered to be present due to these concentrations. This assessment considered the environmental settling of the site, the pollution prevention and mitigation measures adopted and the generally low/ negligible concentration recorded for most of the contaminants of concern.

It was considered that no significant contaminant concentrations were identified at the site that may be associated directly with the permitted activities, and that these concentrations indicate the general background / baseline conditions. Therefore, it was considered that no additional investigation and/or

monitoring was required, other than the requirements specified in the environmental permit CP3939QN.

A copy of this report can be found in Appendix F.

There was not a requirement to undertake any additional land or ground water samples as part of this surrender application.

10.0 Statement of site condition

Permitted activities ceased in March 2022 with only clerical and electrical infrastructure maintenance taking place on site from this time onwards. During the operation of the power plant there have been no environmental incidents that have resulted in contamination of ground or ground water.

Decommissioning and removal of potentially polluting substances from site has been completed and demolition activities commenced in May 2023. During the decommissioning process there have been no incidents that would have resulted in contamination of ground or ground water.

RWE commissioned a ground investigation in 2020. The results of this investigation show that the land at the Seal Sands Power Station site has not deteriorated since the site was commissioned and the land is in a satisfactory state.

Consequently RWE are of the view that there are no barriers to surrendering the environmental permit for Seal Sands CHP.

Annex 2

E2P Power Island Geo-Environmental Desk Study

ConocoPhillips

ConocoPhillips Teesside Oil Terminal Ethane to Power

Geo-Environmental Desk Study

Reference: E2P-ARU-ZZ-ZZ-RP-YE-0011

P03 | 24 February 2025



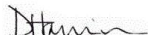
This report takes into account the particular instructions and requirements of our client. It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.

Job number 297973-00

Ove Arup & Partners Limited
4th Floor 10 George Street
Edinburgh EH2 2PF
United Kingdom
arup.com

Document Verification

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1. Introduction

Ove Arup & Partners (Arup) has been commissioned by ConocoPhillips Teesside to undertake a preliminary contamination risk assessment to accompany the planning application for the development of a Power Island (herein referred to as the proposed development) at the ConocoPhillips Teesside Crude Oil Terminal, Seal Sands.

The Site lies within the Norsesea Terminal boundary (herein referred to as the ‘Terminal’), on land leased to the applicant from PD Teesport Ltd, operated by ConocoPhillips (UK) Teesside Operator Ltd (herein referred to as ConocoPhillips). It will occupy a similar footprint to the previous RWE plant Site.

The key operational area of the proposed development would be located within a fenced area north of the South Boundary Road at the western edge of the Oil Terminal.

The Proposed Development comprises up to a maximum 18 No. gas engine units with associated stacks up to 11m, that would generate electrical power for use at the Oil Terminal, with excess power being exported to the National Grid. The total generation capacity of the Power Island would not exceed 49.9 MWe. The associated stacks would be up to a maximum height of 11m. The Proposed Development will be in continuous operation 24 hours per day, seven days per week.

The primary aim of this study is to provide information on the likely contamination conditions on the Site, including a preliminary contamination risk assessment, that will be sufficient to discharge any planning condition relating to the need for a preliminary contamination assessment.

This report takes into account the specific instructions and requirements of the Client. It is not intended for and shall not be relied on by any third party and no responsibility is undertaken to any third party.

1.1 Proposed Development

The proposed development would be built on land that is within the Oil Terminal boundary.

The key operational area of the proposed development is the “Power Island”, located within a fenced area north of the South Boundary Road at the western edge of the Oil Terminal.

The Power Island includes:

- Up to 3 No. electrical rooms;
- Existing Substation building located at the southern end of the Proposed Development;
- Existing electrical transformers;
- The gensets installed on the Power Island will be connected to separate external bulk tanks, for storage of fresh lubrication oil and recovered, waste lubrication oil. Each tank will contain up to a maximum of 10,000 litres of oil, housed within an integrally bunded steel tank;
- Each genset will have an individual, small dry tank containing a normal inventory of fresh lubrication oil contained within the genset enclosure; and
- A fuel gas metering control kiosk.

Ancillary infrastructure is required to support the Proposed Development includes:

- The preliminary design of the Power Island has been based on the installation of 8 No. lighting columns with a maximum height of approximately 7.5m. This is to be confirmed by the Vendor who will conduct a lighting assessment;
- Approximately 2 No. new fire hydrants, connected to the existing fire water system at the Oil Terminal;
- Existing pipe bridge above ground to accommodate gas supply and utility pipework to the Power Island;
- New connections from the existing pipe bridge to the gas engines via a new pipe bridge and new manifold;
- Use of the existing electrical connection (below ground) between the Proposed Development Site and the main substation serving the Oil Terminal Site;
- Installation of a new fibre optic data cables between the Proposed Development to an interface within the Oil Terminal Control Room, to provide appropriate telemetry management and monitoring;
- Refurbishment of existing surface water drain and pump system on the Site, as required, to accommodate the Proposed Development;
- An extension of the existing internal access road to accommodate vehicles required for the operation and maintenance of the Proposed Development;
- Installation of three new single storey modular buildings for office space and welfare facilities;
- Retention of the existing palisade security fence to the west, south and east boundaries of the Site, and addition of new palisade fencing to the northern and north-western boundaries of the Proposed Development; and
- Use of the existing Oil Terminal access road along the southern boundary of the Site for construction and operational phases.

The illustrative proposed Site layout for the Power Island is shown in Figure 1-1.

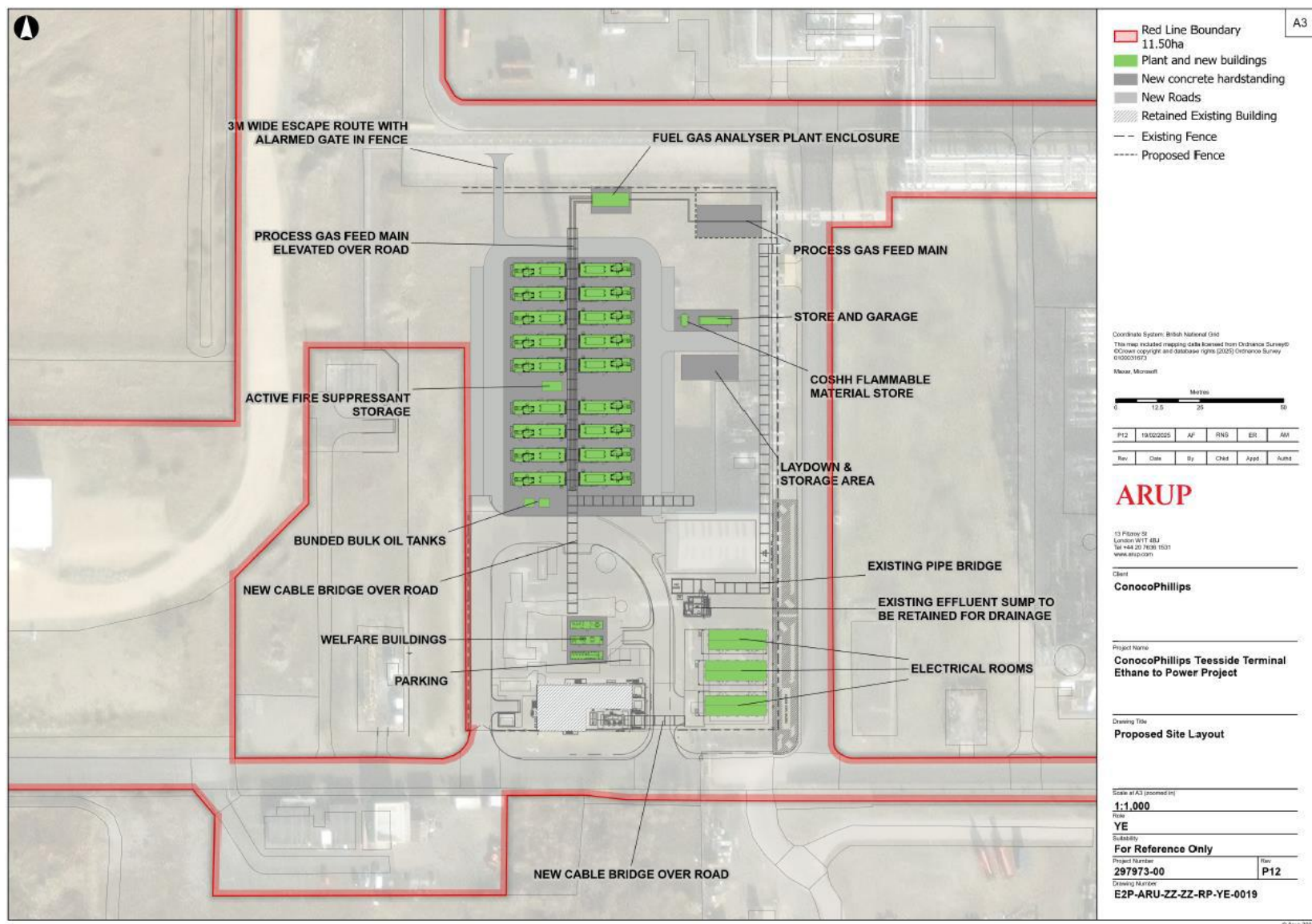


Figure 1-1: Illustrative proposed development layout

2. Study Area

2.1 Site Location

The Site is located within the Seal Sands industrial area, in Stockton-on-Tees Borough Council (SBC) within the ConocoPhillips Teesside Crude Oil Terminal ('Oil Terminal') boundary, centred at approximate National Grid Reference NZ 526 249.

The Site is bounded to the east and north by the ConocoPhillips facility, and to the west by scrubland used for temporary construction compounds. The south of the Site is bounded by 'Southern Boundary Road', with administration and storage compounds to the south the road.

The Site is sits approximately 400m south of the Teesmouth National Nature Reserve, forming part of the Tees Estuary.

2.2 Site Description

The Site boundary is irregular to accommodate the different development proposals. The key development area will be the 'Power Island' area, comprising a rectangular area c 11.5 ha in size, as shown in Figure 2-1. The Power Island development is located within a fenced area north of the South Boundary Road at the western edge of the Oil Terminal.

The nearest residential receptors are located approximately 4km to the northwest of the Site within the village of Greatham. There are residential receptors at Cowpen Bewley located 4.2km west of the Power Island. The Site is located approximately 6.6km to the east of Billingham, 6.3km to the west of Redcar, and 5.4km to the north-east of Middlesbrough.

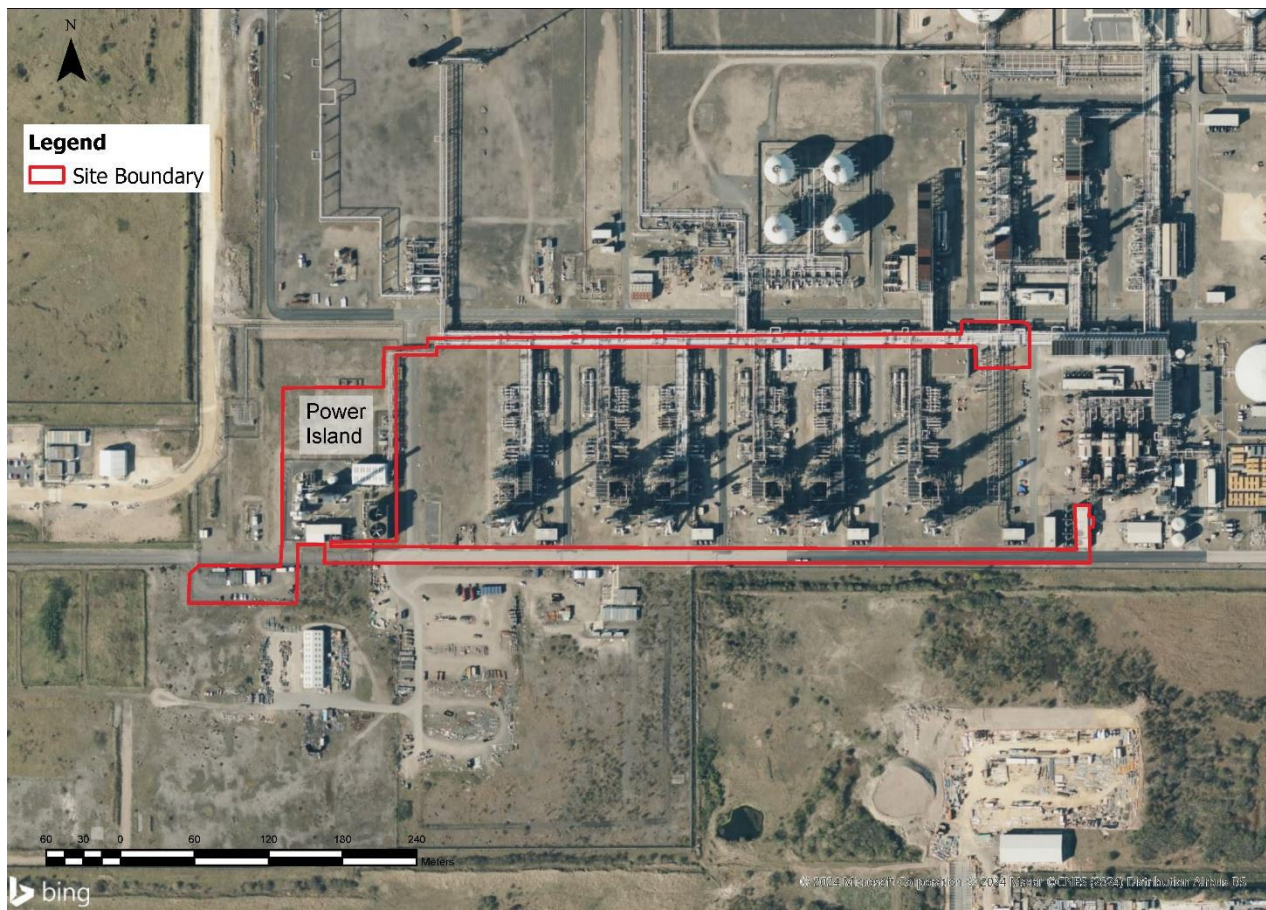


Figure 2-1: Site boundary for the purposes of geo-environmental desk top study

2.3 Site History

The development history of the Site has been established through review of the following sources:

- Published historical mapping. [1]
- Demolition and Preparation of Existing Site, drawing Sep 1997. [5]
- General arrangement of Earthworks, drawing Jan 1998. [7]
- Power Generation Plant General Site Plan, Roads and Drainage, drawing Sep 1997. [22]
- 210223 R JFR2761 2021 Seal Sands IED Baseline Report, Feb 2021. [3]
- RWE Health & Safety File Seal Sands Power Station: Post-Demolition, Sep 2023. [12]
- Keltbray Decommissioning Health & Safety File, Sept 2023. [14]
- Kvaerner Power Generation Plant Piling Layout Overlay to Existing Site, Oct 1997. [17]

Kvaerner Power Generation Plant Demolition & Preparation of Existing Site, Sept 1997. [18]

2.3.1 Published Site History

The earliest available mapping dating from 1855 shows the Site comprise tidal mudflats of the River Tees estuary, with subsidiary channels 500 to 750m to the north, west and south of the Site. The Seal Sands area was progressively reclaimed from the River Tees estuary during the latter part of the twentieth century, however this period is poorly represented by historical maps. Following reclamation, the Site is shown to be within the boundaries of an “oil refinery” by 1981, and the Site itself is indicated to have been developed by 1992, with subsequent developments in the late 1990’s.

A summary of published maps and aerial photographs is summarised within Table 2-1.

Table 2-1 Summary of Site History

Source	On Site	Offsite
1896-1940 1:10,000 and 1:2500 historic maps	Site and surrounding areas situated within the Tees Estuary.	Minor channels within estuary, at their closest within 500m north and west of the Site.
1950-55 1:10,000 and 1:2500 historic maps Online sources	No significant change shown on mapping. Seal sands area understood to be progressively reclaimed from the Tees estuary.	Earthworks shown shown c.1.5km south of the Site, within area of former estuary.
1981 - 1988 1:10,000 historic maps	Site shown to be reclaimed from the estuary.	Oil Refinery shown to bound the Site to the north and east, including tanks and chimneys located 100-250m north and east of the Site boundary. Earthwork bund shown approximately 50m west of the power island facility.
1994 1:2:500 historic maps	Building shown in the southwest of the Power Island area, drawings from this period indicate a number of smaller structures were present on the Power Island area (section 2.4.1)	No significant change
2000-2001 1:10,000 historic maps Aerial Imagery	Multiple buildings shown in the southwest and northeast of the Site. Aerial imagery shows these buildings to comprise processing plant, a chimney and cooling facilities, with an access road through the Site. The north area of the Site is shown to be undeveloped, comprising a hardstanding area.	No significant change.
2010 1:10,000 historic maps	Change in building layout on the Site in the south of the Power Island area, buildings in the northeast of the Site no longer shown.	No significant change
2024 Aerial Imagery	Aerial imagery from September 2024 indicates the majority of plant on the Site to have been removed, with a single building in the south of the Site remaining.	c. 200m north of the Site, two ground flares are marked. Otherwise, there is little appreciable change to the prior mapping period.

2.4 Previous Developments

2.4.1 Early Developments

Limited information regarding development prior to 1997 was available at the time of writing, however, drawings dating from 1997-1998 indicate the presence of an accommodation block, cabin and Nissen Hut on the Site (Figure 2-2). The use of these buildings was unknown at the time of writing, although the drawing indicates the buildings were scheduled for demolition.

2.4.2 Steam Generation Plant 1998 – 2023

A steam generation plant was constructed in 1998 and comprised steam and gas turbines and a heat recovery steam generator plant. The installation included [3]:

- A steam turbine, cooling towers and electricity transformers;
- A gas installation compound at the western edge of the Site;

- A control building in the south of the Site;
- An auxiliary diesel generator with a diesel tank (2000 litres) located in the west of the Site;
- A bulk diesel tank (10000 litres) in the west of the Site;
- An emergency generator (1MW) and separate gas turbine startup engine both running gas oil;
- A reinforced concrete oily water sump (c.2000 litres) in the west of the Site;
- Several electricity transformers, each with shallow concrete bunds;
- Low pressure fuel gas installation compounded in the northeast of the Site; and
- Additionally, there was a variety of auxiliary plant and facilities including electrical plant, steam & water pipework, drainage plant (oil/water separator and effluent sump) and various buildings and access roads. All effluent and surface water drainage were connected to the ConocoPhillips Oil facility.

The drawings indicate the development was piled, although the depth of piles is not shown on the drawings. There were also tarmacked and concreted areas, fencing, fire hydrants, sumps and a Nissen shed present on the Site at this time. [17] [18].

Construction drawings from the period indicate the northern area of the Site to comprise construction compounds.



Figure 2-2: Key historical developments on the Site. Comprehensive drawings of historic Site development are also available [5] [7] [22].

2.4.2.1 2023 Demolition Works

Demolition of plant on Site was undertaken by Keltbray between March and September 2023. Details of the demolition works are set out in the health and safety file [14].

The scope of works included demolition of above ground structures (other than specific buildings) including the removal of all plant and equipment, with any voids to be left clean and backfilled with clean aggregate.

A number of structures and facilities were reported to be retained following the demolition works, including:

- Below ground effluent system, pipework and support structures, underground utilities and services;
- Main Control building (MCC Building); and
- Pipe bridge connecting to Oil Terminal in the northeast of the Site.

A full record of retained plant and equipment on Site is provided in the RWE Post Demolition Health and Safety File [12] and Keltbray decommissioning Health & Safety File [14]. These reports indicate 6 tonnes of 'contaminated material' was removed from the Site, however no further details of what these materials were is included within the report. The report also indicates 464 litres of residue oils were removed, and that no asbestos was removed.

3. Ground Conditions

The anticipated ground conditions at the Site have been identified through a review of the published geology, readily available information and previous ground investigation reports, including:

- Solid and drift geology map, Sheet NZ 52 NW, British Geological Society (BGS) [20]
- GeoIndex online geological map and borehole log viewer [9]
- Phillips Petroleum Cogeneration Project, Factual Report on Site Investigation, 1996 [8]
- RPS, Seal Sands, IED Baseline Report and Factual Report, 2021[3]
- Solmek, Ethane2Power 2024 ground investigation (draft logs) [10]
- RSK, ConocoPhillips ground investigation factual report for offsite oil refinery Site, 2008 [13]

The ground conditions at the Site are anticipated to comprise made ground associated with recent and historical developments, underlain by reworked estuarine deposits placed during reclamation of the estuary during the mid 20th century. The Seal Sands area is understood to have been reclaimed through placement of hydraulic fill within cells formed by embankments. Slag materials are understood to have been used in the wider Teesmouth area for reclamation purposes. Natural deposits are anticipated to comprise estuarine deposits overlying glacial till, with Mercia Mudstone bedrock at depths greater than 30m below ground level.

3.1 Published Geology

Available BGS mapping indicates made ground is present across the Site, understood to be associated with the former reclamation works. Natural deposits beneath the Site are indicated to comprise tidal flat or estuarine deposits comprising sands, silt and clays overlying glacial till. The superficial geology is shown in Figure 3-1 below. The solid geology underlying the Site comprises the Mercia Mudstone Group consisting of interbedded mudstone and siltstone, underlain in turn at depth by the Sherwood Sandstone Group.

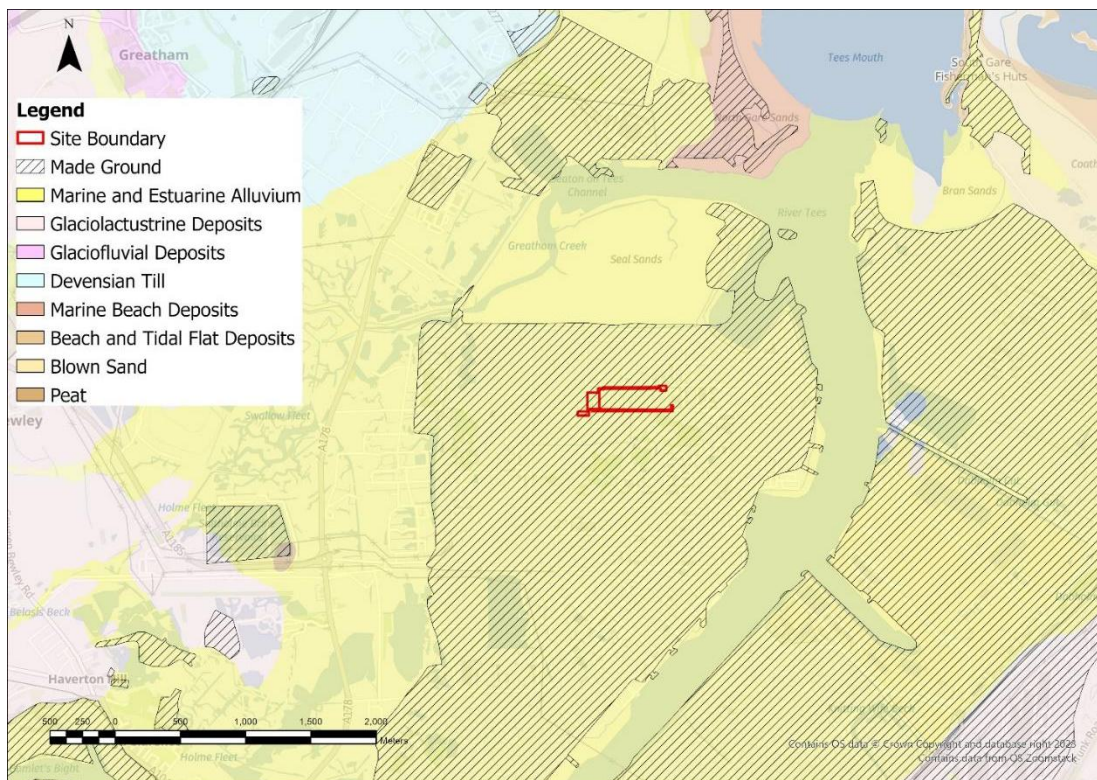


Figure 3-1: BGS published superficial geology (Contains British Geological Survey materials © UKRI 2024)

Records of historical ground investigations on and in the vicinity of the Site have been reviewed from BGS historical borehole records and previous and recent ground investigations provided by the client.

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Limited

A summary of ground investigation information available at the time of writing is summarised in Table 3-1:

Table 3-1: Previous Ground Investigation Information

Ground Investigation	Number and Type of Holes on Site	Groundwater Monitoring	Geo-Environmental Testing
On Site			
Phillips Petroleum Cogeneration Project [8] (1996)	4 cable percussive boreholes to 25-33m depth	Piezometers installed in two holes monitored once daily for a period of 5-6 days	pH and sulphate testing on samples of soil and groundwater.
RPS, IED Baseline Report [3] (2020)	2 dynamic windowless sampling holes to 3m depth located adjacent to former oily water sump	3 rounds at fortnightly intervals	Soil and groundwater testing for TPH, BTEX and PAH
E2P draft ground investigation information [10] (2024)	6 cable percussive boreholes Boreholes terminated at 30-30.45m depth with rockhead level not outlined on logs.	Monitoring installations present in three of the six holes. One round of groundwater monitoring available at time of writing.	Testing for metals, TPH, PAH, cyanide, sulphate, chloride, pH, asbestos and Inert Waste Acceptance Criteria (WAC).
Off Site			
RSK ground investigation [13] (2008)	16 holes within 250m of the Site: Windowless samples undertaken to maximum depth of 5.1m bgl.	One round of monitoring provided	Soil analysis: Extractable Petroleum Hydrocarbons (EPH), Volatile Petroleum Hydrocarbons (VPH), PAH, VOC. Groundwater analysis: BTEX, PAH, EPH, VPH, VOC
BGS Historic Boreholes [9]	13 holes within 250m of the Site, to a maximum depth of 30m bgl.	N/A	N/A

3.3 Anticipated Ground Conditions

3.3.1 Made Ground

Made ground is recorded to be present across the Site proven to range between c. 4.5 and 5m thick. Near surface materials generally comprises grey to brown gravelly sands and sandy gravels with slag gravel and occasional concrete and glass. Underlying made ground generally comprises medium dense grey to brown sands overlying a layer of soft to firm dark grey silt, anticipated to have been deposited as part of the land reclamation on Seal Sands during the 1950s.

Table 3-2: Typical Material Descriptions [3] [8] [9] [10]

Material Type	Description	Thickness Range (m)	Top Depth Range (mbgl)	Top Level Range (mAOD)
Made Ground (near surface)	Brown/ grey brown sandy fine to coarse gravel and cobbles (occasional slag and concrete, occasionally described as fused and compacted)	0.2 to 0.7	0 to 0.7	5.3 to 4.6

Material Type	Description	Thickness Range (m)	Top Depth Range (mbgl)	Top Level Range (mAOD)
Reworked estuary deposits	Orange/brown/ pale brown medium dense fine to coarse slightly gravelly sand	1.8 to 2.9	1.2 to 3	4.1 to 1.6

3.3.2 Superficial Deposits

Natural deposits are anticipated at approximately 4 to 5mbgl, and are anticipated to comprise a sequence of soft to firm clayey silts, underlain by estuarine deposits of interbedded sands, silts and clays. Glacial deposits are anticipated at c. 30mbgl to comprise firm to stiff sandy clay with occasional cobbles. The full thickness of superficial deposits has not been proven on, or adjacent to the Site.

Table 3-3: Superficial deposits

Material Type	Description	Thickness Range (m)	Top Depth Range (mbgl)	Top Level Range(mAOD)
Estuarine Deposits	Soft-Firm dark grey clayey silt	0.6 to 3.7	3 to 8.4	2.3 to 0.6
	Medium dense - dense brown sand	3.8 to 16	3.6-22.4	1.7 to -17.4
	Soft grey sandy clay	0.8-6	20-26.4	-14.7 to -21.1
	Soft-stiff grey silty (sometimes slightly sandy) clay	3.8-8.45	21-30.2	-15.7 to -24.9
Glacial Deposits	Firm-stiff red-brown slightly sandy clay with cobbles	>1.8	30 to 35	<-16

3.3.3 Bedrock

No exploratory holes on or within 100m of the Site encountered bedrock, indicating bedrock to be present at greater than 30 to 35m across the Site. The geological mapping indicates bedrock to comprise Mercia Mudstone Formation underlain by Sherwood Sandstone Formation.

3.3.4 Groundwater

Groundwater was encountered in the majority of previous ground investigation holes across the Site. Groundwater was typically encountered at shallow depths between 2 and 3m below ground level within the reworked estuary materials. It is anticipated that shallow groundwater is in continuity with the underlying groundwater within natural deposits.

Table 3-4: Groundwater monitoring summary

Ground Investigation (Borehole ID)	Groundwater Strikes (mbgl)	Range of Monitored Groundwater Levels (mbgl) [mAOD]
2020 BH1	Encountered at 2.6m and remained at this level for 20 mins.	1.4-1.6 [3.8 to 3.9]
1996 BH2	Encountered at 2.65m, rose to 1.7m after 5 mins. After 10 mins remained at 1.65m.	1.2-1.7 [3.4 to 3.9]

Ground Investigation (Borehole ID)	Groundwater Strikes (mbgl)	Range of Monitored Groundwater Levels (mbgl) [mAOD]
1996 BH3	Encountered at 1.8m, rising to 1.6m after 5 mins, 1.5m after 10 mins and then remaining at 1.4m after 15 mins.	2.3-3.6 [1.6 to 2.8]
1996 BH4	Encountered at 2.7m, rising to 2.4m after 20 mins.	N/A
2020 BH2	Encountered at 2.6m.	1.4-1.5 [3.8 to 3.9]
2024 BH01	Encountered at 2.3m, rising to 2.1m after 20 mins.	Groundwater monitoring ongoing at the time of writing.
2024 BH02	Encountered at 2.5m, rising to 2.1m after 20 mins.	
2024 BH03	Encountered at 2.5m, rising to 2.1m after 20 mins.	
2024 BH04	Encountered at 2.4m.	
2024 BH06	Encountered at 2.5m, rising to 2.1m after 20 mins.	

3.4 Contamination Conditions

Previous investigations on and surrounding the Site have undertaken a range of chemical laboratory tests on soil and groundwater. Although a detailed review of the test results was not within the scope of this report, a brief summary of the findings to date is provided in the following sections.

3.4.1 Total Soils Concentrations

The following chemical tests have been undertaken within samples of made ground on the Site:

- Six soil samples were tested as part of the 2024 ground investigation for metals, asbestos, pH, organic matter, sulphate, cyanide, Total Petroleum Hydrocarbons (TPH), BTEX, Polyaromatic Hydrocarbons (PAH), Phenol and Volatile Organic Compounds (VOCs); and
- Two samples were tested as part of the 2020 investigation, and were tested for TPH, BTEX and PAH.

The data reviewed indicates that:

- There are no exceedances of assessment criteria appropriate for commercial land use within any samples of made ground tested; and
- No asbestos was detected within the six samples tested.

An interpretation of the 2020 investigation is provided within the 2021 baseline report [3] and indicates that no elevated concentrations of any determinants were detected, when compared against criteria appropriate for a commercial land use.

3.4.2 Leachate Test Results

Leachate testing was undertaken as part of the 2024 ground investigation and comprised:

- Three samples of made ground tested for leachable metals, pH, cyanide, phenol, sulphate, PAH and TPH using a 10:1 leachate preparation method.

Interpretation of the results was not within the scope of this report, however an initial screening against saltwater environmental quality standards (SEQS) indicates:

- No exceedances of SEQS in three (1:10) leachate samples from made ground, with exception of:
 - Fluoranthene 0.05ug/l recorded in one sample above the SEQS of 0.0063ug/l;
 - Benzo(a)pyrene, the limit of detection (0.01ug/l) was greater than the SEQS of 0.00017 ug/l, it should be noted however that no samples exceeded the limit of detection; and
 - Elevated pH noted in one sample (BH104) of 10.9.

The presence of variable PAH and pH leachate results within slag bearing made ground has been noted across the Teesmouth area.

3.4.3 Groundwater Test Results

Three samples of groundwater were subject to laboratory testing as part of the 2024 ground investigation. These samples were tested for metals, TPH and PAH. The results are presented and screened against UK drinking water standards (DWS), within the ground investigation report provided by Solmek:

- BH01 recorded elevated Acenaphthylene and PAH total;
- BH04 recorded elevated Napthalene, Phenanthrene, Fluoranthene, Pyrene, Chrysene, Benzo(b)fluoranthene and PAH total; and
- BH06 recorded elevated Phenanthrene, Fluoranthene, Pyrene and PAH total.

It should be noted that the Solmek report uses DWS rather than Environmental Quality Standards (EQS).

Six samples of groundwater were tested as part of the 2020 ground investigation, from instruments installed adjacent to the former oily water sump.

These samples were tested for metals, pH, sulphate, TPH, PAH and VOCs. The results were assessed and discussed within the 2021 baseline report [3]

The report states “..given the generally low concentrations recorded for most of the detectable contaminants of concern, it is considered that no significant contaminant concentrations have been identified at the assessment Site that may be associated with the permitted activities and that these concentrations indicate the baseline/ background conditions.

Consequently it is considered that no additional investigation and/or monitoring would be required at the Assessment Site, other than the requirements specific in the environmental permit”.

Demolition records from 2023 indicate that the below ground effluent system was retained as part of the works, however it is not clear if the oily water sump was included within this. The demolition report makes reference to pumping and removal of all residue oils

The report states that no MTBE or BTEX compounds were detected within groundwater. The majority of PAH and TPH bands were either below the limit of detection or at low concentrations, however, one sample recorded noticeably higher concentration of C21 – C35 band on one monitoring round.

3.4.4 Contamination Conditions from Offsite Investigations

The results of chemical testing undertaken on soils and groundwater from the adjacent ConocoPhillips Oil Refinery are presented within the 2021 baseline report [3].

Visual and olfactory evidence of hydrocarbons was encountered within boreholes C1, C3 and C4 at depths ranging between 1.2 and 4m bgl. Elevated PID readings were also encountered at these levels ranging between 72 to 1139ppm.

The results for Zone B and Zone C (immediately north and east of the Site respectively) are reported to be within the acceptable ranges of concentrations for total soils concentration (in comparison to RSK's generic assessment criteria for commercial land use). Potential hotspots of contamination were identified within B2, B3, C2 and C4 for a range of metals, PAH's and hydrocarbons, however these did not exceed the screening values applied.

Analysis of groundwater samples indicated slightly elevated concentrations of chromium, nickel, vanadium, zinc and sulphate above the applied screening values. These exceedances were generally within an order of magnitude of the applied screening values (EQS).

3.4.5 Summary

The Site has previously been developed as electrical generation facility, comprising a gas turbine, waste heat boiler and steam turbine. The wider is associated with stabilising volatile crude oil for onward shipment. Information reviewed to date however indicates there is no evidence of oil processing within the current red line boundary.

The available geo-environmental testing indicates generally low levels of contamination, which is consistent with the previous development operations. Land outside of the Site boundary, associated with the oil refinery operations is indicated to be impacted by hydrocarbon contamination. Given the relatively permeable superficial strata, it is considered that offsite sources of contamination may contribute to background concentrations of hydrocarbons on the Site.

4. Environmental Setting

The environmental setting of the study area and immediate surrounding areas, including the hydrology and hydrogeology, land use and potential contamination sources, has generally been identified through a review of the following information:

- Groundsure Enviro & Geo Insight Report, 2024 [2]
- EIA Screening Report, 2024 Arup [11]
- IED Baseline Report, RPS 2021 [3]

This information has been supplemented by information provided by the Client and other specific data sources, as referenced below.

In summary, while the Site is primarily occupied by industrial land uses, the adjacent areas to the north and west of the Site are considered to be environmentally sensitive. This is associated with the River Tees Estuary and associated habitats, including a Site of Special Scientific Interest (SSSI), Ramsar Site, Special Protection Area (SPA), National Nature Reserve (NNR) and RSPB reserve.

4.1 Hydrology and Hydrogeology

Shallow groundwater is anticipated and has been noted to be perched within made ground and in hydraulic continuity with underlying groundwater bodies in previous ground investigations.

The superficial deposits are designated as a Secondary (Undifferentiated) Aquifer, where it has not been possible to attribute either category A or B. Glacial deposits at depth are anticipated to be relatively low permeability.

The Mercia Mudstone Group is designated as a Secondary B Aquifer, described as predominantly lower permeability strata which may in part have the ability to store and yield limited amounts of groundwater by virtue of localised features such as fissures, thin permeable horizons and weathering. Water within the Mercia Mudstone Group will be generally contained within the coarser-grained siltstones and sandstones. The BGS geological memoir for the region [21] indicates that water in the underlying Principal Aquifer Sherwood Sandstone Group is likely to be brackish.

The Site is not on or within 2km of a source protection zone or nitrate vulnerable zone.

The Site is located within Flood Zone 1 with surrounding areas located within Flood Zone 2 and 3.

It is understood that there is no direct discharge from prior Site use to surface water or drains. Non-hazardous effluent is recorded to have passed through an oil/water separator and collected within a sump before being pumped to the effluent treatment plant on the adjacent ConocoPhillips facility for treatment. Foul drainage passes to two Klargestar package plants for treatment [3].

4.2 Environmentally Sensitive Sites

A map showing the environmental designations within the vicinity of the Site and its surrounding area is presented in Figure 4-1. These environmental features and designations in summary are outlined in Table 4-1.

None of the following were noted on or within 2km of the Site:

- Listed buildings;
- Scheduled monuments; and
- Ancient woodland.

Table 4-1: Environmental designations within 2km of the Site

Site	Approximate Distance from RLB
Teessmouth and Cleveland Coast Special Protection Area (SPA)	191m north
Teessmouth and Cleveland Coast Ramsar	285m north
Teessmouth and Cleveland Coast Site of Special Scientific Interest (SSSI)	180 north
Teessmouth National Nature Reserve	280m north
Greatham Creek North Bank Local Wildlife Site	1010m north west
Greenabella Marsh Local Wildlife Site	1210m north west
Brinefields Local Wildlife Site	830m north west
Zinc Works Bird Fields Local Wildlife Site	1700m north
Saltern Saltmarsh	1580m north west
RSBP Saltholme nature reserve	150m south west

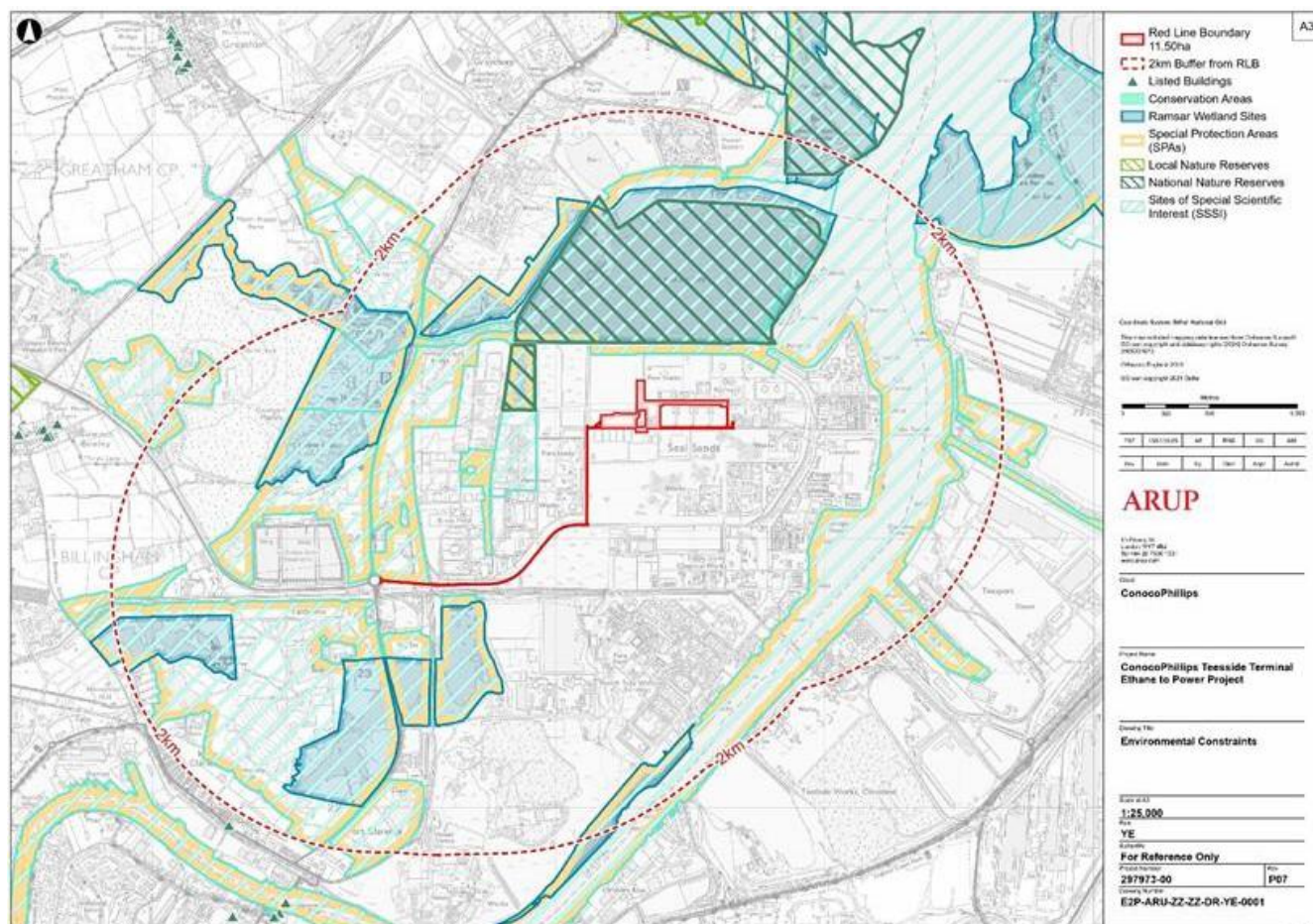


Figure 4-1 Environmental Designations

4.3 Landfill and Waste Disposal Sites

The Groundsure report [2] obtained for the Site indicates that two areas of historical landfill are present in the vicinity of the Site:

- A historic landfill located on the southern boundary of the Site is recorded to have been licensed in 1977 to Imperial Chemical Industries Ltd, associated with commercial waste; and
- A historic landfill located 75m north of the Site associated with Tees and Hartlepool Authority, licensed between 1978 and 1989 associated with industrial waste.

4.4 Adjacent Land use

Plant on the ConocoPhillips Oil Stabilisation Terminal East of the Site includes [13]:

- Pig receiving area and metering including Sump 01, crude oil and oily water
- Charge pumps/demulsifiers, crude oil;
- Lube oil tanks in utilities area, lube oil;
- Off-spec sump at effluent treatment plant (ETP) area, oily water;
- Metering sumps and slop tanks in the ETP/jetty area, oily water and oil;
- Ballast storage tanks in jetties area, oily water;
- Site-wide lube oil storage; and
- Pressure drains at the main Site, oily water and oil.

4.4.1 Licenses and Consents

The following are licensed or consented activities associated with recent industrial areas on and adjacent to the Site (within c.300m).

Table 4-2: Summary of licenses and consents

Location	License/Permit Type (date)	Consented Activities/ Chemicals	License Holder
On Site	COMAH Site (currently operational)	The Terminal is an upper tier COMAH Site.	ConocoPhillips
On Site	Environmental Permit (surrendered)	Operation of a combined cycle gas turbine power plant (CCGT) with heat recover steam generator, steam turbine and hybrid cooling, burning low pressure fuel gas and/or natural gas to produce electricity.	RWE
Offsite (75m E of Site)	Hazardous substance storage/usage (1992)	Storage of ethane, propane, iso-butane, butane, mixed liquified natural gas and crude oil	Phillips Imperial Petroleum Limited
Offsite (100m S of Site)	Storage of up to 6500 tonnes of dangerous for the environment substances (fuel oil) (2007)	Storage of 6500 tonnes of fuel oil	ConocoPhillips
Offsite (300m NW of Site)	Storage and movement of up to 630000 tonnes of natural gas/liqefied natural gas (2007).	Storage and movement of up to 630000 tonnes of natural gas/liqefied natural gas.	ConocoPhillips

Location	License/Permit Type (date)	Consented Activities/ Chemicals	License Holder
Offsite (300m E of Site)	IPC (historical licensed industrial activities) (1992-1998)	Not specified	ConocoPhillips
Offsite (50m SW of Site)	Licensed industrial activities (2016-2024)	Combustion, any fuel	RWE Cogen Ltd/ RWE Generation UK plc
Offsite (75m E of Site)	Licensed industrial activities (2004-2024)	Specialty organics processing Disposal of >50T of non-hazardous waste Processing of organic, aromatic and phosphorus containing chemicals Waste Incineration including Bromine and Zinc containing chemicals Processing of organic halogen containing compounds Processing of organic compounds nitrogen Processing of organometallic compounds Processing of organic compounds containing sulphur	Shanks Chemical Services Limited Aurorium UK Limited & Veolia ES (UK) Limited Laporte Industries Ltd Laporte Industries Ltd Laporte Industries Ltd Laporte Industries Ltd Laporte Industries Ltd
Offsite (300m E of Site)	Radioactive Substance authorisations (2020)	Not specified	ConocoPhillips
Offsite (5m SW of Site)	Licensed Discharges to controlled waters (2003-present)	Discharge of final/treated sewage	Innogy Cogen

4.4.2 Pollution incidents and enforcement action

Information reviewed indicates no recorded pollution events have been recorded on the Site. A summary of the recorded incidents within 500m of the Site are recorded in Table 4-3.

Table 4-3: Recorded pollution events

Location	Year	Description/comments
Discharge of substances on List I of the European Directive E 2006/11/EC of Dangerous Substances		
350m SE of Site	Not specified	Discharge of Mercury to the River Tees by Dow Chemical Ltd.
Discharge of substances on List II of the European Directive E 2006/11/EC of Dangerous Substances		
75m E of Site	Not specified	Discharge of BTEX to the River Tees by Shanks Chemical Services Ltd.
300m S of Site	Not specified	Discharge of cyanide to the River Tees by Fine Organics
350m S of Site	Not specified	Discharge of cyanide to the North Sea by Seal Sands Chelates and Fine Chemicals.
Pollution Incidents		
230m SE of Site	2003	Atmospheric pollution (category 3 minor impact)

None of these recorded pollution incidents are considered likely to have had an impact on the ground or groundwater quality within the Site, as they relate to discharges into the River Tees or the air.

4.5 Unexploded Ordnance

The online Zetica risk maps [23] indicate the Site lies in an area of moderate risk for air dropped ordnance with records of two decoy sites within c.2km of the Site and a further decoy Site within c.3km of the Site.

Given the Site underwent significant post-war development; it is anticipated that unexploded ordnance at shallow depth are likely to have been removed during previous development of the Site. A UXO desk study was previously carried out at the Site on the 7th October 2024 by Zetica UXO on behalf of ConocoPhillips.

5. Preliminary Contamination Risk Assessment

5.1 Introduction

Land contamination can present a financial and environmental risk to Site development. The risks to development include the potential to cause harm to health or the wider environment, the financial and legal implications for landowners and developers of dealing with these issues, and the potential impact on land value. The principal UK legislation related to land contamination is contained within Part 2A of the Environmental Protection Act, 1990, supplemented by other legislation and statutory controls including those related to pollution, waste, water quality and planning.

The central objectives of the UK land contamination regime are the prevention of significant harm, promotion of sustainable development and the adoption of a 'suitable for use' approach to land remediation. The regime is founded upon the promotion of a risk assessment approach to managing land contamination. This focuses on establishing where risks to human health or the wider environment are unacceptable, and then taking appropriate and proportionate action to deal with these risks.

As set out within the EA's (Land Contamination Risk Management) LCRM guidance [19], the UK follows a source-pathway-receptor approach to contamination risk assessment. This involves developing a conceptual Site model to identify potential contaminant linkages. Such linkages rely on a 'source' of contamination potentially existing, a sensitive 'receptor' such as people, water resources, habitats or building materials being present, and a credible 'pathway' that could result in the receptor being exposed to the source.

A preliminary contamination risk assessment has been prepared for the Site. The risk assessments should be reviewed and updated as further information becomes available and the proposals are confirmed. The risk assessment considers the risk posed by existing contamination only, and does not assess the potential for further ground contamination as a result of the proposed development. It is assumed that this will be assessed separately, and that appropriate measures incorporated into the development to prevent such contamination from occurring.

5.2 Potentially Contaminative Land Uses

Based upon the findings of the desk study, a number of potentially contaminative land uses have been identified on and adjacent to the Site, including:

- Land reclamation during the mid 20th century;
- Unknown developments on and adjacent to the Site pre-1996;
- Steam Generation plant from 1996 to 2022, with associated demolition in 2023; and
- Construction and operation of ConocoPhillips Oil Terminal immediately adjacent to the Site, including stabiliser trains for the removal of impurities and stabilising of crude oil.

5.2.1 Potential Hazardous Materials

A preliminary risk assessment and conceptual Site model were developed and assessed as part of the environmental permitting on Site in 2021. The findings of the report, supplemented by the Site history have been used to inform the potential sources and types of contamination.

The report states the potential sources of contamination included:

- Oily water storage sump located in the west of the Site;
- Fuel oil stored in several bulk tanks;
- Boiler and cooling water conditioning chemicals stored in several bulk tanks; and
- Lubrication/ transformer oil.

Table 5-1: Summary of potentially hazardous materials used on or adjacent to the Site [3] [16]

Potentially Hazardous Substance	Details
Power Island ‘Main Facility’ **	
Gas Oil	Fuels were stored within bunded tanks. Concrete hardstanding was noted to be in generally good condition and subject to routine inspection. Bunds have a capacity for 110% of stored volumes. Site is well managed and maintained.
Oily water	Stored in below ground concrete oil sump. Subject to weekly inspections during plant operation. Targeted ground investigation undertaken in 2021 did not identify elevated concentrations of MTBE, BTEX or TPH above screening criteria within soil. All concentrations of PAH were either below the limit of detection or at low concentrations. Groundwater sampling was undertaken on three occasions from two exploratory holes in 2021. Laboratory analysis indicates the majority of PAH and TPH bands either below the limit of detection or at low concentrations. With higher concentrations of aliphatic C21-C35 noted (1,320ug/l) on the third monitoring round.
Insulating oil	Contained within transformers which were situated over shallow sumps. Concrete hardstanding was generally in good condition and subject to routine inspection. Bunds have a capacity for 110% of stored volumes. Site is well managed and maintained.
Engine/lube oil	Stored in appropriate manner in dedicated areas. Concrete hardstanding is in generally good condition and subject to routine inspection. Bunds have a capacity for 110% of stored volumes. Site is well managed and maintained.
Antifreeze (glycol)	Stored in 205 L drums within WTP building, within closed cooling water system and within Engine Enclosure. Site is well managed and maintained.
Turbo K (GT blade wash)	Stored in 205 L drums within steam turbine building. Site is well managed and maintained.
Cooling water conditioning chemicals (sulphuric acid, sodium hypochlorite, anti-scale)	Double skinned and bunded tanks, served by dedicated drainage.
Boiler water conditioning chemicals (Trisodium phosphate solution, Ammonia)	Tank located within contained area (served by dedicated drainage).
Asbestos	No asbestos detected in previous ground investigations, however. potential for asbestos within soils associated with former and recent demolition activities on the Site. No asbestos identified in 18 samples collected during 2010 survey of gaskets, floor tiles and cladding. An asbestos survey undertaken in 2022 as part of the demolition works by Lucion Services Ltd. The scope of the survey included sampling of 74 materials across the Site, with asbestos detected within three samples. The three samples related to gaskets which were reported to include Chrysotile asbestos. The 2023 demolition completion report (Keltbray) states that an asbestos survey was undertaken prior to demolition, and no asbestos was found during the course of demolition.

Potentially Hazardous Substance	Details
Northern Pipe Bridge Area (RSK Contam linkages re-evaluation report (2008 GI zone B)) (immediately north of the pipe bridge)	
BTEX, TPH, PAH, Metals (Soils & Groundwater)	Twelve soil samples across zone B submitted for analysis, with majority recording TPH concentrations below limit of detection (10mg/kg). Elevated concentrations encountered in B3 with C12-C16 concentrations of 10,600mg/kg. Majority of samples were found to have PAH concentrations below the limit of detection. Highest concentrations were encountered in B2, B4 and B5 with a maximum of 21.49mg/kg total PAH recorded. PAH speciation was not available. Groundwater testing for BTEX and hydrocarbons did not encounter elevated concentrations above EQS. Elevated concentrations of chromium and sulphate were encountered. The 2008 report states soil and groundwater contamination does not appear to represent a risk to the environment.
PFAS/ PFOA (Fire fighting foam)	A number of firefighting foams are stored within the oil terminal (a total of 12.4m ³ recorded in 2017). All firefighting foams within the Oil Terminal were recorded (in 2008) as being miscible in water, biodegradable and unlikely to bioaccumulate and have relatively low toxicity to aquatic organisms [13].
Offsite	
TPH, VOCs	Elevated concentrations of petroleum hydrocarbons encountered within soils and groundwater within Zone C, located c. 200-300m east of the Site [13].

5.3 Potential Sources of Contamination

Following Site clearance and demolition works undertaken in 2023, it is considered that sources of contamination on the Site may comprise:

- **General made ground materials:** Contamination associated with fill materials placed during reclamation of the Site from the River Tees estuary and subsequent construction and earthworks activities;
- **Other soils contamination:** Areas of more significant soil contamination, for example associated spillages to the ground of chemicals or hydrocarbons produced, used or stored on or in the vicinity of the Site. Such contamination would often be expected to be more localised in extent;
- **Groundwater:** Contamination of groundwater as a result of soil contamination on or in the vicinity of the Site; and
- **Ground gas:** Potentially hazardous ground gas resulting from the degradation of organic materials within the ground.

Details of the potential contaminants of concern and anticipated levels of contamination in relation to the above are summarised for each area of the Site in Table 5-2 below.

Table 5-2: Summary of Potential Sources of Contamination

Source	Area of the Site	Potential Contamination
Soil and Groundwater		
On Site: General made ground and soils within former development areas, including demolition materials, soils impacted by spills and backfill to underground structures.	Power Island 'Main facility' Pipe Bridge North Cable Corridor South	Nature and levels of any contaminants present will depend on the nature of any materials placed or used on the Site. Made ground is indicated to contain demolition materials including brick, concrete and clinker. Potential for

Source	Area of the Site	Potential Contamination
Northern part of the Site used as contractor compounds.	Existing Oil Terminal (Substation No.1 & Control Facility)	historic demolition materials to include asbestos. Previous land use included use of hydrocarbons, glycol, sulphuric acid, sodium hypochlorite, anti-scale, trisodium phosphate, ammonia. Areas near the Pipe Bridge and Existing Oil Terminal are noted to potentially be affected by hydrocarbon contamination.
On Site Residual asbestos containing materials	Power Island 'Main facility' Pipe Bridge North Cable Corridor South Existing Oil Terminal (Substation No.1 & Control Facility)	Chrysotile containing gaskets were identified on the main facility Site prior to demolition in 2023 [15]. A post demolition report [12] suggests that no asbestos was encountered during demolition works. There remains a residual risk that asbestos may be present in all areas of Site associated with made ground or demolition materials. No asbestos was detected within six samples tested as part of the 2024 ground investigation.
Off Site: Oil Terminal	Eastern boundary of the Site	Hydrocarbon odours and black staining have been recorded locally within made ground. Potential for hydrocarbons, metals and asbestos associated with operation of oil terminal immediately adjacent to the Site.
Groundwater		
Shallow groundwater anticipated beneath the Site.	Power Island 'Main facility' Pipe Bridge North Cable Corridor South Existing Oil Terminal (Substation No.1 & Control Facility)	Previous ground investigations have identified elevated metals and hydrocarbons within groundwater adjacent to the Site. Potential for wide range of contaminants associated with previous chemical processes and hydrocarbon storage on and adjacent to the Site.
Ground Gas		
Made ground associated with areas of infilling	Any areas of filling	Potential that any decomposing materials within made ground could generate carbon dioxide and methane. Fill materials generally relatively thin and expected to comprise crushed demolition materials with limited organic content, and therefore likelihood of generation of significant volumes low.
Spills or areas of greater contamination	Locally within areas of former processing, pipelines or storage	Potential for volatile compounds which may produce harmful vapours.
Estuarine deposits (natural and reworked)	Present across the Site area	Potential for organic materials within the estuarine deposits that could generate ground gases.

Source	Area of the Site	Potential Contamination
		Organic odours noted locally within estuarine deposits.

5.4 Potential Contaminant Linkages

Based on the nature of the anticipated development and environmental setting of the Site, it is considered that there is potential for a number of receptors could be exposed to contamination through pollutant pathways. Receptors could include construction workers, end users of the proposed development (including personnel involved in Site maintenance), users of adjacent sites, groundwater, building materials and vegetation. Ecological receptors include the Teesmouth SPA and SSSI located approximately 200m north of the Site.

The potential contamination linkages associated with these are summarised in Table 5-3:.

At the time of writing the exact form and layout of the facility was subject to confirmation, however, for the purposes of this preliminary risk assessment it is assumed that the development will comprise:

- Predominantly outdoor plant, but with some enclosed indoor spaces such as plant rooms, storage and other buildings;
- Hardstanding in areas of plant and walkways between plant and buildings; and
- Gravel surfacing between plant and walkways.

Table 5-3: Potential Contamination Linkages

Source	Pathway	Receptor	Comment
Soil and Groundwater			
General metal, hydrocarbon, organic and inorganic contamination associated with made ground and backfill materials. Soils within processing and storage areas.	Dermal contact, ingestion or inhalation of soils, dust or water. Inhalation of any vapours.	Construction workers, Site end users (workers/visitors), adjacent land users	TPH & BTEX levels above detection limits but below commercial GACs identified on Site [16]. Potential linkages most likely to exist during earthworks and construction phases.
	Leaching and lateral migration of groundwater	Surface water and nearby Teesside Estuary (SPA and SSSI)	Potential migration through generally granular made ground and alluvial deposits. Lateral migration down hydraulic gradient through relatively permeable made ground/ alluvial superficial deposits.
		Groundwater aquifer (Sherwood Sandstone)	Thick superficial deposits (>30m), and overlying Mercia Mudstone bedrock anticipated to significantly reduce migration of contaminants into underlying aquifer.
	Direct contact	Construction materials including buried concrete and water supply pipes.	Anticipated to be mitigated through appropriate selection of construction materials.

Source	Pathway	Receptor	Comment
Asbestos contamination within made ground or any future processed demolition arisings.	Inhalation of dust	Construction workers	Exposure anticipated to be greatest during earthworks phase of construction.
		Adjacent land users	Site operatives and maintenance workers at surrounding sites.
		Site end users including workers, Site visitors and maintenance workers.	Potential linkages may be reduced through appropriate soft landscaping design (anticipated to be minimal) and control measures.
Groundwater	Migration of groundwater to surface water or bedrock. Potential for enhanced pathways through any pre-existing or additional piling.	Groundwater (bedrock aquifer) Surface water or perched groundwater	Vertical & lateral migration possible through relatively high permeability made ground and alluvial deposits, and preferential migratory pathways along existing or new piles. Piled foundations are anticipated to terminate within low permeability glacial till and unlikely to create new pathways for contaminant migration. Contamination risk to bedrock aquifer (Sherwood sandstone) considered low due to the depth of overlying superficial deposits (>30m) relatively impermeable Mercia Mudstone bedrock overlying the Sherwood Sandstone aquifer.
Ground Gas	Migration of ground gas and accumulation in confined spaces and asphyxiation/explosion.	Construction workers	Sensitivity of the proposed development to gas ingress is considered to be low, as the facility is to comprise gas turbines. Safeguards will be in place as part of the building's operational measures to protect against gas accumulation and explosion.
		Site end users including workers, Site visitors and maintenance workers.	

5.5 Risk Assessment

A provisional assessment of risks posed by each of the identified pollutant linkages has been made ground a preliminary qualitative risk assessment. The risks have been estimated in line with the guidance provided in CIRIA Report C552 [6].

As identified in Section 5.3, the assessment has assumed a low likelihood of widespread contamination across the Site, but with potential for areas of some more significant contamination locally associated with any localised spills on and adjacent to the Site. Evidence reviewed to date indicates that the former plant was operated and maintained well, reducing the risk of unrecorded spills.

Table 5-4: summarises the possible source-pathway-receptor relationships and estimates the magnitude and probability of the risk posed in line with CIRIA C552. The risks are evaluated in section 5.6.

Table 5-4: Preliminary contamination risk assessment

Source	Pathway	Receptor	Consequence of Risk	Probability of Risk	Classification of Risk	Comments/ Mitigation	Post Mitigation Residual Risk
General metal, hydrocarbon, organic and inorganic contamination associated with made ground and land reclamation materials.	Dermal contact, ingestion or inhalation of soils, dust or water. Inhalation of any vapours.	Construction workers	Mild	Likely	Moderate/ low risk	Risks to construction workers could be mitigated through appropriate health and safety controls and best practice during siteworks.	Low Risk
		Adjacent land users	Minor	Unlikely	Very Low Risk	Risk anticipated to be greatest during construction works and negligible post construction.	Very Low Risk
		Site end users including workers, Site visitors and maintenance workers.	Mild	Low Likelihood	Low Risk	Appropriate remediation such as incorporation of clean cover system may be needed to mitigate residual risks. Anticipated that any intrusive works on the Site post-construction will be well controlled by Site permitting.	Very Low Risk
	Leaching and lateral migration of groundwater	Surface water and nearby Teesside Estuary	Mild	Low Likelihood	Low Risk	Risk anticipated to be greatest during construction works, when ground is disturbed and leaching could increase temporarily but would return to negligible/very low on completion of construction when hardstanding and buildings will limit the amount of leaching.	Very Low Risk
Asbestos contamination within made ground	Inhalation of fibres	Construction workers	Medium	Low Likelihood	Moderate/Low Risk	Asbestos contamination to be assessed and managed in accordance with the requirements of the Control of Asbestos Regulations 2012. All excavations should be inspected for any evidence of contamination and appropriate additional control measures should be adopted as necessary. Extent of any asbestos within substructures/potential risk of presence to be established prior to any proposals for breaking out/crushing/processing of existing substructures. The 2024 GI indicates that no asbestos was detected in six boreholes sampled.	Low Risk

Source	Pathway	Receptor	Consequence of Risk	Probability of Risk	Classification of Risk	Comments/ Mitigation	Post Mitigation Residual Risk
		Adjacent land users	Medium	Unlikely	Low Risk	Greatest risk during construction earthworks phase.	Low Risk
		Site end users of development including workers, Site visitors and maintenance workers	Medium	Low Likelihood	Moderate/ Low Risk	Risks to be mitigated as part of permanent design through appropriate cover in any areas of soft landscaping. Any potential residual risks to be communicated in the Health and Safety File to enable appropriate measures to be developed for maintenance workers. Any future excavation works anticipated to be limited by Site permitting.	Low Risk
Groundwater	Migration of groundwater to surface water or bedrock. Potential for pathways through any pre-existing or additional piling conducted as part of the development.	Surface water or perched groundwater (SPA and SSSI)	Mild	Low Likelihood	Low Risk	Run-off controls during Site works and appropriate stockpile management and siting to prevent runoff into nearby drains and surface waters.	Very Low Risk
		Groundwater (bedrock aquifer)	Medium	Low Likelihood	Moderate/Low Risk	Discovery strategy during the earthworks phase of construction, to ensure any previously unidentified contamination is assessed and remediated as appropriate.	Low Risk
Ground Gas	Migration of ground gas and accumulation in confined spaces and asphyxiation/ explosion	Construction Workers	Severe	Unlikely	Moderate/Low Risk	Confined spaces best practice to be utilised during construction.	Low Risk
		Site end users including workers, Site visitors and maintenance workers	Severe	Unlikely	Low Risk	Information to date indicates made ground materials are predominantly granular, comprising concrete, brick and slag with limited potential for ground gas generation. Potential for gas production from estuarine/ alluvial deposits. Appropriate gas risk assessment to be undertaken following results of 2024 gas monitoring. Incorporation of gas mitigation measures as identified by risk assessment. Risk assessment will take account of the protective measures that will already be required against gas accumulation with the	Low Risk

Source	Pathway	Receptor	Consequence of Risk	Probability of Risk	Classification of Risk	Comments/ Mitigation	Post Mitigation Residual Risk
						proposed buildings and determine whether these are sufficient to protect against the risk of ground gas ingress also.	

5.6 Risk Evaluation

Based on the findings of the desk study, it is considered that there is a low likelihood of widespread significant contamination being present on the Site. Although limited previous testing on Site did not identify the presence of significantly elevated contaminants, there remains a residual risk of unrecorded contamination locally associated with spills from former industrial uses on and adjacent to the Site.

Based upon the above preliminary risk assessment, it is considered that the risks posed by contamination as part of the proposed development are generally likely to be **moderate/low to low**, with the highest risks posed to construction workers associated with any localised areas of more significant contamination, and ground gas accumulation within buildings.

The following mitigation measures should be considered in order to reduce the risks associated with contamination at the Site:

- Appropriate health and safety, environmental and quality controls will be required to mitigate risks during construction. This should include appropriate PPE, hygiene measures, dust control, sheeting of vehicles, good Site housekeeping and confined spaces best practice. In light of the residual risk of asbestos in soils, specialist advice may be needed to assess and mitigate risks in line with the requirements of the Control of Asbestos Regulations 2012.
- Visual inspection of excavations and arisings throughout the earthworks phase of the project, for evidence of any localised areas of significant contamination, such as hydrocarbons. Should such materials be encountered, specialist advice should be sought to investigate and assess the materials to identify any localised remediation works that may be required. This could include localised remediation including excavation and disposal or treatment of affected materials and verification testing.
- A record of any contamination encountered and subsequent remediation to be retained within the health and safety file for the development. It is anticipated that future maintenance works on the Site will be strictly controlled by a permitting system implemented by the operator, given the industrial nature of the development.
- Appropriate design and selection of buried concrete and water pipe construction materials, in line with BRE Special Digest 1 and UKWIR and local water authority guidance, taking into account results of verification testing and required locations and levels of pipework.

Following adoption of the above mitigation measures, it is anticipated that risks are likely to be **low to very low**. The actual level of risk, controls and mitigation measures required will be dependent on the nature and level of any contamination present, and how these are distributed in relation to the proposed layout and works at the Site.

6. Summary

6.1 Ground Conditions

Made ground is indicated to typically be between approximately 3m and 5m in thickness and predominantly comprises hydraulically placed granular fills associated with the reclamation of the area from the intertidal zone of the River Tees Estuary. The nature and distribution of made ground materials will need to be taken into account during the design of substructures and infrastructure, including the potential for both geotechnical and geo-chemical variability.

The natural drift deposits beneath the Site comprise tidal deposits overlying glacial deposits to depths typically in excess of 30mbgl. The natural drift includes significant thicknesses of normally consolidated tidal deposits. While these are predominantly granular, soft, compressible, organic materials are indicated locally. Compressible materials may be subject to consolidation settlements, particularly if ground levels are raised as part of the development. Weak materials, particularly in the near surface, will need to be taken account of during foundation design.

The tidal deposits are underlain by firm to stiff cohesive glacial deposits, which are anticipated to form a relatively low permeability layer overlying the Mercia Mudstone bedrock. The full thickness of superficial deposits has not been proven on the Site, however, rockhead is anticipated to be present at depths >30m bgl.

Shallow groundwater is anticipated, at c 2 to 3mbgl within made ground deposits. The presence of groundwater should be considered in the design of all excavations and piling. Shallow groundwater within granular deposits can lead to excavation stability, and therefore groundwater control measures should be considered. In addition, considerations should be given to minimisation of runoff from the construction Site into shallow groundwater bodies.

6.2 Unexploded Ordnance

The online Zetica risk maps [23] indicate the Site lies in an area of moderate risk for air dropped ordnance with records of two decoy sites within c.2km of the Site and a further decoy Site within c.3km of the Site. Given the lack of accuracy associated with the free-falling airborne ordnance used during WW2, it is conceivable that air dropped ordnance aimed at these targets could have fallen in close proximity to the Site.

Given the Site underwent significant post-war development, it is anticipated that unexploded ordnance at shallow depth are likely to have been removed during previous development of the Site. A UXO desk study was previously carried out at the Site on the 7th October 2024 by Zetica UXO on behalf of ConocoPhillips.

6.3 Contamination

Based on the findings of the desk study, it is considered that there is a low likelihood of widespread significant contamination being present on the Site. Although limited previous testing on Site did not identify the presence of significantly elevated contaminants, there remains a residual risk of unrecorded contamination locally associated with spills from former industrial uses on and adjacent to the Site.

Following adoption of the above mitigation measures, it is anticipated that risks are likely to be **low to very low risk**. The actual level of risk, controls and mitigation measures required will be dependent on the nature and level of any contamination present, and how these are distributed in relation to the proposed layout and works at the Site.

7. References

1. Groundsure OS 1:10000, 1:2500 & 1:1250 Site Specific Historical Mapping (Ref GS-YB2-PMF-B21-GGC) Nov, 2024.
2. Groundsure Enviro & Geo Insight Report (Ref GS-7P1-VF2-8GD-BS6) Nov, 2024.
3. 210223 R JFR2761 2021 Seal Sands IED Baseline Report
4. <https://www.thefreelibrary.com/1%2C000+years+of+industry+living+alongside+nature%3B+Seal+Sands+is+a...-a0287483631>
5. C8158-00-EE10-YD002 – Power Generation Plant Demolition and Preparation of Existing Site, Sep 1997
6. CIRIA, 2201. CIRIA C552: Contaminated land risk assessment: A guide to good practice.
7. C8158-00-EE10-YD003 – G.A. of Earthworks, Jan 1998.
8. Phillips Petroleum Cogeneration Project Seal Sands, Teeside Factual Site Investigation 1996
9. BGS Geindex Online Map Viewer.
https://mapapps2.bgs.ac.uk/geindex/home.html?_ga=2.1901937.1506206947.1732618151-1805491738.1732618151
10. Solmek Ground Investigation Draft Logs Oct, 2024.
11. Arup EIA Screening Report Ref E2P-ARU-ZZ-ZZ-RP-YE-0001, May 2024.
12. RWE Health & Safety File Seal Sands Power Station: Post-Demolition, September 2023.
13. RSK First Phase Reporting of the Site Protection and Monitoring Program, Teeside Oil Stabilisation Terminal, May 2008.
14. Keltbray Decommissioning Health & Safety File, Sept 2023.
15. Lucion Services Asbestos Demolition Survey Report Ref 530522. Aug, 2022.
16. RSK Re-evaluation of contaminant linkages at ConocoPhillips Terminal Seal Sands. Ref 321138-R01(00). Nov, 2012.
17. Kvaerner Power Generation Plant Piling Layout Overlay to Existing Site, Oct 1997.
18. Kvaerner Power Generation Plant Demolition & Preparation of Existing Site, Sept 1997.
19. Environment Agency, “Guidance: Land contamination risk assessment (LCRM),” [Online]. Available: <https://www.gov.uk/government/publications/land-contamination-risk-management-lcrm>. [Accessed 24 May 2022].
20. British Geological Survey 1:10000 Series Superficial and Bedrock Geology, Sheet NZ52NW, 2006.
21. British Geological Survey Memoir for 1:50:000 geological sheet 52. Accessed online Dec 2024.
<https://webapps.bgs.ac.uk/Memoirs/index.html?category=memoirs-england-wales>
22. C8158-00-EE10-YD005 – Power Generation Plant General Site Plan, Roads and Drainage, Sep 1997.
23. Zetica online risk map [Online]. Available: <https://zeticauxo.com/guidance/risk-maps> [accessed Dec 2024]

A.1 Groundsure Report

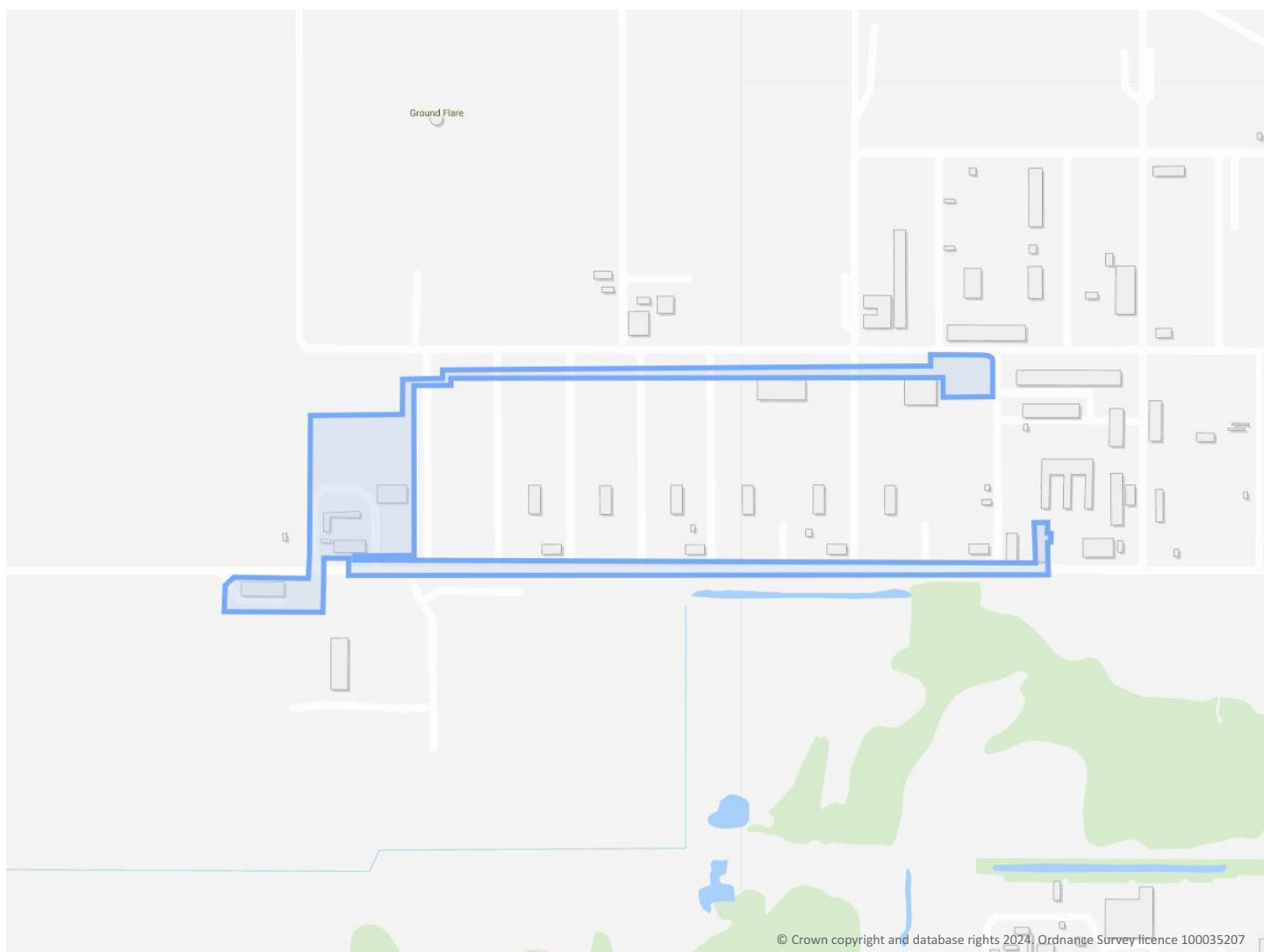
E2P_297973

Order Details

Date: 08/11/2024
Your ref: 298973
Our Ref: GS-7P1-VF2-8GD-BS6

Site Details

Location: 452865 524891
Area: 2.85 ha
Authority: [Stockton-on-Tees Borough Council](#) ↗



[Summary of findings](#)

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[Aerial image](#)

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[OS MasterMap site plan](#)

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[Insight User Guide](#) ↗

Summary of findings

Page	Section	Past land use >	On site	0-50m	50-250m	250-500m	500-2000m
15 >	1.1 >	Historical industrial land uses >	4	9	18	25	-
18 >	1.2 >	Historical tanks >	0	28	58	71	-
24 >	1.3 >	Historical energy features >	1	3	0	1	-
24	1.4	Historical petrol stations	0	0	0	0	-
24	1.5	Historical garages	0	0	0	0	-
25	1.6	Historical military land	0	0	0	0	-
Page	Section	Past land use - un-grouped >	On site	0-50m	50-250m	250-500m	500-2000m
26 >	2.1 >	Historical industrial land uses >	4	18	31	41	-
30 >	2.2 >	Historical tanks >	0	46	87	94	-
38 >	2.3 >	Historical energy features >	1	3	0	1	-
39	2.4	Historical petrol stations	0	0	0	0	-
39	2.5	Historical garages	0	0	0	0	-
Page	Section	Waste and landfill >	On site	0-50m	50-250m	250-500m	500-2000m
40	3.1	Active or recent landfill	0	0	0	0	-
40	3.2	Historical landfill (BGS records)	0	0	0	0	-
41	3.3	Historical landfill (LA/mapping records)	0	0	0	0	-
41 >	3.4 >	Historical landfill (EA/NRW records) >	1	0	1	0	-
41	3.5	Historical waste sites	0	0	0	0	-
42 >	3.6 >	Licensed waste sites >	0	0	2	2	-
43 >	3.7 >	Waste exemptions >	0	0	0	3	-
Page	Section	Current industrial land use >	On site	0-50m	50-250m	250-500m	500-2000m
44 >	4.1 >	Recent industrial land uses >	2	25	60	-	-
48	4.2	Current or recent petrol stations	0	0	0	0	-
48	4.3	Electricity cables	0	0	0	0	-
48	4.4	Gas pipelines	0	0	0	0	-
48	4.5	Sites determined as Contaminated Land	0	0	0	0	-



49	>	4.6	>	Control of Major Accident Hazards (COMAH)	>	2	0	0	8	-
50		4.7		Regulated explosive sites		0	0	0	0	-
50	>	4.8	>	Hazardous substance storage/usage	>	0	0	2	10	-
52	>	4.9	>	Historical licensed industrial activities (IPC)	>	0	0	0	40	-
57	>	4.10	>	Licensed industrial activities (Part A(1))	>	0	6	47	97	-
81		4.11		Licensed pollutant release (Part A(2)/B)		0	0	0	0	-
81	>	4.12	>	Radioactive Substance Authorisations	>	0	0	0	1	-
81	>	4.13	>	Licensed Discharges to controlled waters	>	0	2	0	0	-
82		4.14		Pollutant release to surface waters (Red List)		0	0	0	0	-
82		4.15		Pollutant release to public sewer		0	0	0	0	-
82	>	4.16	>	List 1 Dangerous Substances	>	0	0	0	1	-
82	>	4.17	>	List 2 Dangerous Substances	>	0	0	1	2	-
83	>	4.18	>	Pollution Incidents (EA/NRW)	>	0	0	1	0	-
83	>	4.19	>	Pollution inventory substances	>	0	1	0	18	-
89	>	4.20	>	Pollution inventory waste transfers	>	0	1	0	4	-
103		4.21		Pollution inventory radioactive waste		0	0	0	0	-
Page		Section		Hydrogeology	>	On site	0-50m	50-250m	250-500m	500-2000m
104	>	5.1	>	Superficial aquifer	>	Identified (within 500m)				
106	>	5.2	>	Bedrock aquifer	>	Identified (within 500m)				
108	>	5.3	>	Groundwater vulnerability	>	Identified (within 50m)				
109		5.4		Groundwater vulnerability- soluble rock risk		None (within 0m)				
110		5.5		Groundwater vulnerability- local information		None (within 0m)				
111	>	5.6	>	Groundwater abstractions	>	0	0	0	0	29
119	>	5.7	>	Surface water abstractions	>	0	0	0	0	5
120		5.8		Potable abstractions		0	0	0	0	0
121		5.9		Source Protection Zones		0	0	0	0	-
121		5.10		Source Protection Zones (confined aquifer)		0	0	0	0	-
Page		Section		Hydrology	>	On site	0-50m	50-250m	250-500m	500-2000m
122	>	6.1	>	Water Network (OS MasterMap)	>	0	2	1	-	-



123 >	6.2 >	Surface water features >	0	2	2	-	-
123 >	6.3 >	WFD Surface water body catchments >	1	-	-	-	-
124	6.4	WFD Surface water bodies	0	0	0	-	-
124 >	6.5 >	WFD Groundwater bodies >	1	-	-	-	-
Page	Section	River and coastal flooding	On site	0-50m	50-250m	250-500m	500-2000m
125	7.1	Risk of flooding from rivers and the sea	None (within 50m)				
125	7.2	Historical Flood Events	0	0	0	-	-
125	7.3	Flood Defences	0	0	0	-	-
126	7.4	Areas Benefiting from Flood Defences	0	0	0	-	-
126	7.5	Flood Storage Areas	0	0	0	-	-
127	7.6	Flood Zone 2	None (within 50m)				
127	7.7	Flood Zone 3	None (within 50m)				
Page	Section	Surface water flooding >					
128 >	8.1 >	Surface water flooding >	1 in 30 year, 0.1m - 0.3m (within 50m)				
Page	Section	Groundwater flooding >					
130 >	9.1 >	Groundwater flooding >	Low (within 50m)				
Page	Section	Environmental designations >	On site	0-50m	50-250m	250-500m	500-2000m
131 >	10.1 >	Sites of Special Scientific Interest (SSSI) >	0	0	0	1	3
132 >	10.2 >	Conserved wetland sites (Ramsar sites) >	0	0	0	1	6
133	10.3	Special Areas of Conservation (SAC)	0	0	0	0	0
134 >	10.4 >	Special Protection Areas (SPA) >	0	0	0	1	8
136 >	10.5 >	National Nature Reserves (NNR) >	0	0	0	1	2
136	10.6	Local Nature Reserves (LNR)	0	0	0	0	0
136	10.7	Designated Ancient Woodland	0	0	0	0	0
136	10.8	Biosphere Reserves	0	0	0	0	0
137	10.9	Forest Parks	0	0	0	0	0
137	10.10	Marine Conservation Zones	0	0	0	0	0
137	10.11	Green Belt	0	0	0	0	0
137 >	10.12 >	Proposed Ramsar sites >	0	0	0	1	9



138	10.13	Possible Special Areas of Conservation (pSAC)	0	0	0	0	0
138	10.14	Potential Special Protection Areas (pSPA)	0	0	0	0	0
138	10.15	Nitrate Sensitive Areas	0	0	0	0	0
139	10.16	Nitrate Vulnerable Zones	0	0	0	0	0
140 >	10.17 >	SSSI Impact Risk Zones >	2	-	-	-	-
142 >	10.18 >	SSSI Units >	0	0	0	2	16
Page	Section	Visual and cultural designations	On site	0-50m	50-250m	250-500m	500-2000m
153	11.1	World Heritage Sites	0	0	0	-	-
153	11.2	Area of Outstanding Natural Beauty	0	0	0	-	-
153	11.3	National Parks	0	0	0	-	-
153	11.4	Listed Buildings	0	0	0	-	-
154	11.5	Conservation Areas	0	0	0	-	-
154	11.6	Scheduled Ancient Monuments	0	0	0	-	-
154	11.7	Registered Parks and Gardens	0	0	0	-	-
Page	Section	Agricultural designations >	On site	0-50m	50-250m	250-500m	500-2000m
155 >	12.1 >	Agricultural Land Classification >	Urban (within 250m)				
156	12.2	Open Access Land	0	0	0	-	-
156	12.3	Tree Felling Licences	0	0	0	-	-
156	12.4	Environmental Stewardship Schemes	0	0	0	-	-
156	12.5	Countryside Stewardship Schemes	0	0	0	-	-
Page	Section	Habitat designations >	On site	0-50m	50-250m	250-500m	500-2000m
157	13.1	Priority Habitat Inventory	0	0	0	-	-
157	13.2	Habitat Networks	0	0	0	-	-
158 >	13.3 >	Open Mosaic Habitat >	1	0	0	-	-
158	13.4	Limestone Pavement Orders	0	0	0	-	-
Page	Section	Geology 1:10,000 scale >	On site	0-50m	50-250m	250-500m	500-2000m
159 >	14.1 >	10k Availability >	Identified (within 500m)				
160 >	14.2 >	Artificial and made ground (10k) >	2	0	0	0	-
161 >	14.3 >	Superficial geology (10k) >	2	0	0	1	-



162	14.4	Landslip (10k)	0	0	0	0	-
163 >	14.5 >	Bedrock geology (10k) >	2	0	0	1	-
164	14.6	Bedrock faults and other linear features (10k)	0	0	0	0	-
Page	Section	Geology 1:50,000 scale >	On site	0-50m	50-250m	250-500m	500-2000m
165 >	15.1 >	50k Availability >	Identified (within 500m)				
166 >	15.2 >	Artificial and made ground (50k) >	1	0	0	0	-
167 >	15.3 >	Artificial ground permeability (50k) >	2	0	-	-	-
168 >	15.4 >	Superficial geology (50k) >	1	0	0	0	-
169 >	15.5 >	Superficial permeability (50k) >	Identified (within 50m)				
169	15.6	Landslip (50k)	0	0	0	0	-
169	15.7	Landslip permeability (50k)	None (within 50m)				
170 >	15.8 >	Bedrock geology (50k) >	1	0	0	1	-
171 >	15.9 >	Bedrock permeability (50k) >	Identified (within 50m)				
171	15.10	Bedrock faults and other linear features (50k)	0	0	0	0	-
Page	Section	Boreholes >	On site	0-50m	50-250m	250-500m	500-2000m
172 >	16.1 >	BGS Boreholes >	0	4	21	-	-
Page	Section	Natural ground subsidence >					
174 >	17.1 >	Shrink swell clays >	Very low (within 50m)				
175 >	17.2 >	Running sands >	Very low (within 50m)				
176 >	17.3 >	Compressible deposits >	Very low (within 50m)				
177 >	17.4 >	Collapsible deposits >	Negligible (within 50m)				
178 >	17.5 >	Landslides >	Very low (within 50m)				
179 >	17.6 >	Ground dissolution of soluble rocks >	Negligible (within 50m)				
Page	Section	Mining and ground workings >	On site	0-50m	50-250m	250-500m	500-2000m
181	18.1	BritPits	0	0	0	0	-
182 >	18.2 >	Surface ground workings >	0	0	2	-	-
182	18.3	Underground workings	0	0	0	0	0
182	18.4	Underground mining extents	0	0	0	0	-
182	18.5	Historical Mineral Planning Areas	0	0	0	0	-

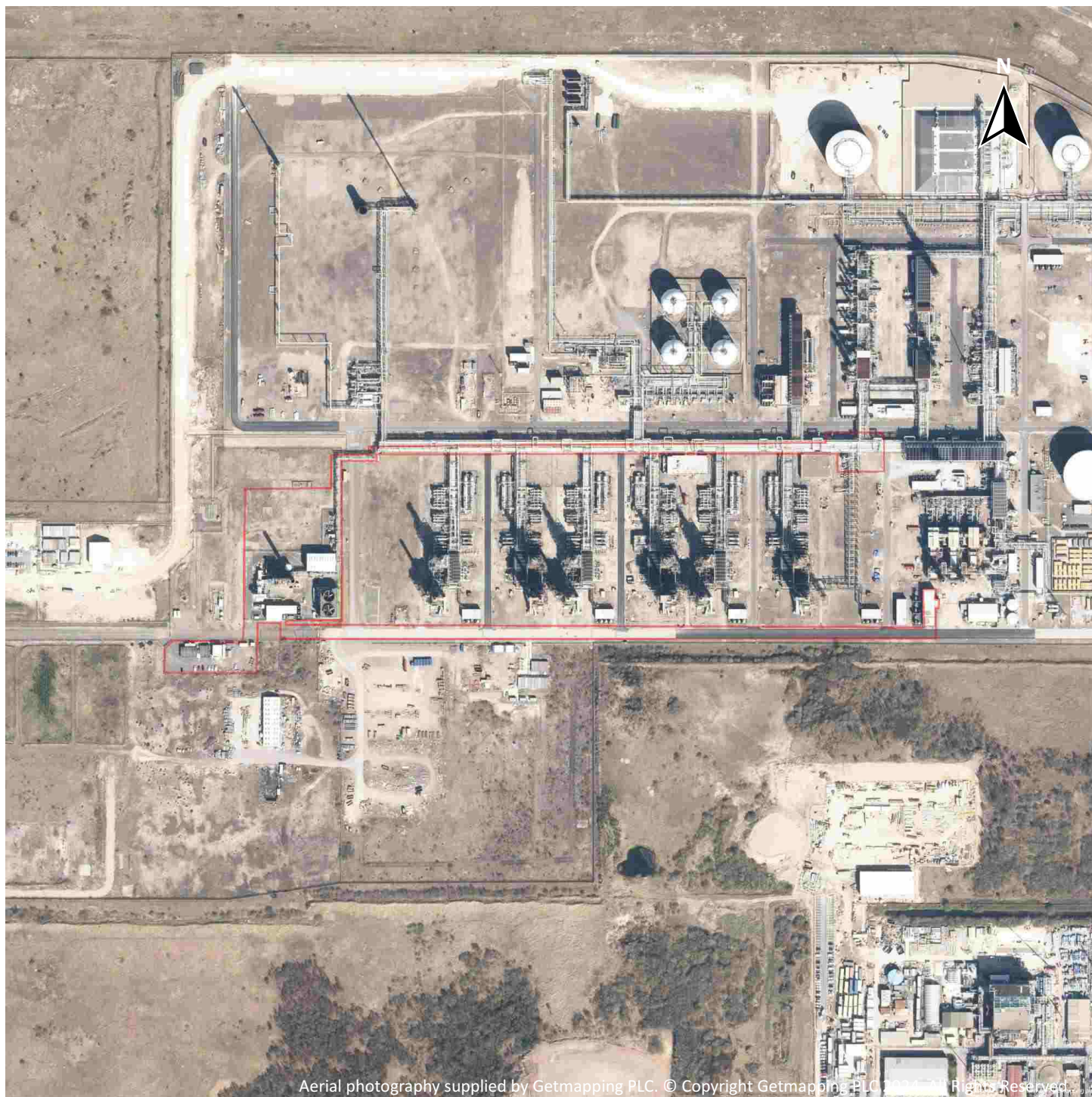


183 >	18.6 >	Non-coal mining >	0	0	0	0	2
183	18.7	JPB mining areas	None (within 0m)				
183	18.8	The Coal Authority non-coal mining	0	0	0	0	-
184	18.9	Researched mining	0	0	0	0	-
184	18.10	Mining record office plans	0	0	0	0	-
184	18.11	BGS mine plans	0	0	0	0	-
184	18.12	Coal mining	None (within 0m)				
184	18.13	Brine areas	None (within 0m)				
185	18.14	Gypsum areas	None (within 0m)				
185	18.15	Tin mining	None (within 0m)				
185	18.16	Clay mining	None (within 0m)				
Page	Section	Ground cavities and sinkholes	On site	0-50m	50-250m	250-500m	500-2000m
186	19.1	Natural cavities	0	0	0	0	-
186	19.2	Mining cavities	0	0	0	0	0
186	19.3	Reported recent incidents	0	0	0	0	-
186	19.4	Historical incidents	0	0	0	0	-
187	19.5	National karst database	0	0	0	0	-
Page	Section	Radon >					
188 >	20.1 >	Radon >	Less than 1% (within 0m)				
Page	Section	Soil chemistry >	On site	0-50m	50-250m	250-500m	500-2000m
190 >	21.1 >	BGS Estimated Background Soil Chemistry >	9	0	-	-	-
191	21.2	BGS Estimated Urban Soil Chemistry	0	0	-	-	-
191	21.3	BGS Measured Urban Soil Chemistry	0	0	-	-	-
Page	Section	Railway infrastructure and projects	On site	0-50m	50-250m	250-500m	500-2000m
192	22.1	Underground railways (London)	0	0	0	-	-
192	22.2	Underground railways (Non-London)	0	0	0	-	-
192	22.3	Railway tunnels	0	0	0	-	-
192	22.4	Historical railway and tunnel features	0	0	0	-	-
192	22.5	Royal Mail tunnels	0	0	0	-	-



193	22.6	Historical railways	0	0	0	-	-
193	22.7	Railways	0	0	0	-	-
193	22.8	Crossrail 2	0	0	0	0	-
193	22.9	HS2	0	0	0	0	-

Recent aerial photograph



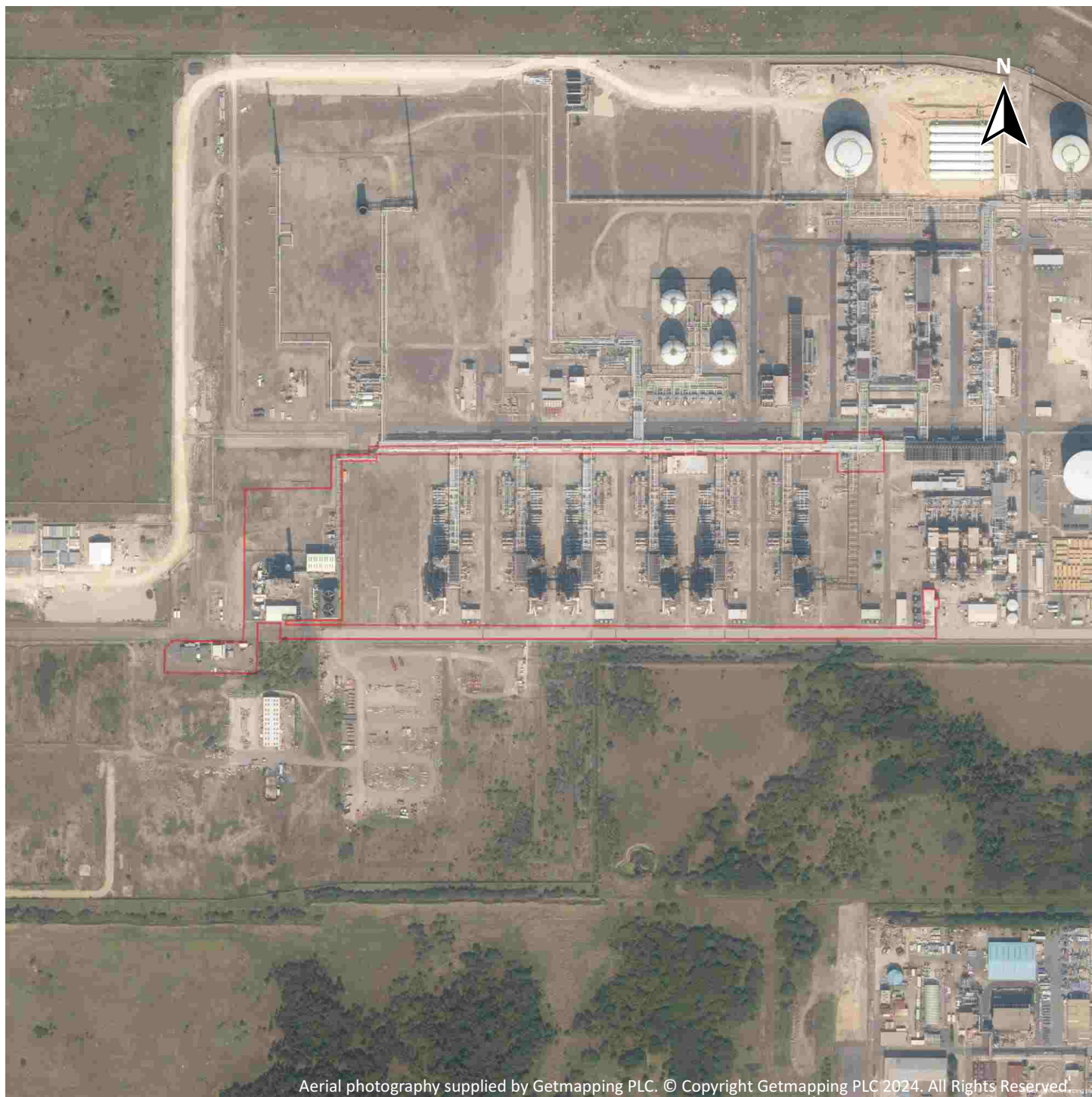
Aerial photography supplied by Getmapping PLC. © Copyright Getmapping PLC. All Rights Reserved.

Capture Date: 19/04/2021

Site Area: 2.85ha



Recent site history - 2019 aerial photograph



Capture Date: 26/08/2019

Site Area: 2.85ha



Recent site history - 2015 aerial photograph



Capture Date: 08/10/2015

Site Area: 2.85ha



Recent site history - 2007 aerial photograph



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Capture Date: 07/09/2007

Site Area: 2.85ha



Recent site history - 1999 aerial photograph



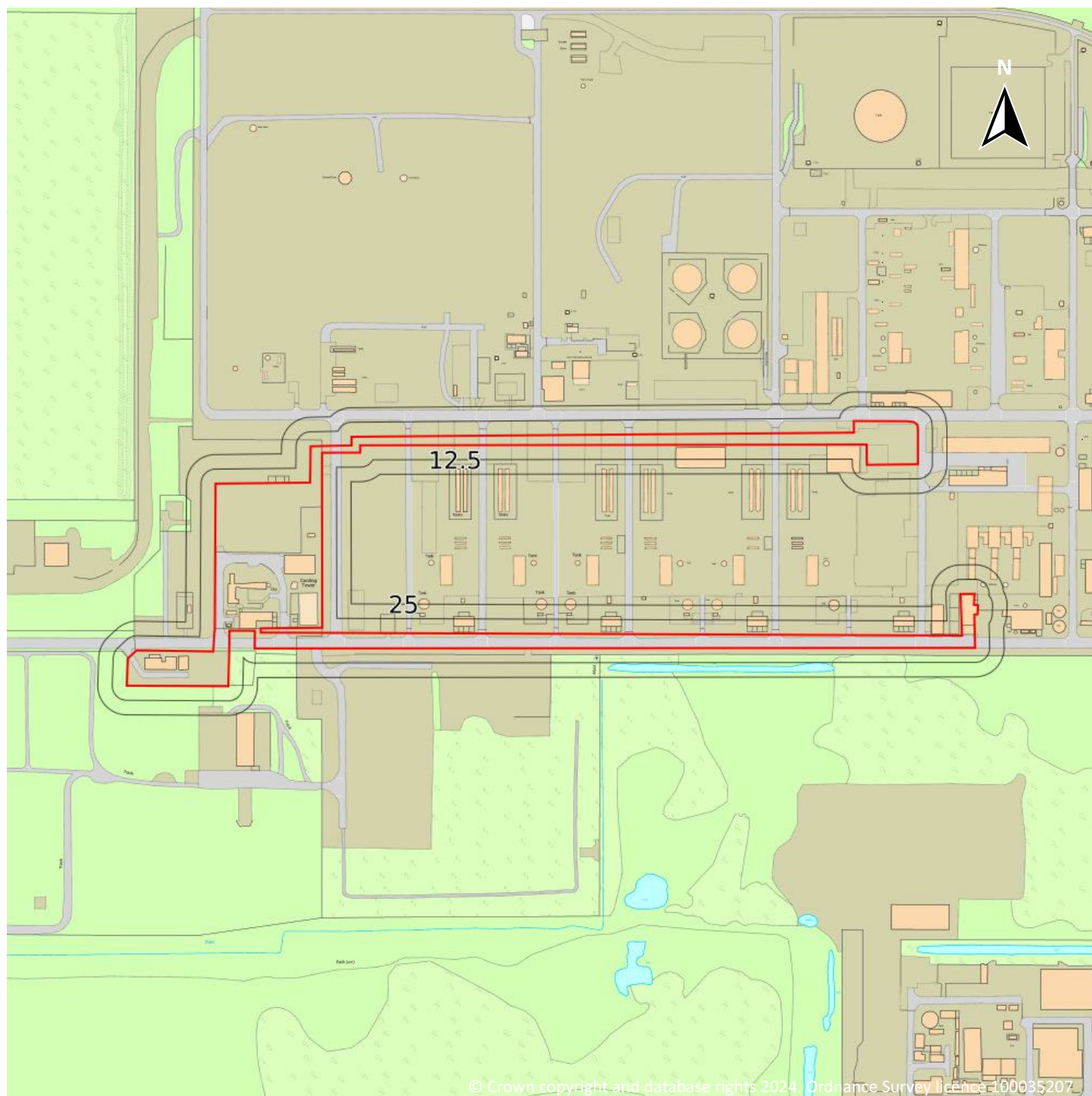
Aerial photography supplied by Getmapping PLC. © Copyright Getmapping PLC 2024. All Rights Reserved.

Capture Date: 10/09/1999

Site Area: 2.85ha



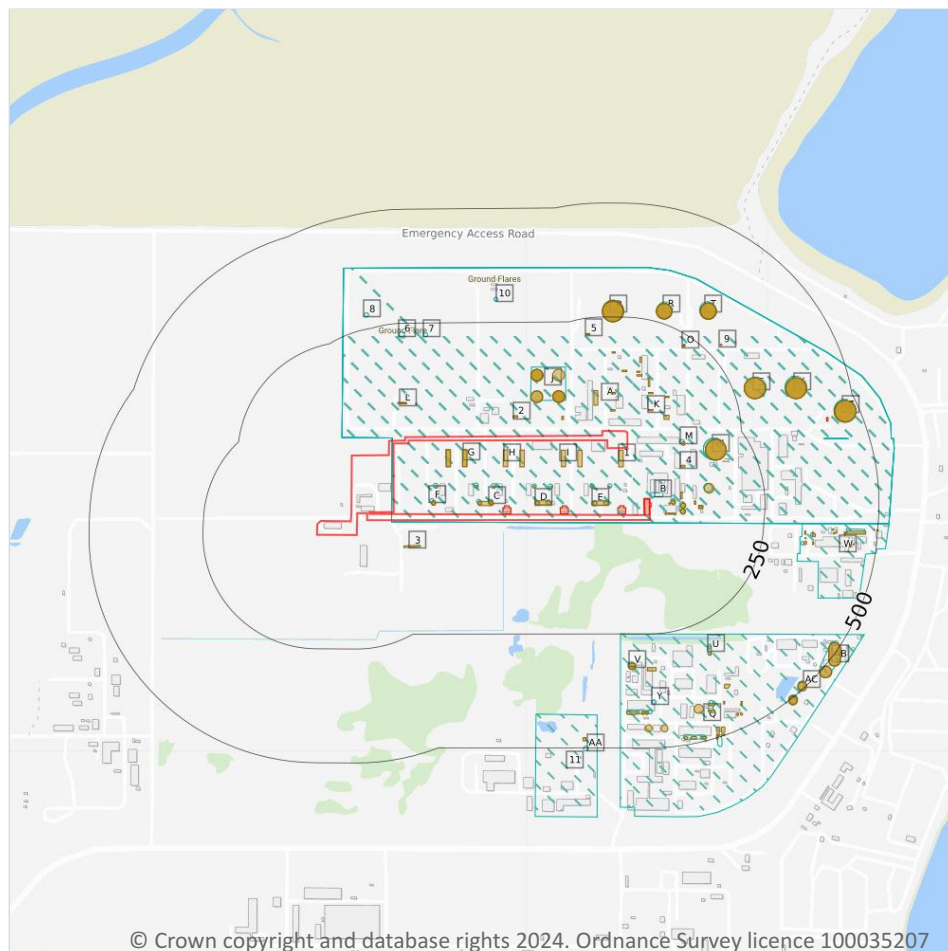
OS MasterMap site plan



Site Area: 2.85ha



1 Past land use



- Site Outline
- Search buffers in metres (m)
- Historical industrial land uses
- Historical tanks
- Historical energy features

1.1 Historical industrial land uses

Records within 500m

56

Potentially contaminative land use features digitised from historical Ordnance Survey mapping at 1:10,000 and 1:10,560 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use map on [page 15 >](#)

ID	Location	Land use	Dates present	Group ID
A	On site	Oil Refinery	1994	1361202



ID	Location	Land use	Dates present	Group ID
A	On site	Oil Refinery	1992	1361203
A	On site	Oil Refinery	1981	1361242
A	On site	Oil Refinery	1988	1361243
B	7m E	Chimneys	1988 - 1992	1419695
E	20m E	Unspecified Tanks	1988 - 1992	1425029
D	21m E	Unspecified Tanks	1988 - 1992	1397158
D	21m E	Unspecified Tanks	1988 - 1992	1403705
E	22m E	Unspecified Tanks	1988 - 1992	1427321
C	23m E	Unspecified Tanks	1988 - 1992	1383891
C	24m SE	Unspecified Tanks	1988 - 1992	1388455
F	25m SW	Unspecified Tanks	1988 - 1992	1398216
B	44m E	Unspecified Tanks	1988 - 1992	1374837
F	57m W	Unspecified Tanks	1988 - 1992	1400634
C	57m E	Unspecified Tanks	1988 - 1992	1381274
D	58m E	Unspecified Tanks	1988 - 1992	1405213
C	58m E	Unspecified Tanks	1988 - 1992	1395548
D	58m E	Unspecified Tanks	1988 - 1992	1426402
E	58m E	Unspecified Tanks	1988 - 1992	1402887
E	59m E	Unspecified Tanks	1988 - 1992	1363162
B	63m E	Unspecified Tanks	1988 - 1992	1405032
J	78m NE	Unspecified Tanks	1981 - 1994	1407746
M	115m E	Unspecified Tank	1988 - 1992	1405964
B	121m E	Unspecified Tanks	1992	1335592
B	121m E	Unspecified Tank	1988	1354450
N	155m E	Unspecified Tanks	1992	1335196
N	155m E	Unspecified Tank	1988	1352995
6	219m N	Unspecified Tank	1994	1354446
7	220m N	Unspecified Tank	1981 - 1994	1373727



ID	Location	Land use	Dates present	Group ID
P	243m NE	Unspecified Tank	1981 - 1994	1364336
Q	250m SE	Unspecified Works	1988 - 1992	1367813
R	264m NE	Unspecified Tank	1981 - 1994	1362633
S	274m E	Unspecified Tank	1981 - 1994	1421809
8	276m NW	Unspecified Tank	1981 - 1994	1423977
10	297m N	Chimney	1981 - 1994	1370078
U	302m SE	Unspecified Tanks	1988 - 1992	1417489
T	303m NE	Unspecified Tank	1981 - 1994	1377492
V	312m SE	Unspecified Tanks	1988 - 1992	1412406
W	331m E	Unspecified Works	1988 - 1992	1424929
W	335m E	Unspecified Tank	1992	1354447
W	354m E	Unspecified Tank	1992	1354448
X	359m E	Unspecified Tank	1981 - 1994	1415125
Y	395m SE	Chimney	1988 - 1992	1387588
Y	416m SE	Unspecified Tanks	1988 - 1992	1371917
Q	418m SE	Unspecified Tanks	1988 - 1992	1384101
11	426m SE	Unspecified Works	1992	1345620
W	431m E	Unspecified Tanks	1992	1335591
Z	446m E	Unspecified Tank	1981 - 1994	1381201
Q	477m SE	Unspecified Tanks	1988 - 1992	1362061
AB	480m E	Unspecified Tanks	1988 - 1992	1396559
AC	484m SE	Unspecified Tanks	1992	1335593
AC	484m SE	Unspecified Tank	1988	1354452
AC	494m SE	Unspecified Tanks	1992	1335594
AC	494m SE	Unspecified Tank	1988	1354451
AA	496m SE	Unspecified Tank	1992	1354449
Q	497m SE	Unspecified Tanks	1988 - 1992	1381154

This data is sourced from Ordnance Survey / Groundsure.



1.2 Historical tanks

Records within 500m
157

Tank features digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original ungrouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use map on [page 15 >](#)

ID	Location	Land use	Dates present	Group ID
1	5m E	Tanks	1989 - 1993	223255
C	19m SE	Tanks	1994 - 1997	226691
F	19m SW	Unspecified Tank	1994 - 1997	227134
G	20m NE	Tanks	1994 - 1997	230193
G	20m N	Tanks	1994 - 1997	225442
E	20m E	Tanks	1993	217186
F	21m SW	Unspecified Tank	1988	217271
G	21m N	Tanks	1988	221851
G	21m NE	Tanks	1988	219947
C	21m SE	Tanks	1988	221600
C	21m E	Tanks	1988	232851
D	21m E	Tanks	1993	223262
H	21m NE	Tanks	1989 - 1993	229938
E	21m E	Tanks	1993	218372
D	21m E	Tanks	1993	219421
E	21m E	Tanks	1989	230300
H	21m NE	Tanks	1989 - 1993	227346
D	21m E	Tanks	1989	227560
I	21m E	Tanks	1989 - 1993	227446
I	22m E	Tanks	1989 - 1993	220436
B	34m E	Unspecified Tank	1978 - 1993	222239



ID	Location	Land use	Dates present	Group ID
J	36m NE	Unspecified Tank	1980 - 1993	231713
B	39m E	Unspecified Tank	1993	211435
B	40m E	Tanks	1993	214660
2	41m NE	Unspecified Tank	1980 - 1993	223623
A	44m NE	Unspecified Tank	1993	211456
B	44m E	Unspecified Tank	1989 - 1993	216654
B	44m E	Unspecified Tank	1978	229781
B	53m E	Tanks	1993	214661
3	55m S	Unspecified Tank	1994 - 1997	218259
A	57m NE	Unspecified Tank	1993	211452
F	58m W	Unspecified Tank	1988 - 1997	231601
C	58m E	Tanks	1988 - 1997	227981
C	58m E	Tanks	1988 - 1997	222116
D	58m E	Unspecified Tank	1989 - 1993	224136
D	58m E	Unspecified Tank	1989 - 1993	228733
E	59m E	Unspecified Tank	1989 - 1993	220665
E	59m E	Unspecified Tank	1989 - 1993	216930
B	65m E	Unspecified Tank	1978	218083
B	65m E	Unspecified Tank	1989 - 1993	217353
B	66m E	Unspecified Tank	1989 - 1993	220158
B	66m E	Unspecified Tank	1978	223368
B	66m E	Unspecified Tank	1989 - 1993	216601
K	66m E	Unspecified Tank	1993	210952
L	73m NW	Unspecified Tank	1993	226695
J	73m NE	Unspecified Tank	1980	227015
L	73m NW	Unspecified Tank	1988	219696
J	73m NE	Unspecified Tank	1980 - 1993	218546
J	73m NE	Unspecified Tank	1988	224290



ID	Location	Land use	Dates present	Group ID
J	74m NE	Unspecified Tank	1980	223775
L	74m NW	Unspecified Tank	1981	221342
J	74m NE	Unspecified Tank	1993	223563
J	74m NE	Unspecified Tank	1980	233289
A	82m NE	Unspecified Tank	1993	211455
K	86m E	Tanks	1993	214407
B	95m E	Tanks	1978 - 1993	228567
K	97m NE	Unspecified Tank	1993	211454
4	98m E	Tanks	1989 - 1993	229125
B	105m E	Tanks	1978	221862
B	105m E	Tanks	1993	220117
B	105m E	Tanks	1989	230589
K	110m NE	Unspecified Tank	1993	211453
K	113m E	Unspecified Tank	1993	211457
M	119m E	Unspecified Tank	1989 - 1993	221703
J	120m NE	Unspecified Tank	1988	229554
B	121m E	Unspecified Tank	1978 - 1993	225822
J	121m NE	Unspecified Tank	1980 - 1993	228774
J	121m NE	Unspecified Tank	1980	220144
J	121m NE	Unspecified Tank	1993	232481
J	122m NE	Unspecified Tank	1980	218700
K	124m NE	Tanks	1993	214410
K	131m NE	Tanks	1993	214408
K	132m NE	Tanks	1993	214409
K	154m NE	Tanks	1993	214411
N	158m E	Unspecified Tank	1978	221171
N	158m E	Unspecified Tank	1993	231855
N	158m E	Unspecified Tank	1989	225210



ID	Location	Land use	Dates present	Group ID
K	171m NE	Unspecified Tank	1993	210953
5	213m NE	Unspecified Tank	1980 - 1993	228862
O	225m NE	Unspecified Tank	1980	230048
O	226m NE	Unspecified Tank	1993	217493
O	226m NE	Unspecified Tank	1988	228791
P	240m NE	Unspecified Tank	1988	224591
P	240m NE	Unspecified Tank	1980	217364
P	240m NE	Unspecified Tank	1993	223363
P	240m NE	Unspecified Tank	1980	225202
R	259m NE	Unspecified Tank	1980	219758
R	260m NE	Unspecified Tank	1988	228419
R	260m NE	Unspecified Tank	1980	218462
R	260m NE	Unspecified Tank	1993	224760
S	273m E	Unspecified Tank	1993	228055
S	273m E	Unspecified Tank	1980	224082
S	273m E	Unspecified Tank	1984 - 1988	225447
9	280m NE	Unspecified Tank	1980 - 1988	224970
T	302m NE	Unspecified Tank	1980	222593
T	302m NE	Unspecified Tank	1988	225471
T	303m NE	Unspecified Tank	1993	223375
T	303m NE	Unspecified Tank	1980	232528
U	306m SE	Unspecified Tank	1978	211448
V	314m SE	Unspecified Tank	1978 - 1979	222471
V	314m SE	Unspecified Tank	1993	228259
U	319m SE	Unspecified Tank	1978	211449
V	321m SE	Unspecified Tank	1997	230519
V	321m SE	Unspecified Tank	1989	219323
V	324m SE	Tanks	1979 - 1989	219831



ID	Location	Land use	Dates present	Group ID
W	341m E	Unspecified Tank	1994	211441
W	341m E	Tanks	1994	214664
W	343m E	Unspecified Tank	1994	211443
W	357m E	Tanks	1994	214663
X	360m E	Unspecified Tank	1993	231438
X	360m E	Unspecified Tank	1988	222676
W	360m E	Unspecified Tank	1994	211442
X	360m E	Unspecified Tank	1980	217821
X	361m E	Unspecified Tank	1984	221513
Q	396m SE	Tanks	1997	213498
W	401m E	Tanks	1994	214665
W	403m E	Tanks	1994	214666
Q	418m SE	Unspecified Tank	1989 - 1997	229067
Y	419m SE	Tanks	1979 - 1989	222044
Y	420m SE	Unspecified Tank	1979	211450
Y	420m SE	Tanks	1989	214667
Q	423m SE	Tanks	1979 - 1989	225074
W	427m E	Unspecified Tank	1984 - 1989	221570
W	429m E	Unspecified Tank	1994	222247
Q	430m SE	Tanks	1997	213499
W	432m E	Tanks	1994	214662
Q	437m SE	Tanks	1979 - 1989	221526
W	442m E	Unspecified Tank	1994	211444
Q	446m SE	Unspecified Tank	1997	208757
Z	446m E	Unspecified Tank	1988	218886
Z	446m E	Unspecified Tank	1993	232663
Z	447m E	Unspecified Tank	1980	222039
Z	447m E	Unspecified Tank	1984	217422



ID	Location	Land use	Dates present	Group ID
W	449m E	Unspecified Tank	1994	211445
Y	449m SE	Unspecified Tank	1989 - 1997	229058
Y	450m SE	Unspecified Tank	1989 - 1997	218411
Q	464m SE	Tanks	1997	213488
Q	467m SE	Unspecified Tank	1989 - 1997	227685
AA	477m SE	Tanks	1997	213491
Q	477m SE	Tanks	1997	213500
Q	481m SE	Tanks	1997	213494
AB	481m E	Tanks	1984 - 1994	230523
Q	481m SE	Unspecified Tank	1979 - 1989	232577
AB	481m E	Tanks	1979	230548
Q	484m SE	Tanks	1979 - 1989	221438
AC	485m SE	Unspecified Tank	1984 - 1997	224842
AC	486m SE	Unspecified Tank	1979	229377
Q	489m SE	Tanks	1979 - 1989	219950
W	491m E	Unspecified Tank	1994	211447
Q	492m SE	Tanks	1997	213495
AC	495m SE	Unspecified Tank	1997	218590
Q	495m SE	Tanks	1997	213496
AC	497m SE	Unspecified Tank	1984 - 1989	224002
AC	497m SE	Unspecified Tank	1979	228410
AB	497m SE	Unspecified Tank	1984 - 1997	231771
AB	498m SE	Unspecified Tank	1979	225164
W	498m E	Unspecified Tank	1994	211446

This data is sourced from Ordnance Survey / Groundsure.



1.3 Historical energy features

Records within 500m

5

Energy features digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original ungrouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use map on [page 15 >](#)

ID	Location	Land use	Dates present	Group ID
B	On site	Electricity Substation	1978	128344
C	1m SE	Electricity Substation	1978	127398
D	2m E	Electricity Substation	1978	128346
E	3m E	Electricity Substation	1978	128345
Z	424m E	Electricity Substation	1980	128347

This data is sourced from Ordnance Survey / Groundsure.

1.4 Historical petrol stations

Records within 500m

0

Petrol stations digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original ungrouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

This data is sourced from Ordnance Survey / Groundsure.

1.5 Historical garages

Records within 500m

0

Garages digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original ungrouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

This data is sourced from Ordnance Survey / Groundsure.



1.6 Historical military land

Records within 500m

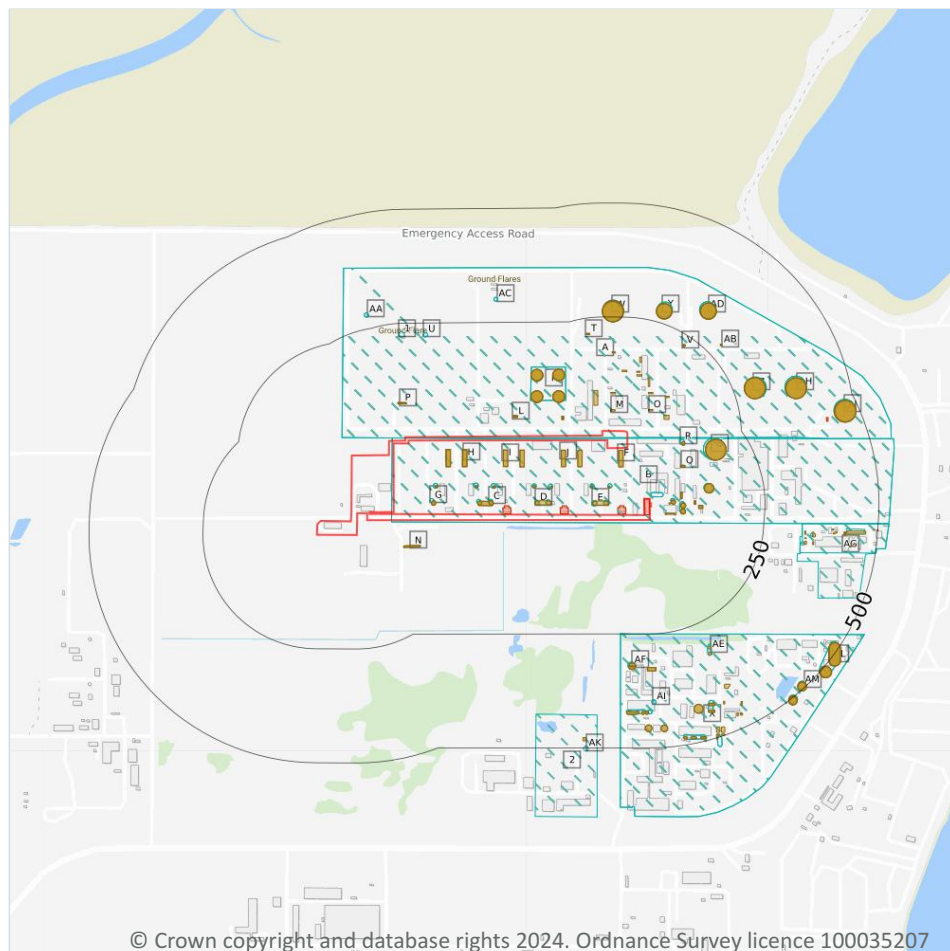
0

Areas of military land digitised from multiple sources including the National Archives, local records, MOD records and verified other sources, intelligently grouped into contiguous features.

This data is sourced from Ordnance Survey / Groundsure / other sources.



2 Past land use - un-grouped



- Site Outline
- Search buffers in metres (m)
- Historical industrial land uses
- Historical tanks
- Historical energy features

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2.1 Historical industrial land uses

Records within 500m

94

Potentially contaminative land use features digitised from historical Ordnance Survey mapping at 1:10,000 and 10,560 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use - un-grouped map on [page 26](#) >

ID	Location	Land Use	Date	Group ID
A	On site	Oil Refinery	1994	1361202
A	On site	Oil Refinery	1981	1361242
B	On site	Oil Refinery	1992	1361203



ID	Location	Land Use	Date	Group ID
B	On site	Oil Refinery	1988	1361243
B	7m E	Chimneys	1992	1419695
B	7m E	Chimneys	1988	1419695
E	20m E	Unspecified Tanks	1992	1425029
E	20m E	Unspecified Tanks	1988	1425029
D	21m E	Unspecified Tanks	1992	1397158
D	21m E	Unspecified Tanks	1988	1397158
D	21m E	Unspecified Tanks	1992	1403705
D	21m E	Unspecified Tanks	1988	1403705
E	22m E	Unspecified Tanks	1992	1427321
E	22m E	Unspecified Tanks	1988	1427321
C	23m E	Unspecified Tanks	1992	1383891
C	23m E	Unspecified Tanks	1988	1383891
C	24m SE	Unspecified Tanks	1992	1388455
C	24m SE	Unspecified Tanks	1988	1388455
G	25m SW	Unspecified Tanks	1992	1398216
G	25m SW	Unspecified Tanks	1988	1398216
B	44m E	Unspecified Tanks	1992	1374837
B	44m E	Unspecified Tanks	1988	1374837
G	57m W	Unspecified Tanks	1992	1400634
G	57m W	Unspecified Tanks	1988	1400634
C	57m E	Unspecified Tanks	1992	1381274
C	57m E	Unspecified Tanks	1988	1381274
D	58m E	Unspecified Tanks	1992	1405213
D	58m E	Unspecified Tanks	1988	1405213
C	58m E	Unspecified Tanks	1992	1395548
C	58m E	Unspecified Tanks	1988	1395548
D	58m E	Unspecified Tanks	1992	1426402



ID	Location	Land Use	Date	Group ID
D	58m E	Unspecified Tanks	1988	1426402
E	58m E	Unspecified Tanks	1992	1402887
E	58m E	Unspecified Tanks	1988	1402887
E	59m E	Unspecified Tanks	1992	1363162
E	59m E	Unspecified Tanks	1988	1363162
B	63m E	Unspecified Tanks	1992	1405032
B	63m E	Unspecified Tanks	1988	1405032
K	78m NE	Unspecified Tanks	1994	1407746
K	78m NE	Unspecified Tanks	1981	1407746
R	115m E	Unspecified Tank	1992	1405964
R	115m E	Unspecified Tank	1988	1405964
B	121m E	Unspecified Tanks	1992	1335592
B	121m E	Unspecified Tank	1988	1354450
S	155m E	Unspecified Tanks	1992	1335196
S	155m E	Unspecified Tank	1988	1352995
1	219m N	Unspecified Tank	1994	1354446
U	220m N	Unspecified Tank	1994	1373727
U	220m N	Unspecified Tank	1981	1373727
W	243m NE	Unspecified Tank	1994	1364336
W	243m NE	Unspecified Tank	1981	1364336
X	250m SE	Unspecified Works	1992	1367813
X	250m SE	Unspecified Works	1988	1367813
Y	264m NE	Unspecified Tank	1994	1362633
Y	264m NE	Unspecified Tank	1981	1362633
Z	274m E	Unspecified Tank	1994	1421809
Z	274m E	Unspecified Tank	1981	1421809
AA	276m NW	Unspecified Tank	1994	1423977
AA	276m NW	Unspecified Tank	1981	1423977



ID	Location	Land Use	Date	Group ID
AC	297m N	Chimney	1994	1370078
AC	297m N	Chimney	1981	1370078
AE	302m SE	Unspecified Tanks	1992	1417489
AE	302m SE	Unspecified Tanks	1988	1417489
AD	303m NE	Unspecified Tank	1994	1377492
AD	303m NE	Unspecified Tank	1981	1377492
AF	312m SE	Unspecified Tanks	1992	1412406
AF	312m SE	Unspecified Tanks	1988	1412406
AG	331m E	Unspecified Works	1992	1424929
AG	334m E	Unspecified Works	1988	1424929
AG	335m E	Unspecified Tank	1992	1354447
AG	354m E	Unspecified Tank	1992	1354448
AH	359m E	Unspecified Tank	1994	1415125
AH	359m E	Unspecified Tank	1981	1415125
AI	395m SE	Chimney	1992	1387588
AI	395m SE	Chimney	1988	1387588
AI	416m SE	Unspecified Tanks	1992	1371917
AI	416m SE	Unspecified Tanks	1988	1371917
X	418m SE	Unspecified Tanks	1992	1384101
X	418m SE	Unspecified Tanks	1988	1384101
2	426m SE	Unspecified Works	1992	1345620
AG	431m E	Unspecified Tanks	1992	1335591
AJ	446m E	Unspecified Tank	1994	1381201
AJ	446m E	Unspecified Tank	1981	1381201
X	477m SE	Unspecified Tanks	1992	1362061
X	477m SE	Unspecified Tanks	1988	1362061
AL	480m E	Unspecified Tanks	1992	1396559
AL	480m E	Unspecified Tanks	1988	1396559



ID	Location	Land Use	Date	Group ID
AM	484m SE	Unspecified Tanks	1992	1335593
AM	484m SE	Unspecified Tank	1988	1354452
AM	494m SE	Unspecified Tanks	1992	1335594
AM	494m SE	Unspecified Tank	1988	1354451
AK	496m SE	Unspecified Tank	1992	1354449
X	497m SE	Unspecified Tanks	1992	1381154
X	497m SE	Unspecified Tanks	1988	1381154

This data is sourced from Ordnance Survey / Groundsure.

2.2 Historical tanks

Records within 500m

227

Tank features digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use - un-grouped map on [page 26](#) >

ID	Location	Land Use	Date	Group ID
F	5m E	Tanks	1993	223255
F	5m E	Tanks	1989	223255
C	19m SE	Tanks	1994	226691
C	19m SE	Tanks	1997	226691
G	19m SW	Unspecified Tank	1994	227134
G	19m SW	Unspecified Tank	1997	227134
H	20m NE	Tanks	1994	230193
H	20m NE	Tanks	1997	230193
H	20m N	Tanks	1994	225442
H	20m N	Tanks	1997	225442
E	20m E	Tanks	1993	217186
G	21m SW	Unspecified Tank	1988	217271
H	21m N	Tanks	1988	221851



ID	Location	Land Use	Date	Group ID
H	21m NE	Tanks	1988	219947
C	21m SE	Tanks	1988	221600
C	21m E	Tanks	1988	232851
D	21m E	Tanks	1993	223262
I	21m NE	Tanks	1993	229938
E	21m E	Tanks	1993	218372
I	21m NE	Tanks	1989	229938
D	21m E	Tanks	1993	219421
E	21m E	Tanks	1989	230300
I	21m NE	Tanks	1989	227346
D	21m E	Tanks	1989	227560
J	21m E	Tanks	1989	227446
I	22m NE	Tanks	1993	227346
J	22m E	Tanks	1989	220436
J	22m E	Tanks	1993	227446
J	22m E	Tanks	1993	220436
B	34m E	Unspecified Tank	1993	222239
B	35m E	Unspecified Tank	1978	222239
B	35m E	Unspecified Tank	1989	222239
K	36m NE	Unspecified Tank	1988	231713
K	36m NE	Unspecified Tank	1993	231713
K	36m NE	Unspecified Tank	1980	231713
K	36m NE	Unspecified Tank	1980	231713
B	39m E	Unspecified Tank	1993	211435
B	40m E	Tanks	1993	214660
L	41m NE	Unspecified Tank	1988	223623
L	42m NE	Unspecified Tank	1980	223623
L	42m NE	Unspecified Tank	1993	223623



ID	Location	Land Use	Date	Group ID
L	42m NE	Unspecified Tank	1980	223623
M	44m NE	Unspecified Tank	1993	211456
B	44m E	Unspecified Tank	1993	216654
B	44m E	Unspecified Tank	1978	229781
B	45m E	Unspecified Tank	1989	216654
B	53m E	Tanks	1993	214661
N	55m S	Unspecified Tank	1994	218259
N	55m S	Unspecified Tank	1997	218259
M	57m NE	Unspecified Tank	1993	211452
G	58m W	Unspecified Tank	1988	231601
G	58m W	Unspecified Tank	1994	231601
G	58m W	Unspecified Tank	1997	231601
C	58m E	Tanks	1994	227981
C	58m E	Tanks	1997	227981
C	58m E	Tanks	1994	222116
C	58m E	Tanks	1997	222116
D	58m E	Unspecified Tank	1989	224136
C	58m E	Tanks	1988	227981
D	58m E	Unspecified Tank	1989	228733
D	58m E	Unspecified Tank	1993	228733
C	59m E	Tanks	1988	222116
D	59m E	Unspecified Tank	1993	224136
E	59m E	Unspecified Tank	1993	220665
E	59m E	Unspecified Tank	1989	216930
E	59m E	Unspecified Tank	1989	220665
E	59m E	Unspecified Tank	1993	216930
B	65m E	Unspecified Tank	1978	218083
B	65m E	Unspecified Tank	1993	217353



ID	Location	Land Use	Date	Group ID
B	66m E	Unspecified Tank	1989	217353
B	66m E	Unspecified Tank	1989	220158
B	66m E	Unspecified Tank	1978	223368
B	66m E	Unspecified Tank	1993	220158
B	66m E	Unspecified Tank	1993	216601
O	66m E	Unspecified Tank	1993	210952
B	66m E	Unspecified Tank	1989	216601
P	73m NW	Unspecified Tank	1993	226695
K	73m NE	Unspecified Tank	1980	227015
P	73m NW	Unspecified Tank	1988	219696
K	73m NE	Unspecified Tank	1988	218546
K	73m NE	Unspecified Tank	1988	224290
K	74m NE	Unspecified Tank	1980	223775
P	74m NW	Unspecified Tank	1981	221342
K	74m NE	Unspecified Tank	1993	223563
K	74m NE	Unspecified Tank	1980	233289
K	75m NE	Unspecified Tank	1993	218546
K	75m NE	Unspecified Tank	1980	218546
M	82m NE	Unspecified Tank	1993	211455
O	86m E	Tanks	1993	214407
B	95m E	Tanks	1989	228567
B	95m E	Tanks	1978	228567
B	95m E	Tanks	1993	228567
O	97m NE	Unspecified Tank	1993	211454
Q	98m E	Tanks	1989	229125
Q	99m E	Tanks	1993	229125
B	105m E	Tanks	1978	221862
B	105m E	Tanks	1993	220117



ID	Location	Land Use	Date	Group ID
B	105m E	Tanks	1989	230589
O	110m NE	Unspecified Tank	1993	211453
O	113m E	Unspecified Tank	1993	211457
R	119m E	Unspecified Tank	1989	221703
R	119m E	Unspecified Tank	1993	221703
K	120m NE	Unspecified Tank	1988	229554
B	121m E	Unspecified Tank	1993	225822
K	121m NE	Unspecified Tank	1980	228774
K	121m NE	Unspecified Tank	1993	228774
K	121m NE	Unspecified Tank	1980	228774
B	121m E	Unspecified Tank	1989	225822
K	121m NE	Unspecified Tank	1993	232481
K	121m NE	Unspecified Tank	1980	220144
B	121m E	Unspecified Tank	1978	225822
K	121m NE	Unspecified Tank	1988	228774
K	122m NE	Unspecified Tank	1980	218700
O	124m NE	Tanks	1993	214410
O	131m NE	Tanks	1993	214408
O	132m NE	Tanks	1993	214409
O	154m NE	Tanks	1993	214411
S	158m E	Unspecified Tank	1978	221171
S	158m E	Unspecified Tank	1993	231855
S	158m E	Unspecified Tank	1989	225210
O	171m NE	Unspecified Tank	1993	210953
T	213m NE	Unspecified Tank	1988	228862
T	214m NE	Unspecified Tank	1980	228862
T	214m NE	Unspecified Tank	1993	228862
T	214m NE	Unspecified Tank	1980	228862



ID	Location	Land Use	Date	Group ID
V	225m NE	Unspecified Tank	1980	230048
V	226m NE	Unspecified Tank	1993	217493
V	226m NE	Unspecified Tank	1980	230048
V	226m NE	Unspecified Tank	1988	228791
W	240m NE	Unspecified Tank	1988	224591
W	240m NE	Unspecified Tank	1980	217364
W	240m NE	Unspecified Tank	1993	223363
W	240m NE	Unspecified Tank	1980	225202
Y	259m NE	Unspecified Tank	1980	219758
Y	260m NE	Unspecified Tank	1988	228419
Y	260m NE	Unspecified Tank	1993	224760
Y	260m NE	Unspecified Tank	1980	218462
Z	273m E	Unspecified Tank	1993	228055
Z	273m E	Unspecified Tank	1980	224082
Z	273m E	Unspecified Tank	1988	225447
Z	274m E	Unspecified Tank	1984	225447
AB	280m NE	Unspecified Tank	1980	224970
AB	280m NE	Unspecified Tank	1980	224970
AB	280m NE	Unspecified Tank	1988	224970
AD	302m NE	Unspecified Tank	1980	222593
AD	302m NE	Unspecified Tank	1988	225471
AD	303m NE	Unspecified Tank	1993	223375
AD	303m NE	Unspecified Tank	1980	232528
AE	306m SE	Unspecified Tank	1978	211448
AF	314m SE	Unspecified Tank	1978	222471
AF	314m SE	Unspecified Tank	1993	228259
AE	319m SE	Unspecified Tank	1978	211449
AF	321m SE	Unspecified Tank	1979	222471



ID	Location	Land Use	Date	Group ID
AF	321m SE	Unspecified Tank	1997	230519
AF	321m SE	Unspecified Tank	1989	219323
AF	324m SE	Tanks	1979	219831
AF	324m SE	Tanks	1989	219831
AG	341m E	Unspecified Tank	1994	211441
AG	341m E	Tanks	1994	214664
AG	343m E	Unspecified Tank	1994	211443
AG	357m E	Tanks	1994	214663
AH	360m E	Unspecified Tank	1993	231438
AH	360m E	Unspecified Tank	1988	222676
AG	360m E	Unspecified Tank	1994	211442
AH	360m E	Unspecified Tank	1980	217821
AH	361m E	Unspecified Tank	1984	221513
X	396m SE	Tanks	1997	213498
AG	401m E	Tanks	1994	214665
AG	403m E	Tanks	1994	214666
X	418m SE	Unspecified Tank	1989	229067
X	418m SE	Unspecified Tank	1997	229067
AI	419m SE	Tanks	1979	222044
AI	419m SE	Tanks	1989	222044
AI	420m SE	Unspecified Tank	1979	211450
AI	420m SE	Tanks	1989	214667
X	423m SE	Tanks	1979	225074
X	423m SE	Tanks	1989	225074
AG	427m E	Unspecified Tank	1984	221570
AG	427m E	Unspecified Tank	1989	221570
AG	429m E	Unspecified Tank	1994	222247
X	430m SE	Tanks	1997	213499



ID	Location	Land Use	Date	Group ID
AG	432m E	Tanks	1994	214662
X	437m SE	Tanks	1979	221526
X	437m SE	Tanks	1989	221526
AG	442m E	Unspecified Tank	1994	211444
X	446m SE	Unspecified Tank	1997	208757
AJ	446m E	Unspecified Tank	1988	218886
AJ	446m E	Unspecified Tank	1993	232663
AJ	447m E	Unspecified Tank	1980	222039
AJ	447m E	Unspecified Tank	1984	217422
AG	449m E	Unspecified Tank	1994	211445
AI	449m SE	Unspecified Tank	1997	229058
AI	450m SE	Unspecified Tank	1989	229058
AI	450m SE	Unspecified Tank	1997	218411
AI	452m SE	Unspecified Tank	1989	218411
X	464m SE	Tanks	1997	213488
X	467m SE	Unspecified Tank	1997	227685
X	469m SE	Unspecified Tank	1989	227685
AK	477m SE	Tanks	1997	213491
X	477m SE	Tanks	1997	213500
X	481m SE	Tanks	1997	213494
AL	481m E	Tanks	1984	230523
AL	481m E	Tanks	1989	230523
X	481m SE	Unspecified Tank	1979	232577
AL	481m E	Tanks	1979	230548
AL	482m E	Tanks	1994	230523
X	482m SE	Unspecified Tank	1989	232577
X	484m SE	Tanks	1979	221438
X	485m SE	Tanks	1989	221438



ID	Location	Land Use	Date	Group ID
AM	485m SE	Unspecified Tank	1997	224842
AM	485m SE	Unspecified Tank	1984	224842
AM	485m SE	Unspecified Tank	1989	224842
AM	486m SE	Unspecified Tank	1979	229377
X	489m SE	Tanks	1979	219950
X	489m SE	Tanks	1989	219950
AG	491m E	Unspecified Tank	1994	211447
X	492m SE	Tanks	1997	213495
AM	495m SE	Unspecified Tank	1997	218590
X	495m SE	Tanks	1997	213496
AM	497m SE	Unspecified Tank	1984	224002
AM	497m SE	Unspecified Tank	1989	224002
AM	497m SE	Unspecified Tank	1979	228410
AL	497m SE	Unspecified Tank	1984	231771
AL	497m SE	Unspecified Tank	1989	231771
AL	498m SE	Unspecified Tank	1979	225164
AG	498m E	Unspecified Tank	1994	211446
AL	498m SE	Unspecified Tank	1997	231771

This data is sourced from Ordnance Survey / Groundsure.

2.3 Historical energy features

Records within 500m

5

Energy features digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use - un-grouped map on [page 26 >](#)

ID	Location	Land Use	Date	Group ID
B	On site	Electricity Substation	1978	128344
C	1m SE	Electricity Substation	1978	127398



ID	Location	Land Use	Date	Group ID
D	2m E	Electricity Substation	1978	128346
E	3m E	Electricity Substation	1978	128345
AJ	424m E	Electricity Substation	1980	128347

This data is sourced from Ordnance Survey / Groundsure.

2.4 Historical petrol stations

Records within 500m

0

Petrol stations digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

This data is sourced from Ordnance Survey / Groundsure.

2.5 Historical garages

Records within 500m

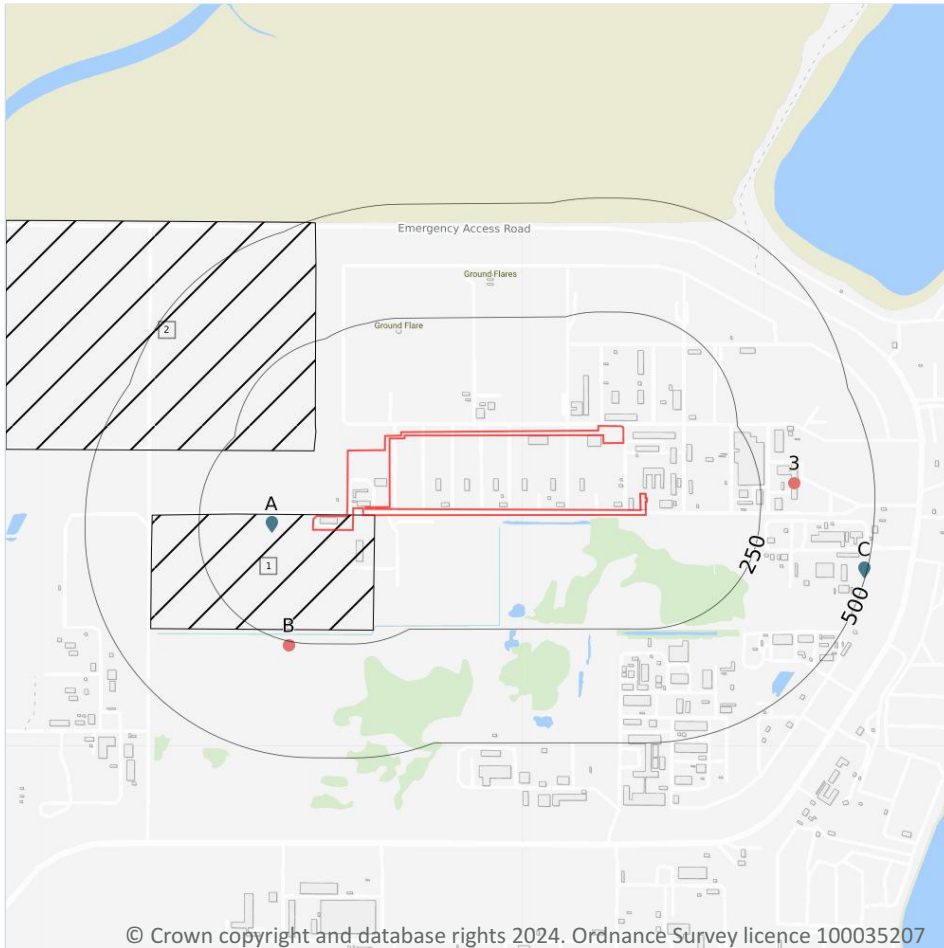
0

Garages digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

This data is sourced from Ordnance Survey / Groundsure.



3 Waste and landfill



- Site Outline
- Search buffers in metres (m)
- Historical landfill (EA/NRW)
- Licensed waste sites
- Waste exemptions

3.1 Active or recent landfill

Records within 500m

0

Active or recently closed landfill sites under Environment Agency/Natural Resources Wales regulation.

This data is sourced from the Environment Agency and Natural Resources Wales.

3.2 Historical landfill (BGS records)

Records within 500m

0

Landfill sites identified on a survey carried out on behalf of the DoE in 1973. These sites may have been closed or operational at this time.

This data is sourced from the British Geological Survey.



3.3 Historical landfill (LA/mapping records)

Records within 500m

0

Landfill sites identified from Local Authority records and high detail historical mapping.

This data is sourced from the Ordnance Survey/Groundsure and Local Authority records.

3.4 Historical landfill (EA/NRW records)

Records within 500m

2

Known historical (closed) landfill sites (e.g. sites where there is no PPC permit or waste management licence currently in force). This includes sites that existed before the waste licensing regime and sites that have been licensed in the past but where a licence has been revoked, ceased to exist or surrendered and a certificate of completion has been issued.

Features are displayed on the Waste and landfill map on [page 40](#) >

ID	Location	Details		
1	On site	Site Address: Seal Sands, Agricultural Division, Billingham, Stockton-on-Tees Licence Holder Address: -	Waste Licence: Yes Site Reference: 0700/CLE/019 Waste Type: Commercial Environmental Permitting Regulations (Waste) Reference: - Licence Issue: 01/04/1977 Licence Surrender: -	Operator: - Licence Holder: Imperial Chemical Industries Limited First Recorded: - Last Recorded: -
2	74m W	Site Address: Seal Sands, North Bank, Middlesbrough, Cleveland Licence Holder Address: Queen's Square, Middlesbrough, Cleveland	Waste Licence: Yes Site Reference: 0700/CLE/032 Waste Type: Inert, Industrial Environmental Permitting Regulations (Waste) Reference: - Licence Issue: 13/01/1978 Licence Surrender: 01/11/1989	Operator: - Licence Holder: Tees and Hartlepool Port Authority First Recorded 01/02/1978 Last Recorded: 30/10/1989

This data is sourced from the Environment Agency and Natural Resources Wales.

3.5 Historical waste sites

Records within 500m

0

Waste site records derived from Local Authority planning records and high detail historical mapping.

This data is sourced from Ordnance Survey/Groundsure and Local Authority records.



3.6 Licensed waste sites

Records within 500m

4

Active or recently closed waste sites under Environment Agency/Natural Resources Wales regulation.

Features are displayed on the Waste and landfill map on [page 40](#) >

ID	Location	Details		
A	92m W	Site Name: Phillips Landfarm Site Address: Phillips Petroleum, Seal Sands, Middlesbrough, Cleveland, TS2 1UH Correspondence Address: -	Type of Site: Biological Treatment Facility Size: >= 25000 tonnes 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: PHI001 EPR reference: EA/EPR/UP3990ZU/S002 Operator: Phillips Petroleum Co U K Ltd Waste Management licence No: 60095 Annual Tonnage: 0	Issue Date: 24/02/1984 Effective Date: - Modified: - Surrendered Date: Aug 17 2007 12:00AM Expiry Date: - Cancelled Date: - Status: Surrendered
A	92m W	Site Name: Phillips Landfarm Site Address: Phillips Petroleum, Seal Sands, Middlesbrough, Cleveland, TS2 1UH Correspondence Address: -	Type of Site: Biological Treatment Facility Size: 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: 652131 EPR reference: EA/EPR/UP3990ZU Operator: Chrysaor Petroleum Company Uk Limited Waste Management licence No: 60095 Annual Tonnage: 0	Issue Date: 24/02/1984 Effective Date: 24/02/1984 Modified: - Surrendered Date: 24/02/1984 Expiry Date: - Cancelled Date: - Status: Surrendered
C	493m E	Site Name: Seal Sands Site Address: Seal Sands Road, Seal Sands, Middlesbrough, Cleveland, TS2 1UB Correspondence Address: Seal Sands Road, Seal Sands, Middlesbrough, Cleveland, TS2 1UB	Type of Site: In-House Storage Facility Size: Unknown Environmental Permitting Regulations (Waste) Licence Number: HEX001 EPR reference: - Operator: Hexcel Chemical Products Ltd Waste Management licence No: 68646 Annual Tonnage: 0	Issue Date: 01/10/1990 Effective Date: - Modified: - Surrendered Date: - Expiry Date: 01/05/1994 Cancelled Date: - Status: Expired



ID	Location	Details		
C	493m E	Site Name: Seal Sands Site Address: Seal Sands Road, Seal Sands, Middlesbrough, Stockton-on-Tee, TS2 1UB Correspondence Address: -	Type of Site: In-House Storage Facility Size: 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: 651960 EPR reference: EA/EPR/DP3693NP Operator: Hexcel Chemical Products Limited Waste Management licence No: 68646 Annual Tonnage: 7500	Issue Date: 01/10/1990 Effective Date: 01/10/1990 Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Expired

This data is sourced from the Environment Agency and Natural Resources Wales.

3.7 Waste exemptions

Records within 500m	3
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Activities involving the storage, treatment, use or disposal of waste that are exempt from needing a permit. Exemptions have specific limits and conditions that must be adhered to.

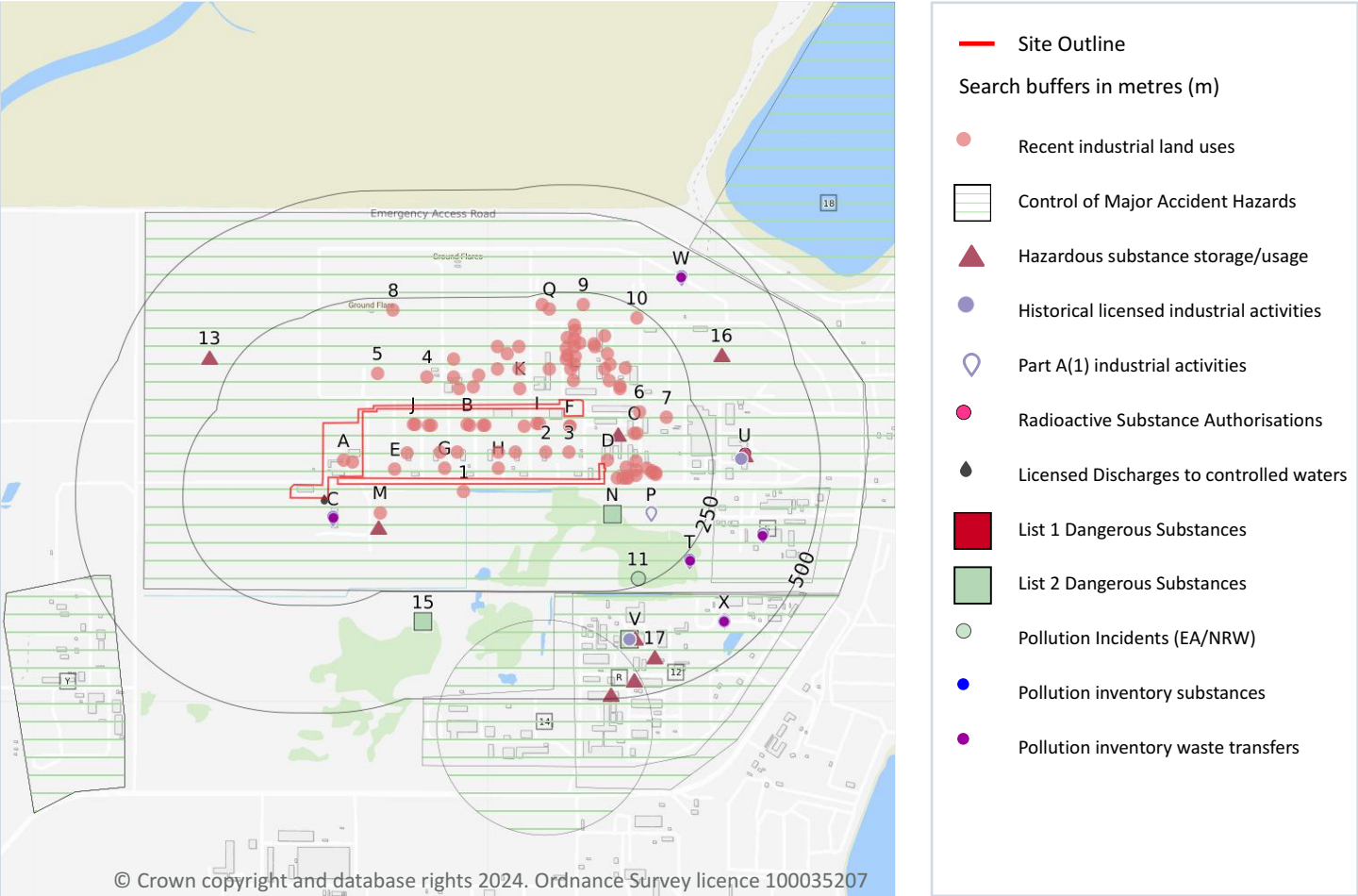
Features are displayed on the Waste and landfill map on [page 40 >](#)

ID	Location	Site	Reference	Category	Sub-Category	Description
B	261m SW	-	WEX358055	Using waste exemption	Not on a farm	Use of waste in construction
B	261m SW	-	WEX358055	Storing waste exemption	Not on a farm	Storage of waste in a secure place
3	324m E	Ineos Nitriles Middlesbrough Cleveland Ts2 1uh	EPR/AF0430JS /A001	Using waste exemption	Both agricultural and non-agricultural waste	Use of waste for a specified purpose

This data is sourced from the Environment Agency and Natural Resources Wales.



4 Current industrial land use



4.1 Recent industrial land uses

Records within 250m 87

Current potentially contaminative industrial sites.
Features are displayed on the Current industrial land use map on [page 44](#) >

ID	Location	Company	Address	Activity	Category
A	On site	Chimney	Durham, TS2	Chimneys	Industrial Features
A	On site	Cooling Tower	Durham, TS2	Chimneys	Industrial Features
D	12m E	Chimney	Durham, TS2	Chimneys	Industrial Features

ID	Location	Company	Address	Activity	Category
1	19m SE	Mast	Durham, TS2	Telecommunications Features	Infrastructure and Facilities
E	21m SW	Tank	Durham, TS2	Tanks (Generic)	Industrial Features
F	24m E	Tank	Durham, TS2	Tanks (Generic)	Industrial Features
F	24m E	Tanks	Durham, TS2	Tanks (Generic)	Industrial Features
G	25m E	Tank	Durham, TS2	Tanks (Generic)	Industrial Features
H	26m E	Tank	Durham, TS2	Tanks (Generic)	Industrial Features
D	30m E	Tank	Durham, TS2	Tanks (Generic)	Industrial Features
I	34m E	Tank	Durham, TS2	Tanks (Generic)	Industrial Features
I	35m E	Tank	Durham, TS2	Tanks (Generic)	Industrial Features
J	35m N	Tank	Durham, TS2	Tanks (Generic)	Industrial Features
J	35m N	Tank	Durham, TS2	Tanks (Generic)	Industrial Features
B	36m NE	Tank	Durham, TS2	Tanks (Generic)	Industrial Features
B	38m NE	Tank	Durham, TS2	Tanks (Generic)	Industrial Features
B	38m E	Tank	Durham, TS2	Tanks (Generic)	Industrial Features
B	38m E	Tank	Durham, TS2	Tanks (Generic)	Industrial Features
K	38m NE	Tank	Durham, TS2	Tanks (Generic)	Industrial Features
K	39m NE	Travelling Crane	Durham, TS2	Travelling Cranes and Gantries	Industrial Features
J	39m NE	Tank	Durham, TS2	Tanks (Generic)	Industrial Features
J	39m NE	Tank	Durham, TS2	Tanks (Generic)	Industrial Features
I	41m E	Tank	Durham, TS2	Tanks (Generic)	Industrial Features
K	43m NE	Tank	Durham, TS2	Tanks (Generic)	Industrial Features
D	43m E	Tank	Durham, TS2	Tanks (Generic)	Industrial Features
L	45m NE	Tank	Durham, TS2	Tanks (Generic)	Industrial Features
D	49m E	Tank	Durham, TS2	Tanks (Generic)	Industrial Features
D	50m E	Tank	Durham, TS2	Tanks (Generic)	Industrial Features
D	55m E	Tank	Durham, TS2	Tanks (Generic)	Industrial Features
E	60m NW	Tank	Durham, TS2	Tanks (Generic)	Industrial Features



ID	Location	Company	Address	Activity	Category
G	61m E	Tank	Durham, TS2	Tanks (Generic)	Industrial Features
G	61m E	Tank	Durham, TS2	Tanks (Generic)	Industrial Features
H	62m E	Tank	Durham, TS2	Tanks (Generic)	Industrial Features
H	62m E	Tank	Durham, TS2	Tanks (Generic)	Industrial Features
2	62m E	Tank	Durham, TS2	Tanks (Generic)	Industrial Features
3	62m E	Tank	Durham, TS2	Tanks (Generic)	Industrial Features
K	66m NE	Mast (Telecommu nication)	Durham, TS2	Telecommunications Features	Infrastructure and Facilities
4	67m N	Pylon	Durham, TS2	Electrical Features	Infrastructure and Facilities
M	67m SW	Tank	Durham, TS2	Tanks (Generic)	Industrial Features
K	69m NE	Pylon	Durham, TS2	Electrical Features	Infrastructure and Facilities
D	71m E	Tank	Durham, TS2	Tanks (Generic)	Industrial Features
D	72m E	Tank	Durham, TS2	Tanks (Generic)	Industrial Features
L	72m NE	Chimney	Durham, TS2	Chimneys	Industrial Features
D	73m E	Tank	Durham, TS2	Tanks (Generic)	Industrial Features
5	75m N	Tank	Durham, TS2	Tanks (Generic)	Industrial Features
L	77m NE	Tank	Durham, TS2	Tanks (Generic)	Industrial Features
L	79m E	Tank	Durham, TS2	Tanks (Generic)	Industrial Features
L	82m NE	Tank	Durham, TS2	Tanks (Generic)	Industrial Features
K	84m NE	Tank	Durham, TS2	Tanks (Generic)	Industrial Features
K	84m NE	Tank	Durham, TS2	Tanks (Generic)	Industrial Features
L	90m NE	Chimney	Durham, TS2	Chimneys	Industrial Features
L	91m E	Tank	Durham, TS2	Tanks (Generic)	Industrial Features
L	93m E	Tank	Durham, TS2	Tanks (Generic)	Industrial Features
L	94m NE	Tank	Durham, TS2	Tanks (Generic)	Industrial Features
D	97m E	Tank	Durham, TS2	Tanks (Generic)	Industrial Features
O	101m E	Tank	Durham, TS2	Tanks (Generic)	Industrial Features



ID	Location	Company	Address	Activity	Category
L	101m NE	Tank	Durham, TS2	Tanks (Generic)	Industrial Features
L	103m NE	Chimney	Durham, TS2	Chimneys	Industrial Features
O	104m E	Tank	Durham, TS2	Tanks (Generic)	Industrial Features
L	106m NE	Tank	Durham, TS2	Tanks (Generic)	Industrial Features
K	106m NE	Pylon	Durham, TS2	Electrical Features	Infrastructure and Facilities
D	108m E	Tank	Durham, TS2	Tanks (Generic)	Industrial Features
D	108m E	Tank	Durham, TS2	Tanks (Generic)	Industrial Features
D	117m E	Mast	Durham, TS2	Telecommunications Features	Infrastructure and Facilities
D	118m E	Pylon	Durham, TS2	Electrical Features	Infrastructure and Facilities
K	119m NE	Pylon	Durham, TS2	Electrical Features	Infrastructure and Facilities
L	120m NE	Tank	Durham, TS2	Tanks (Generic)	Industrial Features
L	123m NE	Tank	Durham, TS2	Tanks (Generic)	Industrial Features
L	124m E	Tank	Durham, TS2	Tanks (Generic)	Industrial Features
L	125m NE	Tank	Durham, TS2	Tanks (Generic)	Industrial Features
L	127m NE	Tank	Durham, TS2	Tanks (Generic)	Industrial Features
6	130m E	Tank	Durham, TS2	Tanks (Generic)	Industrial Features
L	133m NE	Tank	Durham, TS2	Tanks (Generic)	Industrial Features
L	135m NE	Tank	Durham, TS2	Tanks (Generic)	Industrial Features
K	136m NE	Tank	Durham, TS2	Tanks (Generic)	Industrial Features
K	136m NE	Tank	Durham, TS2	Tanks (Generic)	Industrial Features
L	143m NE	Tank	Durham, TS2	Tanks (Generic)	Industrial Features
L	144m NE	Chimneys	Durham, TS2	Chimneys	Industrial Features
L	158m NE	Chimney	Durham, TS2	Chimneys	Industrial Features
L	162m NE	Tank	Durham, TS2	Tanks (Generic)	Industrial Features
L	173m NE	Tank	Durham, TS2	Tanks (Generic)	Industrial Features
7	181m E	Tank	Durham, TS2	Tanks (Generic)	Industrial Features



ID	Location	Company	Address	Activity	Category
Q	213m NE	Tank	Durham, TS2	Tanks (Generic)	Industrial Features
8	222m N	Flare Stack	Durham, TS2	Gas Features	Infrastructure and Facilities
9	222m NE	Pylon	Durham, TS2	Electrical Features	Infrastructure and Facilities
Q	225m NE	Pylon	Durham, TS2	Electrical Features	Infrastructure and Facilities
10	231m NE	Tank	Durham, TS2	Tanks (Generic)	Industrial Features

This data is sourced from Ordnance Survey.

4.2 Current or recent petrol stations

Records within 500m

0

Open, closed, under development and obsolete petrol stations.

This data is sourced from Experian.

4.3 Electricity cables

Records within 500m

0

High voltage underground electricity transmission cables.

This data is sourced from National Grid.

4.4 Gas pipelines

Records within 500m

0

High pressure underground gas transmission pipelines.

This data is sourced from National Grid.

4.5 Sites determined as Contaminated Land

Records within 500m

0

Contaminated Land Register of sites designated under Part 2a of the Environmental Protection Act 1990.

This data is sourced from Local Authority records.



4.6 Control of Major Accident Hazards (COMAH)

Records within 500m
10

Control of Major Accident Hazards (COMAH) sites. This data includes upper and lower tier sites, and includes a historical archive of COMAH sites and Notification of Installations Handling Hazardous Substances (NIHHS) records.

Features are displayed on the Current industrial land use map on [page 44](#) >

ID	Location	Company	Address	Operational status	Tier
B	On site	ConocoPhillips (U.K.) Teesside Operator Limited	ConocoPhillips (U.K.) Teesside Operator Limited, Seal Sands Terminal, Teesside Operations, Middlesbrough, Cleveland, TS2 1UH	Current COMAH Site	COMAH Upper Tier Operator
B	On site	ConocoPhillips (U.K.) Teesside Operator Limited	ConocoPhillips (U.K.) Teesside Operator Limited, Middlesbrough, Greatham Storage, Middlesbrough, Cleveland, TS2 1UH	Current COMAH Site	COMAH Upper Tier Operator
12	254m SE	Fine Organics Limited	Fine Organics Limited, Seal Sands, Middlesbrough, Cleveland, TS2 1UB	Historical COMAH Site	COMAH Upper Tier Operator
R	255m SE	Fine Organics Limited	Fine Organics Limited, Lianhetech Seal Sands, Middlesbrough, Cleveland, TS2 1UB	Current COMAH Site	COMAH Upper Tier Operator
S	259m E	Vertellus Specialities UK Limited	Vertellus Specialities UK Limited, Middlesbrough, Seal Sands Road, Middlesbrough, Cleveland, TS2 1UB	Historical COMAH Site	COMAH Upper Tier Operator
14	317m SE	Exolum Seal Sands Limited	Exolum Seal Sands Limited, North Terminal, Middlesbrough, Middlesbrough, Cleveland, TS2 1UB	Current COMAH Site	COMAH Upper Tier Operator
18	436m NE	Wood Group PSN Limited	Wood Group PSN Limited, Seal Sands Terminal - Central Area Transmission System (CATS), Seal Sands Road, Seal Sands, Middlesbrough, Cleveland, TS2 1UB	Current COMAH Site	COMAH Upper Tier Operator
Y	456m W	Amoco Uk Exploration	Amoco Uk Exploration, Amoco Cats Terminal, Seal Sands Rd, Middleborough	Historical COMAH Site	-
Y	456m W	British Gas	British Gas, Seal Sands, Middlesborough, TS2 1UB	Historical COMAH Site	-
Y	456m W	Bp Amoco Ltd	Bp Amoco Ltd, Seal Sands Road, Seal Sands, TS2 1UB	Historical COMAH Site	-



This data is sourced from the Health and Safety Executive.

4.7 Regulated explosive sites

Records within 500m

0

Sites registered and licensed by the Health and Safety Executive under the Manufacture and Storage of Explosives Regulations 2005 (MSER). The last update to this data was in April 2011.

This data is sourced from the Health and Safety Executive.

4.8 Hazardous substance storage/usage

Records within 500m

12

Consents granted for a site to hold certain quantities of hazardous substances at or above defined limits in accordance with the Planning (Hazardous Substances) Regulations 2015.

Features are displayed on the Current industrial land use map on [page 44](#) >

ID	Location	Details	
O	75m E	Application reference number: 92/2093/H Application status: Historical Consent Application date: 21/10/1992 Address: Phillips Imperial Petroleum Limited, Huntsman Drive, Seal Sands, Middlesbrough, TS2 1TT	Details: Storage of ethane, propane, iso-butane, normal Butane, mixed NGL and crude oil Enforcement: No Enforcements Notified Date of enforcement: No Enforcements Notified Comment: No Enforcements Notified
M	102m S	Application reference number: 07/2281/HAZ Application status: Historical Consent Application date: 27/07/2007 Address: Norsea Pipeline Ltd, c/o Conocophillips Petroleum Company UK, Seal Sands, Middlesbrough, TS2 1UH	Details: Storage of up to 6500 tonnes of dangerous for the environment substances (fuel oil) Enforcement: No Enforcements Notified Date of enforcement: No Enforcements Notified Comment: No Enforcements Notified
13	306m NW	Application reference number: 07/2284/HAZ Application status: Historical Consent Application date: 27/07/2007 Address: Norsea Pipeline Ltd, c/o Conocophillips Petroleum Company UK, Seal Sands, Middlesbrough, TS2 1UH	Details: Storage and movement of up tp 630000 tonnes of natural gas/liquefied natural gas Enforcement: No Enforcements Notified Date of enforcement: No Enforcements Notified Comment: No Enforcements Notified
U	325m E	Application reference number: No Details Application status: Historical Consent Application date: No Details Address: Norsea Pipeline Ltd, c/o ConocoPhillips Petroleum Company UK Limited, Teesside Operations, Seal Sands, Middlesbrough, Stockton on Tees Borough Council, England, TS2 1UH	Details: No Details Enforcement: No Details Date of enforcement: No Details Comment: No Details



ID	Location	Details	
16	339m E	Application reference number: 92/2270/H Application status: Historical Consent Application date: 20/11/1992 Address: Phillips Imperial Petroleum Limited, Huntsman Drive, Seal Sands, Middlesbrough, TS2 1TT	Details: Storage of up to 24800 tonnes of ethane, 79800 tonnes of propane, 23800 tonnes of iso- butane, 49800 tonnes of normal butane and 39800 tonnes of crude oil Enforcement: No Enforcements Notified Date of enforcement: No Enforcements Notified Comment: No Enforcements Notified
V	367m SE	Application reference number: 05/0605/HAZ Application status: Withdrawn Application date: 07/06/2005 Address: Dow Chemical Co. Ltd, Seal Sands, Middlesbrough, TS2 1UD	Details: Variation of existing consent to include the storage of substances below the qualifying quantities and category 10 ii substances used in a new product application. Enforcement: No Enforcements Notified Date of enforcement: No Enforcements Notified Comment: No Enforcements Notified
V	367m SE	Application reference number: 99/1621/H Application status: Historical Consent Application date: 19/10/1999 Address: Dow Chemical Company Ltd, Seal Sands, Middlesbrough, Stockton on Tees Borough Council, England, TS2 1UB	Details: Deemed consent for the continued storage of hazardous substances Enforcement: Data requested, not received. Date of enforcement: Data requested, not received. Comment: Data requested, not received.
17	421m SE	Application reference number: 09/1376/HAZ Application status: Historical Consent Application date: 08/01/2009 Address: Fine Organics Limited, Seaton Carew Road, Port Clarence, Middlesbrough, TS2 1UB	Details: Storage of up to 25 tonnes of chlorine, 0.4 tonnes of hydrogen, 10 tonnes of hydrogen chloride, 5 tonnes of LPG, 75 tonnes of methanol, 12 tonnes of oxygen, 1 tonnes of acrylonitrile, 35 tonnes of carbon disulphide, 0.02 tonnes of acetylene, 10 tonne Enforcement: No Enforcements Notified Date of enforcement: No Enforcements Notified Comment: No Enforcements Notified
R	463m SE	Application reference number: 14/2432/HAZ Application status: Historical Consent Application date: 01/08/2002 Address: Fine Organics Limited, Seal Sands Road, Seal Sands, Middlesbrough, Stockton on Tees Borough Council, England, TS2 1UB	Details: Storage of 10 tonnes Of phosgene (carbonyl chloride) in moveable containers Enforcement: No Enforcements Notified Date of enforcement: No Enforcements Notified Comment: No Enforcements Notified
R	463m SE	Application reference number: 00/1952/H Application status: Historical Consent Application date: 01/12/2000 Address: Fine Organics Limited, Seaton Carew Road, Port Clarence, Middlesbrough, TS2 1UB	Details: Variation of existing consent for storage of new substances acrylonitrile, bromine & oxygen with revised consents for other substances. Enforcement: No Enforcements Notified Date of enforcement: No Enforcements Notified Comment: No Enforcements Notified
R	463m SE	Application reference number: 01/1853/H Application status: Historical Consent Application date: 17/10/2001 Address: Fine Organics Limited, Seaton Carew Road, Port Clarence, Middlesbrough, TS2 1UB	Details: Variation of existing consent for revised consent for existing and new movable container storage areas Enforcement: No Enforcements Notified Date of enforcement: No Enforcements Notified Comment: No Enforcements Notified



ID	Location	Details	
R	491m SE	Application reference number: 14/2432/HAZ Application status: Historical Consent Application date: 10/09/2014 Address: Fine Organics Limited, Seal Sands Road, Seal Sands, Middlesbrough, Stockton on Tees Borough Council, England, TS2 1UB	Details: Hazardous sustance consent to increase the fixed storage container size of chlorine Enforcement: No Details Date of enforcement: No Details Comment: No Details

This data is sourced from Local Authority records.

4.9 Historical licensed industrial activities (IPC)

Records within 500m

40

Integrated Pollution Control (IPC) records of substance releases to air, land and water. This data represents a historical archive as the IPC regime has been superseded.

Features are displayed on the Current industrial land use map on [page 44 >](#)

ID	Location	Details	
U	316m E	Operator: Conocophillips Petroleum Co UK Ltd Address: Greatham Tank Farm, Seal Sands, Middlesbrough, Cleveland, TS2 1UH Process: Petroleum Processes Permit Number: AF5590	Original Permit Number: IPCAPP Date Approved: 26-1-1993 Effective Date: 26-1-1993 Status: Superseded By Variation
U	316m E	Operator: Conocophillips Petroleum Co UK Ltd Address: Greatham Tank Farm, Seal Sands, Middlesbrough, Cleveland, TS2 1UH Process: Petroleum Processes Permit Number: AO2167	Original Permit Number: IPCMINVAR Date Approved: 9-8-1994 Effective Date: 18-8-1994 Status: Superseded By Variation
U	316m E	Operator: Conocophillips Petroleum Co UK Ltd Address: Greatham Tank Farm, Seal Sands, Middlesbrough, Cleveland, TS2 1UH Process: Petroleum Processes Permit Number: AX2995	Original Permit Number: IPCMINVAR Date Approved: 17-12-1996 Effective Date: 1-1-1997 Status: Superseded By Variation
U	316m E	Operator: Conocophillips Petroleum Co UK Ltd Address: Greatham Tank Farm, Seal Sands, Middlesbrough, Cleveland, TS2 1UH Process: Petroleum Processes Permit Number: BD7880	Original Permit Number: IPCMINVAR Date Approved: 24-11-1998 Effective Date: 30-11-1998 Status: Revoked - Now Ippc
V	366m SE	Operator: Dow Chemical Co Ltd Address: Seal Sands, Middlesbrough, Cleveland, TS2 1UD Process: Manufacture And Use Of Organic Chemicals Permit Number: AD8911	Original Permit Number: IPCAPP Date Approved: 22-7-1992 Effective Date: 22-7-1992 Status: Superseded By Variation



ID	Location	Details	
V	366m SE	Operator: Dow Chemical Co Ltd Address: Seal Sands, Middlesbrough, Cleveland, TS2 1UD Process: Manufacture And Use Of Organic Chemicals Permit Number: AK5644	Original Permit Number: IPCAIRAPP Date Approved: 25-3-1994 Effective Date: 30-3-1994 Status: Superseded By Variation
V	366m SE	Operator: Lundbeck Pharmaceuticals Ltd Address: Seal Sands, Middlesbrough, Cleveland, TS2 1UB Process: Manufacture And Use Of Organic Chemicals Permit Number: AK8899	Original Permit Number: IPCAIRAPP Date Approved: 24-3-1994 Effective Date: 30-3-1994 Status: Superseded By Variation
V	366m SE	Operator: Dow Chemical Co Ltd Address: Seal Sands, Middlesbrough, Cleveland, TS2 1UD Process: Manufacture And Use Of Organic Chemicals Permit Number: AN8631	Original Permit Number: IPCMINVAR Date Approved: 2-8-1994 Effective Date: 3-8-1994 Status: Superseded By Variation
V	366m SE	Operator: Dow Chemical Co Ltd Address: Seal Sands, Middlesbrough, Cleveland, TS2 1UD Process: Inorganic Chemical Processes Permit Number: AO0237	Original Permit Number: IPCAIRAPP Date Approved: 15-12-1994 Effective Date: 23-12-1994 Status: Superseded By Variation
V	366m SE	Operator: Dow Chemical Co Ltd Address: Seal Sands, Middlesbrough, Cleveland, TS2 1UD Process: Manufacture And Use Of Organic Chemicals Permit Number: AO9927	Original Permit Number: IPCMINVAR Date Approved: 20-1-1995 Effective Date: 20-1-1995 Status: Superseded By Variation
V	366m SE	Operator: Dow Chemical Co Ltd Address: Seal Sands, Middlesbrough, Cleveland, TS2 1UD Process: Manufacture And Use Of Organic Chemicals Permit Number: AP6613	Original Permit Number: IPCMINVAR Date Approved: 18-4-1995 Effective Date: 18-4-1995 Status: Superseded By Variation
V	366m SE	Operator: Lundbeck Pharmaceuticals Ltd Address: Seal Sands, Middlesbrough, Cleveland, TS2 1UB Process: Manufacture And Use Of Organic Chemicals Permit Number: AP7334	Original Permit Number: IPCMINVAR Date Approved: 20-1-1995 Effective Date: 20-1-1995 Status: Superseded By Variation
V	366m SE	Operator: Dow Chemical Co Ltd Address: Seal Sands, Middlesbrough, Cleveland, TS2 1UD Process: Manufacture And Use Of Organic Chemicals Permit Number: AR0551	Original Permit Number: IPCMINVAR Date Approved: 28-7-1995 Effective Date: 2-8-1995 Status: Superseded By Variation
V	366m SE	Operator: Dow Chemical Co Ltd Address: Seal Sands, Middlesbrough, Cleveland, TS2 1UD Process: Inorganic Chemical Processes Permit Number: AS3919	Original Permit Number: IPCMINVAR Date Approved: 12-11-1995 Effective Date: 13-11-1995 Status: Superseded By Variation



ID	Location	Details	
V	366m SE	Operator: Dow Chemical Co Ltd Address: Seal Sands, Middlesbrough, Cleveland, TS2 1UD Process: Manufacture And Use Of Organic Chemicals Permit Number: AS5865	Original Permit Number: IPCMINVAR Date Approved: 11-9-1995 Effective Date: 15-9-1995 Status: Superseded By Variation
V	366m SE	Operator: Dow Chemical Co Ltd Address: Seal Sands, Middlesbrough, Cleveland, TS2 1UD Process: Manufacture And Use Of Organic Chemicals Permit Number: AT7863	Original Permit Number: IPCMINVAR Date Approved: 22-10-1995 Effective Date: 23-10-1995 Status: Superseded By Variation
V	366m SE	Operator: Dow Chemical Co Ltd Address: Seal Sands, Middlesbrough, Cleveland, TS2 1UD Process: Manufacture And Use Of Organic Chemicals Permit Number: AU4550	Original Permit Number: IPCMINVAR Date Approved: 10-1-1996 Effective Date: 15-1-1996 Status: Superseded By Variation
V	366m SE	Operator: Dow Chemical Co Ltd Address: Seal Sands, Middlesbrough, Cleveland, TS2 1UD Process: Manufacture And Use Of Organic Chemicals Permit Number: AU5572	Original Permit Number: IPCMINVAR Date Approved: 18-1-1996 Effective Date: 26-1-1996 Status: Superseded By Variation
V	366m SE	Operator: Dow Chemical Co Ltd Address: Seal Sands, Middlesbrough, Cleveland, TS2 1UD Process: Manufacture And Use Of Organic Chemicals Permit Number: AU6706	Original Permit Number: IPCMINVAR Date Approved: 7-2-1996 Effective Date: 9-2-1996 Status: Superseded By Variation
V	366m SE	Operator: Dow Chemical Co Ltd Address: Seal Sands, Middlesbrough, Cleveland, TS2 1UD Process: Inorganic Chemical Processes Permit Number: AV1122	Original Permit Number: IPCMINVAR Date Approved: 6-3-1996 Effective Date: 7-3-1996 Status: Superseded By Variation
V	366m SE	Operator: Dow Chemical Co Ltd Address: Seal Sands, Middlesbrough, Cleveland, TS2 1UD Process: Manufacture And Use Of Organic Chemicals Permit Number: AV6094	Original Permit Number: IPCMINVAR Date Approved: 16-5-1996 Effective Date: 16-5-1996 Status: Superseded By Variation
V	366m SE	Operator: Lundbeck Pharmaceuticals Ltd Address: Seal Sands, Middlesbrough, Cleveland, TS2 1UB Process: Manufacture And Use Of Organic Chemicals Permit Number: AV7511	Original Permit Number: IPCMINVAR Date Approved: 23-8-1996 Effective Date: 23-8-1996 Status: Superseded By Variation
V	366m SE	Operator: Lundbeck Pharmaceuticals Ltd Address: Seal Sands, Middlesbrough, Cleveland, TS2 1UB Process: Manufacture And Use Of Organic Chemicals Permit Number: AX6397	Original Permit Number: IPCMINVAR Date Approved: 21-2-1997 Effective Date: 28-2-1997 Status: Revoked



ID	Location	Details	
V	366m SE	Operator: Dow Chemical Co Ltd Address: Seal Sands, Middlesbrough, Cleveland, TS2 1UD Process: Manufacture And Use Of Organic Chemicals Permit Number: AZ2295	Original Permit Number: IPCMAJVAR Date Approved: 3-11-1997 Effective Date: 3-11-1997 Status: Superseded By Variation
V	366m SE	Operator: Dow Chemical Co Ltd Address: Seal Sands, Middlesbrough, Cleveland, TS2 1UD Process: Manufacture And Use Of Organic Chemicals Permit Number: BA5180	Original Permit Number: IPCMINVAR Date Approved: 4-2-1998 Effective Date: 6-2-1998 Status: Superseded By Variation
V	366m SE	Operator: Dow Chemical Co Ltd Address: Seal Sands, Middlesbrough, Cleveland, TS2 1UD Process: Manufacture And Use Of Organic Chemicals Permit Number: BA7964	Original Permit Number: IPCMINVAR Date Approved: 6-3-1998 Effective Date: 10-3-1998 Status: Superseded By Variation
V	366m SE	Operator: Dow Chemical Co Ltd Address: Seal Sands, Middlesbrough, Cleveland, TS2 1UD Process: Inorganic Chemical Processes Permit Number: BB6238	Original Permit Number: IPCMINVAR Date Approved: 30-7-1998 Effective Date: 6-8-1998 Status: Superseded By Variation
V	366m SE	Operator: Dow Chemical Co Ltd Address: Seal Sands, Middlesbrough, Cleveland, TS2 1UD Process: Manufacture And Use Of Organic Chemicals Permit Number: BC0812	Original Permit Number: IPCMINVAR Date Approved: 7-1-1999 Effective Date: 11-1-1999 Status: Superseded By Variation
V	366m SE	Operator: Dow Chemical Co Ltd Address: Seal Sands, Middlesbrough, Cleveland, TS2 1UD Process: Manufacture And Use Of Organic Chemicals Permit Number: BC5156	Original Permit Number: IPCMINVAR Date Approved: 24-11-1998 Effective Date: 30-11-1998 Status: Revoked - Now Ippc
V	366m SE	Operator: Dow Chemical Co Ltd Address: Seal Sands, Middlesbrough, Cleveland, TS2 1UD Process: Manufacture And Use Of Organic Chemicals Permit Number: BE3723	Original Permit Number: IPCMINVAR Date Approved: 24-11-1998 Effective Date: 30-11-1998 Status: Superseded By Variation
V	366m SE	Operator: Dow Chemical Co Ltd Address: Seal Sands, Middlesbrough, Cleveland, TS2 1UD Process: Inorganic Chemical Processes Permit Number: BE5505	Original Permit Number: IPCMINVAR Date Approved: 24-11-1998 Effective Date: 30-11-1998 Status: Revoked - Now Ippc
V	366m SE	Operator: Dow Chemical Co Ltd Address: Seal Sands, Middlesbrough, Cleveland, TS2 1UD Process: Manufacture And Use Of Organic Chemicals Permit Number: BF1840	Original Permit Number: IPCMINVAR Date Approved: 30-3-1999 Effective Date: 31-3-1999 Status: Superseded By Variation



ID	Location	Details	
V	366m SE	Operator: Dow Chemical Co Ltd Address: Seal Sands, Middlesbrough, Cleveland, TS2 1UD Process: Manufacture And Use Of Organic Chemicals Permit Number: BH2464	Original Permit Number: IPCMINVAR Date Approved: 26-11-1999 Effective Date: 26-11-1999 Status: Superseded By Variation
V	366m SE	Operator: Dow Chemical Co Ltd Address: Seal Sands, Middlesbrough, Cleveland, TS2 1UD Process: Manufacture And Use Of Organic Chemicals Permit Number: BI2559	Original Permit Number: IPCMINVAR Date Approved: 6-6-2000 Effective Date: 9-6-2000 Status: Superseded By Variation
V	366m SE	Operator: Dow Chemical Co Ltd Address: Seal Sands, Middlesbrough, Cleveland, TS2 1UD Process: Manufacture And Use Of Organic Chemicals Permit Number: BK8494	Original Permit Number: IPCMINVAR Date Approved: 5-4-2001 Effective Date: 10-4-2001 Status: Superseded By Variation
V	366m SE	Operator: Dow Chemical Co Ltd Address: Seal Sands, Middlesbrough, Cleveland, TS2 1UD Process: Manufacture And Use Of Organic Chemicals Permit Number: BR7437	Original Permit Number: IPCMINVAR Date Approved: 28-3-2002 Effective Date: 5-4-2002 Status: Superseded By Variation
V	366m SE	Operator: Dow Chemical Co Ltd Address: Seal Sands, Middlesbrough, Cleveland, TS2 1UD Process: Manufacture And Use Of Organic Chemicals Permit Number: BT0901	Original Permit Number: IPCMINVAR Date Approved: 20-1-2003 Effective Date: 24-1-2003 Status: Superseded By Variation
V	366m SE	Operator: Dow Chemical Co Ltd Address: Seal Sands, Middlesbrough, Cleveland, TS2 1UD Process: Manufacture And Use Of Organic Chemicals Permit Number: BU9475	Original Permit Number: IPCMINVAR Date Approved: 21-5-2003 Effective Date: 22-5-2003 Status: Revoked - Now Ippc
X	425m SE	Operator: Seal Sands Chemicals Ltd Address: Seal Sands, Middlesbrough, Cleveland, TS2 1UB Process: Manufacture And Use Of Organic Chemicals Permit Number: BI6040	Original Permit Number: IPCAPP Date Approved: 27-10-2000 Effective Date: 13-11-2000 Status: Superseded By Variation
X	425m SE	Operator: Seal Sands Chemicals Ltd Address: Seal Sands, Middlesbrough, Cleveland, TS2 1UB Process: Manufacture And Use Of Organic Chemicals Permit Number: BV6218	Original Permit Number: IPCMINVAR Date Approved: 4-9-2003 Effective Date: 5-9-2003 Status: Revoked - Now Ippc

This data is sourced from the Environment Agency and Natural Resources Wales.



4.10 Licensed industrial activities (Part A(1))

Records within 500m
150

Records of Part A(1) installations regulated under the Environmental Permitting (England and Wales) Regulations 2016 for the release of substances to the environment.

Features are displayed on the Current industrial land use map on [page 44](#) >

ID	Location	Details	
C	49m SW	Operator: RWE COGEN UK LIMITED Installation Name: Teesside Crude Oil StabilisationTerminal EPR/RP3130LN Process: COMBUSTION; ANY FUEL =>50MW Permit Number: RP3130LN Original Permit Number: RP3130LN	EPR Reference: EPR/RP3130LN Issue Date: 19/09/2016 Effective Date: 19/09/2016 Last date noted as effective: 29/10/2024 Status: Superseded
C	49m SW	Operator: RWE GENERATION UK PLC Installation Name: Seal Sands Power Station - EPR/CP3939QN Process: COMBUSTION; ANY FUEL =>50MW Permit Number: CP3939QN Original Permit Number: CP3939QN	EPR Reference: EPR/CP3939QN Issue Date: 22/03/2021 Effective Date: 22/03/2021 Last date noted as effective: 29/10/2024 Status: Surrendered
C	49m SW	Operator: RWE Generation UK Plc Installation Name: Seal Sands Power Station - EPR/CP3939QN Process: COMBUSTION; ANY FUEL =>50MW Permit Number: UP3306BD Original Permit Number: CP3939QN	EPR Reference: - Issue Date: 06/05/2020 Effective Date: 06/05/2020 Last date noted as effective: 21/03/2023 Status: Superseded
C	49m SW	Operator: Npower Cogen Ltd Installation Name: Teesside Crude Oil StabilisationTerminal EPR/RP3130LN Process: COMBUSTION; ANY FUEL =>50MW Permit Number: BP3834AT Original Permit Number: RP3130LN	EPR Reference: - Issue Date: 21/12/2015 Effective Date: 01/01/2016 Last date noted as effective: 21/03/2023 Status: Superseded
C	49m SW	Operator: RWE Cogen UK Limited Installation Name: Teesside Crude Oil StabilisationTerminal EPR/RP3130LN Process: COMBUSTION; ANY FUEL =>50MW Permit Number: KP3234DT Original Permit Number: RP3130LN	EPR Reference: - Issue Date: 19/09/2016 Effective Date: 19/09/2016 Last date noted as effective: 21/03/2023 Status: Superseded
C	49m SW	Operator: RWE Generation UK Plc Installation Name: Seal Sands Power Station - EPR/CP3939QN Process: COMBUSTION; ANY FUEL =>50MW Permit Number: QP3507LK Original Permit Number: CP3939QN	EPR Reference: - Issue Date: 22/03/2021 Effective Date: 22/03/2021 Last date noted as effective: 21/03/2023 Status: Effective



ID	Location	Details	
N	73m E	Operator: SHANKS CHEMICAL SERVICES LIMITED Installation Name: SEAL SANDS SPECIALITY ORGANICS Process: ASSOCIATED PROCESS Permit Number: BU5364IJ Original Permit Number: BU5364IJ	EPR Reference: EPR/BU5364IJ Issue Date: 27/05/2005 Effective Date: 30/05/2005 Last date noted as effective: 29/10/2024 Status: Superseded
N	73m E	Operator: Aurorium UK Limited Installation Name: Seal Sands Process: DISPOSAL OF > 50 T/D NON-HAZARDOUS WASTE (> 100 T/D IF ONLY AD) INVOLVING BIOLOGICAL TREATMENT Permit Number: VP3809PL Original Permit Number: VP3809PL	EPR Reference: EPR/VP3809PL Issue Date: 17/06/2020 Effective Date: 17/06/2020 Last date noted as effective: 29/10/2024 Status: Superseded
N	73m E	Operator: VEOLIA ES (UK) LIMITED Installation Name: Seal Sands EPR/WP3030DT Process: DISPOSAL OF > 50 T/D NON-HAZARDOUS WASTE (> 100 T/D IF ONLY AD) INVOLVING BIOLOGICAL TREATMENT Permit Number: WP3030DT Original Permit Number: WP3030DT	EPR Reference: EPR/WP3030DT Issue Date: 22/07/2016 Effective Date: 22/07/2016 Last date noted as effective: 29/10/2024 Status: Superseded
N	73m E	Operator: VEOLIA WATER INDUSTRIAL OUTSOURCING LIMITED Installation Name: Seal Sands EPR/EP3139CH Process: DISPOSAL OF > 50 T/D NON-HAZARDOUS WASTE (> 100 T/D IF ONLY AD) INVOLVING BIOLOGICAL TREATMENT Permit Number: EP3139CH Original Permit Number: EP3139CH	EPR Reference: EPR/EP3139CH Issue Date: 14/10/2014 Effective Date: 14/10/2014 Last date noted as effective: 29/10/2024 Status: Superseded
N	73m E	Operator: LAPORTE INDUSTRIES LTD Installation Name: - Process: ORGANIC CHEMICALS; PHOSPHORUS CONTAINING COMPOUNDS EG SUBSTITUTED PHOSPHINES Permit Number: BV5971 Original Permit Number: BV5971	EPR Reference: - Issue Date: - Effective Date: - Last date noted as effective: 01/10/2004 Status: SUPERSEDED BY PAS
N	73m E	Operator: LAPORTE INDUSTRIES LTD Installation Name: - Process: ORGANIC CHEMICALS; ANY OTHER ORGANIC COMPOUNDS (NOT DESCRIBED 4.1 A(1)(A)) Permit Number: BV5971 Original Permit Number: BV5971	EPR Reference: - Issue Date: - Effective Date: - Last date noted as effective: 01/10/2004 Status: SUPERSEDED BY PAS
N	73m E	Operator: LAPORTE INDUSTRIES LTD Installation Name: - Process: ORGANIC CHEMICALS; HYDROCARBONS EG AROMATICS Permit Number: BV5971 Original Permit Number: BV5971	EPR Reference: - Issue Date: - Effective Date: - Last date noted as effective: 01/10/2004 Status: SUPERSEDED BY PAS



ID	Location	Details	
N	73m E	Operator: LAPORTE INDUSTRIES LTD Installation Name: - Process: ORGANIC CHEMICALS; OXYGEN CONTAINING COMPOUNDS EG ALCOHOLS Permit Number: BV5971 Original Permit Number: BV5971	EPR Reference: - Issue Date: - Effective Date: - Last date noted as effective: 01/10/2004 Status: SUPERSEDED BY PAS
N	73m E	Operator: LAPORTE INDUSTRIES LTD Installation Name: - Process: WASTE INCINERATION; ANY SPECIFIED WASTE CHEMICALS (BROMINE..ZINC) Permit Number: BV5971 Original Permit Number: BV5971	EPR Reference: - Issue Date: - Effective Date: - Last date noted as effective: 01/10/2004 Status: SUPERSEDED BY PAS
N	73m E	Operator: SHANKS CHEMICAL SERVICES LTD Installation Name: - Process: ASSOCIATED PROCESS Permit Number: BU5364 Original Permit Number: BU5364	EPR Reference: - Issue Date: 27/11/2003 Effective Date: 28/11/2003 Last date noted as effective: 01/10/2004 Status: SUPERSEDED BY PAS
N	73m E	Operator: LAPORTE INDUSTRIES LTD Installation Name: - Process: ORGANIC CHEMICALS; PLASTIC MATERIALS EG POLYMERS Permit Number: BV5971 Original Permit Number: BV5971	EPR Reference: - Issue Date: - Effective Date: - Last date noted as effective: 01/10/2004 Status: SUPERSEDED BY PAS
N	73m E	Operator: LAPORTE INDUSTRIES LTD Installation Name: - Process: ORGANIC CHEMICALS; HALOGEN CONTAINING COMPOUNDS EG HALOCARBONS Permit Number: BV5971 Original Permit Number: BV5971	EPR Reference: - Issue Date: - Effective Date: - Last date noted as effective: 01/10/2004 Status: SUPERSEDED BY PAS
N	73m E	Operator: Veolia Water Industrial Outsourcing Limited Installation Name: Seal Sands EPR/EP3139CH Process: ASSOCIATED PROCESS Permit Number: FP3235CU Original Permit Number: EP3139CH	EPR Reference: - Issue Date: 04/02/2012 Effective Date: 04/02/2012 Last date noted as effective: 21/03/2023 Status: Superceded
N	73m E	Operator: Veolia Water Industrial Outsourcing Limited Installation Name: Seal Sands EPR/EP3139CH Process: DISPOSAL OF > 50 T/D NON-HAZARDOUS WASTE (> 100 T/D IF ONLY AD) INVOLVING BIOLOGICAL TREATMENT Permit Number: PP3635WR Original Permit Number: EP3139CH	EPR Reference: - Issue Date: 14/10/2014 Effective Date: 14/10/2014 Last date noted as effective: 21/03/2023 Status: Superceded



ID	Location	Details	
N	73m E	Operator: Veolia Water Industrial Outsourcing Limited Installation Name: Seal Sands EPR/EP3139CH Process: OTHER WASTE DISPOSAL; NON-HAZARDOUS WASTE >50T/D BY BIOLOGICAL TREATMENT Permit Number: FP3235CU Original Permit Number: EP3139CH	EPR Reference: - Issue Date: 04/02/2012 Effective Date: 04/02/2012 Last date noted as effective: 21/03/2023 Status: Superseded
N	73m E	Operator: Shanks Chemical Services Ltd Installation Name: SEAL SANDS SPECIALITY ORGANICS Process: ASSOCIATED PROCESS Permit Number: EP3930BG Original Permit Number: BU5364IJ	EPR Reference: - Issue Date: 27/05/2005 Effective Date: 30/05/2005 Last date noted as effective: 21/03/2023 Status: Superseded
N	73m E	Operator: LAPORTE INDUSTRIES LTD Installation Name: - Process: ORGANIC CHEMICALS; NITROGEN CONTAINING COMPOUNDS EG AMINES Permit Number: BV5971 Original Permit Number: BV5971	EPR Reference: - Issue Date: - Effective Date: - Last date noted as effective: 01/10/2004 Status: SUPERSEDED BY PAS
N	73m E	Operator: Veolia Water Industrial Outsourcing Limited Installation Name: Seal Sands EPR/EP3139CH Process: ASSOCIATED PROCESS Permit Number: EP3139CH Original Permit Number: EP3139CH	EPR Reference: - Issue Date: 02/02/2012 Effective Date: 02/02/2012 Last date noted as effective: 21/03/2023 Status: Superseded
N	73m E	Operator: Veolia Water Industrial Outsourcing Limited Installation Name: Seal Sands EPR/EP3139CH Process: DISPOSAL OF > 50 T/D NON-HAZARDOUS WASTE (> 100 T/D IF ONLY AD) INVOLVING BIOLOGICAL TREATMENT Permit Number: CP3538EV Original Permit Number: EP3139CH	EPR Reference: - Issue Date: 26/11/2013 Effective Date: 26/11/2013 Last date noted as effective: 21/03/2023 Status: Superseded
N	73m E	Operator: VERTELLUS SPECIALTIES UK LIMITED Installation Name: Seal Sands Process: DISPOSAL OF > 50 T/D NON-HAZARDOUS WASTE (> 100 T/D IF ONLY AD) INVOLVING BIOLOGICAL TREATMENT Permit Number: QP3909BH Original Permit Number: VP3809PL	EPR Reference: - Issue Date: 17/06/2020 Effective Date: 17/06/2020 Last date noted as effective: 21/03/2023 Status: Superseded
N	73m E	Operator: LAPORTE INDUSTRIES LTD Installation Name: - Process: ORGANIC CHEMICALS; ORGANOMETALLIC COMPOUNDS EG LEAD ALKYLs Permit Number: BV5971 Original Permit Number: BV5971	EPR Reference: - Issue Date: - Effective Date: - Last date noted as effective: 01/10/2004 Status: SUPERSEDED BY PAS



ID	Location	Details	
N	73m E	Operator: LAPORTE INDUSTRIES LTD Installation Name: - Process: ORGANIC CHEMICALS; SULPHUR CONTAINING COMPOUNDS EG SULPHIDES Permit Number: BV5971 Original Permit Number: BV5971	EPR Reference: - Issue Date: - Effective Date: - Last date noted as effective: 01/10/2004 Status: SUPERSEDED BY PAS
P	129m E	Operator: Aurorium UK Limited Installation Name: Vertellus Specialities UK Limited EPR/BU0311IX Process: ORGANIC CHEMICALS; OXYGEN CONTAINING COMPOUNDS EG ALCOHOLS Permit Number: BU0311IX Original Permit Number: BU0311IX	EPR Reference: EPR/BU0311IX Issue Date: 17/06/2020 Effective Date: 17/06/2020 Last date noted as effective: 29/10/2024 Status: Effective
P	129m E	Operator: Aurorium UK Limited Installation Name: Vertellus Specialities UK Limited EPR/BU0311IX Process: ORGANIC CHEMICALS; NITROGEN CONTAINING COMPOUNDS EG AMINES Permit Number: BU0311IX Original Permit Number: BU0311IX	EPR Reference: EPR/BU0311IX Issue Date: 17/06/2020 Effective Date: 17/06/2020 Last date noted as effective: 29/10/2024 Status: Effective
P	129m E	Operator: Aurorium UK Limited Installation Name: Vertellus Specialities UK Limited EPR/BU0311IX Process: ORGANIC CHEMICALS; PHOSPHORUS CONTAINING COMPOUNDS EG SUBSTITUTED PHOSPHINES Permit Number: BU0311IX Original Permit Number: BU0311IX	EPR Reference: EPR/BU0311IX Issue Date: 17/06/2020 Effective Date: 17/06/2020 Last date noted as effective: 29/10/2024 Status: Effective
P	129m E	Operator: Aurorium UK Limited Installation Name: Vertellus Specialities UK Limited EPR/BU0311IX Process: ORGANIC CHEMICALS; HALOGEN CONTAINING COMPOUNDS EG HALOCARBONS Permit Number: BU0311IX Original Permit Number: BU0311IX	EPR Reference: EPR/BU0311IX Issue Date: 17/06/2020 Effective Date: 17/06/2020 Last date noted as effective: 29/10/2024 Status: Effective
P	129m E	Operator: Vertellus Specialities UK Ltd Installation Name: Seal Sands Process: ORGANIC CHEMICALS; NITROGEN CONTAINING COMPOUNDS EG AMINES Permit Number: BP3237PA Original Permit Number: BU0311IX	EPR Reference: - Issue Date: 23/07/2004 Effective Date: 31/07/2004 Last date noted as effective: 21/03/2023 Status: Superceded



ID	Location	Details	
P	129m E	Operator: Vertellus Specialities UK Ltd Installation Name: Seal Sands Process: ORGANIC CHEMICALS; OXYGEN CONTAINING COMPOUNDS EG ALCOHOLS Permit Number: BP3237PA Original Permit Number: BU0311IX	EPR Reference: - Issue Date: 23/07/2004 Effective Date: 31/07/2004 Last date noted as effective: 21/03/2023 Status: Superceded
P	129m E	Operator: Vertellus Specialities UK Ltd Installation Name: Seal Sands Process: ORGANIC CHEMICALS; SULPHUR CONTAINING COMPOUNDS EG SULPHIDES Permit Number: BP3237PA Original Permit Number: BU0311IX	EPR Reference: - Issue Date: 23/07/2004 Effective Date: 31/07/2004 Last date noted as effective: 21/03/2023 Status: Superceded
P	129m E	Operator: Vertellus Specialities UK Ltd Installation Name: Seal Sands - EPR/BU0311IX Process: ORGANIC CHEMICALS; OXYGEN CONTAINING COMPOUNDS EG ALCOHOLS Permit Number: FP3036TD Original Permit Number: BU0311IX	EPR Reference: - Issue Date: 25/08/2010 Effective Date: 25/08/2010 Last date noted as effective: 21/03/2023 Status: Superceded
P	129m E	Operator: Vertellus Specialities UK Ltd Installation Name: Seal Sands Process: ORGANIC CHEMICALS; HALOGEN CONTAINING COMPOUNDS EG HALOCARBONS Permit Number: ZP3932SB Original Permit Number: BU0311IX	EPR Reference: - Issue Date: 05/05/2005 Effective Date: 30/04/2005 Last date noted as effective: 21/03/2023 Status: Superceded
P	129m E	Operator: Vertellus Specialities UK Ltd Installation Name: Seal Sands Process: ORGANIC CHEMICALS; OXYGEN CONTAINING COMPOUNDS EG ALCOHOLS Permit Number: ZP3932SB Original Permit Number: BU0311IX	EPR Reference: - Issue Date: 05/05/2005 Effective Date: 30/04/2005 Last date noted as effective: 21/03/2023 Status: Superceded
P	129m E	Operator: Vertellus Specialities UK Ltd Installation Name: Seal Sands Process: ORGANIC CHEMICALS; PHOSPHORUS CONTAINING COMPOUNDS EG SUBSTITUTED PHOSPHINES Permit Number: ZP3932SB Original Permit Number: BU0311IX	EPR Reference: - Issue Date: 05/05/2005 Effective Date: 30/04/2005 Last date noted as effective: 21/03/2023 Status: Superceded
P	129m E	Operator: Vertellus Specialities UK Ltd Installation Name: Seal Sands Process: ORGANIC CHEMICALS; SULPHUR CONTAINING COMPOUNDS EG SULPHIDES Permit Number: ZP3932SB Original Permit Number: BU0311IX	EPR Reference: - Issue Date: 05/05/2005 Effective Date: 30/04/2005 Last date noted as effective: 21/03/2023 Status: Superceded



ID	Location	Details	
P	129m E	Operator: Vertellus Specialities UK Ltd Installation Name: Seal Sands Process: ORGANIC CHEMICALS; PHOSPHORUS CONTAINING COMPOUNDS EG SUBSTITUTED PHOSPHINES Permit Number: BP3237PA Original Permit Number: BU0311IX	EPR Reference: - Issue Date: 23/07/2004 Effective Date: 31/07/2004 Last date noted as effective: 21/03/2023 Status: Superseded
P	129m E	Operator: Vertellus Specialities UK Ltd Installation Name: Seal Sands Process: ORGANIC CHEMICALS; NITROGEN CONTAINING COMPOUNDS EG AMINES Permit Number: QP3635QN Original Permit Number: BU0311IX	EPR Reference: - Issue Date: 11/04/2019 Effective Date: 11/04/2019 Last date noted as effective: 21/03/2023 Status: Superseded
P	129m E	Operator: Vertellus Specialities UK Ltd Installation Name: Seal Sands Process: ORGANIC CHEMICALS; NITROGEN CONTAINING COMPOUNDS EG AMINES Permit Number: ZP3932SB Original Permit Number: BU0311IX	EPR Reference: - Issue Date: 05/05/2005 Effective Date: 30/04/2005 Last date noted as effective: 21/03/2023 Status: Superseded
P	129m E	Operator: Vertellus Specialities UK Ltd Installation Name: Seal Sands Process: ORGANIC CHEMICALS; HALOGEN CONTAINING COMPOUNDS EG HALOCARBONS Permit Number: QP3635QN Original Permit Number: BU0311IX	EPR Reference: - Issue Date: 11/04/2019 Effective Date: 11/04/2019 Last date noted as effective: 21/03/2023 Status: Superseded
P	129m E	Operator: Vertellus Specialities UK Ltd Installation Name: Seal Sands Process: ORGANIC CHEMICALS; OXYGEN CONTAINING COMPOUNDS EG ALCOHOLS Permit Number: QP3635QN Original Permit Number: BU0311IX	EPR Reference: - Issue Date: 11/04/2019 Effective Date: 11/04/2019 Last date noted as effective: 21/03/2023 Status: Superseded
P	129m E	Operator: Vertellus Specialities UK Ltd Installation Name: Seal Sands Process: ORGANIC CHEMICALS; PHOSPHORUS CONTAINING COMPOUNDS EG SUBSTITUTED PHOSPHINES Permit Number: QP3635QN Original Permit Number: BU0311IX	EPR Reference: - Issue Date: 11/04/2019 Effective Date: 11/04/2019 Last date noted as effective: 21/03/2023 Status: Superseded
P	129m E	Operator: Vertellus Specialities UK Ltd Installation Name: Seal Sands Process: ORGANIC CHEMICALS; SULPHUR CONTAINING COMPOUNDS EG SULPHIDES Permit Number: QP3635QN Original Permit Number: BU0311IX	EPR Reference: - Issue Date: 11/04/2019 Effective Date: 11/04/2019 Last date noted as effective: 21/03/2023 Status: Superseded



ID	Location	Details	
P	129m E	Operator: Vertellus Specialities UK Ltd Installation Name: Seal Sands - EPR/BU0311IX Process: ORGANIC CHEMICALS; SULPHUR CONTAINING COMPOUNDS EG SULPHIDES Permit Number: FP3036TD Original Permit Number: BU0311IX	EPR Reference: - Issue Date: 25/08/2010 Effective Date: 25/08/2010 Last date noted as effective: 21/03/2023 Status: Superseded
P	129m E	Operator: Vertellus Specialities UK Ltd Installation Name: Seal Sands Process: ORGANIC CHEMICALS; HALOGEN CONTAINING COMPOUNDS EG HALOCARBONS Permit Number: BP3237PA Original Permit Number: BU0311IX	EPR Reference: - Issue Date: 23/07/2004 Effective Date: 31/07/2004 Last date noted as effective: 21/03/2023 Status: Superseded
P	129m E	Operator: Vertellus Specialities UK Ltd Installation Name: Seal Sands Process: ORGANIC CHEMICALS; SULPHUR CONTAINING COMPOUNDS EG SULPHIDES Permit Number: BU0311IX Original Permit Number: BU0311IX	EPR Reference: - Issue Date: 28/11/2003 Effective Date: 28/11/2003 Last date noted as effective: 21/03/2023 Status: Superseded
P	129m E	Operator: Vertellus Specialities UK Ltd Installation Name: Seal Sands - EPR/BU0311IX Process: ORGANIC CHEMICALS; HALOGEN CONTAINING COMPOUNDS EG HALOCARBONS Permit Number: FP3036TD Original Permit Number: BU0311IX	EPR Reference: - Issue Date: 25/08/2010 Effective Date: 25/08/2010 Last date noted as effective: 21/03/2023 Status: Superseded
P	129m E	Operator: Vertellus Specialities UK Ltd Installation Name: Seal Sands - EPR/BU0311IX Process: ORGANIC CHEMICALS; NITROGEN CONTAINING COMPOUNDS EG AMINES Permit Number: FP3036TD Original Permit Number: BU0311IX	EPR Reference: - Issue Date: 25/08/2010 Effective Date: 25/08/2010 Last date noted as effective: 21/03/2023 Status: Superseded
P	129m E	Operator: Vertellus Specialities UK Ltd Installation Name: Seal Sands - EPR/BU0311IX Process: ORGANIC CHEMICALS; PHOSPHORUS CONTAINING COMPOUNDS EG SUBSTITUTED PHOSPHINES Permit Number: FP3036TD Original Permit Number: BU0311IX	EPR Reference: - Issue Date: 25/08/2010 Effective Date: 25/08/2010 Last date noted as effective: 21/03/2023 Status: Superseded
T	268m E	Operator: VICTREX MANUFACTURING LIMITED Installation Name: Seal Sands BDF Manufacturing EPR/NP3339MT Process: ORGANIC CHEMICALS; OXYGEN CONTAINING COMPOUNDS EG ALCOHOLS Permit Number: NP3339MT Original Permit Number: NP3339MT	EPR Reference: EPR/NP3339MT Issue Date: 18/10/2013 Effective Date: 18/10/2013 Last date noted as effective: 29/10/2024 Status: Effective



ID	Location	Details	
T	268m E	Operator: VICTREX MANUFACTURING LIMITED Installation Name: SEAL SANDS BDF MANUFACTURING FACILTIY Process: ORGANIC CHEMICALS; OXYGEN CONTAINING COMPOUNDS EG ALCOHOLS Permit Number: ZP3438GE Original Permit Number: NP3339MT	EPR Reference: - Issue Date: - Effective Date: - Last date noted as effective: 06/01/2010 Status: DETERMINATION
T	268m E	Operator: Victrex Manufacturing Limited Installation Name: Seal Sands BDF Manufacturing EPR/NP3339MT Process: ORGANIC CHEMICALS; OXYGEN CONTAINING COMPOUNDS EG ALCOHOLS Permit Number: WP3032NQ Original Permit Number: NP3339MT	EPR Reference: - Issue Date: 18/10/2013 Effective Date: 18/10/2013 Last date noted as effective: 21/03/2023 Status: Effective
T	268m E	Operator: Victrex Manufacturing Limited Installation Name: Seal Sands BDF Manufacturing Process: ORGANIC CHEMICALS; OXYGEN CONTAINING COMPOUNDS EG ALCOHOLS Permit Number: DP3936UZ Original Permit Number: NP3339MT	EPR Reference: - Issue Date: 28/09/2007 Effective Date: 27/09/2007 Last date noted as effective: 21/03/2023 Status: Superseded
V	366m SE	Operator: DOW CHEMICAL CO LTD Installation Name: - Process: ORGANIC CHEMICALS; NITROGEN CONTAINING COMPOUNDS EG AMINES Permit Number: BV2719 Original Permit Number: BV2719	EPR Reference: - Issue Date: 21/04/2004 Effective Date: 21/04/2004 Last date noted as effective: 01/10/2004 Status: SUPERSEDED BY PAS
W	366m NE	Operator: CONOCOPHILLIPS (U.K.) TEESIDE OPERATOR LIMITED Installation Name: Teesside Crude Oil Stabilisation Terminal - EPR/NP3033LN Process: DISPOSAL OF > 50 T/D NON-HAZARDOUS WASTE (> 100 T/D IF ONLY AD) INVOLVING PHYSICO-CHEMICAL TREATMENT Permit Number: QP3004PD Original Permit Number: QP3004PD	EPR Reference: EPR/QP3004PD Issue Date: 06/08/2019 Effective Date: 06/08/2019 Last date noted as effective: 29/10/2024 Status: Effective
W	366m NE	Operator: CONOCOPHILLIPS (U.K.) TEESIDE OPERATOR LIMITED Installation Name: Teesside Crude Oil Stabilisation Terminal - EPR/NP3033LN Process: THE INCINERATION OF HAZARDOUS WASTE IN AN INCINERATION OR CO-INCINERATION PLANT WITH A CAPACITY EXCEEDING 10 TONNES PER DAY Permit Number: QP3004PD Original Permit Number: QP3004PD	EPR Reference: EPR/QP3004PD Issue Date: 06/08/2019 Effective Date: 06/08/2019 Last date noted as effective: 29/10/2024 Status: Effective



ID	Location	Details	
W	366m NE	Operator: CONOCOPHILLIPS (U.K.) TEESIDE OPERATOR LIMITED Installation Name: Teesside Crude Oil Stabilisation Terminal - EPR/NP3033LN Process: STABILISED CRUDE PETROLEUM Permit Number: QP3004PD Original Permit Number: QP3004PD	EPR Reference: EPR/QP3004PD Issue Date: 06/08/2019 Effective Date: 06/08/2019 Last date noted as effective: 29/10/2024 Status: Effective
W	366m NE	Operator: CHRYSOR PETROLEUM COMPANY UK LIMITED Installation Name: Teesside Crude Oil Stabilisation Terminal - EPR/NP3033LN Process: COMBUSTION; ANY FUEL =>50MW Permit Number: NP3033LN Original Permit Number: NP3033LN	EPR Reference: EPR/NP3033LN Issue Date: 26/10/2018 Effective Date: 28/10/2018 Last date noted as effective: 29/10/2024 Status: Superseded
W	366m NE	Operator: CONOCOPHILLIPS (U.K.) TEESIDE OPERATOR LIMITED Installation Name: Teesside Crude Oil Stabilisation Terminal - EPR/NP3033LN Process: DISPOSAL OR RECOVERY OF HAZARDOUS WASTE WITH A CAPACITY EXCEEDING 10 TONNES PER DAY INVOLVING PHYSICO-CHEMICAL TREATMENT Permit Number: QP3004PD Original Permit Number: QP3004PD	EPR Reference: EPR/QP3004PD Issue Date: 06/08/2019 Effective Date: 06/08/2019 Last date noted as effective: 29/10/2024 Status: Effective
W	366m NE	Operator: CHRYSOR PETROLEUM COMPANY UK LIMITED Installation Name: Teesside Crude Oil Stabilisation Terminal - EPR/NP3033LN Process: STABILISED CRUDE PETROLEUM Permit Number: NP3033LN Original Permit Number: NP3033LN	EPR Reference: EPR/NP3033LN Issue Date: 26/10/2018 Effective Date: 28/10/2018 Last date noted as effective: 29/10/2024 Status: Superseded
W	366m NE	Operator: CHRYSOR PETROLEUM COMPANY UK LIMITED Installation Name: Teesside Crude Oil Stabilisation Terminal - EPR/NP3033LN Process: THE INCINERATION OF HAZARDOUS WASTE IN AN INCINERATION OR CO-INCINERATION PLANT WITH A CAPACITY EXCEEDING 10 TONNES PER DAY Permit Number: NP3033LN Original Permit Number: NP3033LN	EPR Reference: EPR/NP3033LN Issue Date: 26/10/2018 Effective Date: 28/10/2018 Last date noted as effective: 29/10/2024 Status: Superseded



ID	Location	Details	
W	366m NE	Operator: CHRYSOR PETROLEUM COMPANY UK LIMITED Installation Name: Teesside Crude Oil Stabilisation Terminal - EPR/NP3033LN Process: DISPOSAL OR RECOVERY OF HAZARDOUS WASTE WITH A CAPACITY EXCEEDING 10 TONNES PER DAY INVOLVING PHYSICO-CHEMICAL TREATMENT Permit Number: NP3033LN Original Permit Number: NP3033LN	EPR Reference: EPR/NP3033LN Issue Date: 26/10/2018 Effective Date: 28/10/2018 Last date noted as effective: 29/10/2024 Status: Superseded
W	366m NE	Operator: CHRYSOR PETROLEUM COMPANY UK LIMITED Installation Name: Teesside Crude Oil Stabilisation Terminal - EPR/NP3033LN Process: DISPOSAL OF > 50 T/D NON-HAZARDOUS WASTE (> 100 T/D IF ONLY AD) INVOLVING PHYSICO-CHEMICAL TREATMENT Permit Number: NP3033LN Original Permit Number: NP3033LN	EPR Reference: EPR/NP3033LN Issue Date: 26/10/2018 Effective Date: 28/10/2018 Last date noted as effective: 29/10/2024 Status: Superseded
W	366m NE	Operator: CONOCOPHILLIPS PETROLEUM COMPANY UK LTD Installation Name: TEESSIDE CRUDE OIL STABILISATION TERMINAL Process: ASSOCIATED PROCESS Permit Number: DP3237RJ Original Permit Number: NP3033LN	EPR Reference: - Issue Date: - Effective Date: - Last date noted as effective: 03/12/2018 Status: DETERMINATION
W	366m NE	Operator: CONOCOPHILLIPS PETROLEUM COMPANY UK LTD Installation Name: TEESSIDE CRUDE OIL STABILISATION TERMINAL Process: COMBUSTION; ANY FUEL =>50MW Permit Number: DP3237RJ Original Permit Number: NP3033LN	EPR Reference: - Issue Date: - Effective Date: - Last date noted as effective: 03/12/2018 Status: DETERMINATION
W	366m NE	Operator: CONOCOPHILLIPS PETROLEUM COMPANY UK LTD Installation Name: TEESSIDE CRUDE OIL STABILISATION TERMINAL Process: LOADING/STORAGE/TREATMENT ETC OF CRUDE OIL Permit Number: DP3237RJ Original Permit Number: NP3033LN	EPR Reference: - Issue Date: - Effective Date: - Last date noted as effective: 03/12/2018 Status: DETERMINATION



ID	Location	Details	
W	366m NE	Operator: CONOCOPHILLIPS PETROLEUM COMPANY UK LTD Installation Name: TEESSIDE CRUDE OIL STABILISATION TERMINAL Process: LOADING/STORAGE/TREATMENT ETC OF STABILISED CRUDE PETROLEUM Permit Number: DP3237RJ Original Permit Number: NP3033LN	EPR Reference: - Issue Date: - Effective Date: - Last date noted as effective: 03/12/2018 Status: DETERMINATION
W	366m NE	Operator: CONOCOPHILLIPS PETROLEUM COMPANY UK LTD Installation Name: TEESSIDE CRUDE OIL STABILISATION TERMINAL Process: CREATED BY IED - DISPOSAL OF > 50 T/D NON-HAZARDOUS WASTE (> 100 T/D IF ONLY AD) INVOLVING PHYSICO-CHEMICAL TREATMENT Permit Number: GP3438NL Original Permit Number: NP3033LN	EPR Reference: - Issue Date: 29/05/2013 Effective Date: 29/05/2013 Last date noted as effective: 01/07/2013 Status: EFFECTIVE
W	366m NE	Operator: Conocophillips Petroleum Company UK Ltd Installation Name: Teesside Crude Oil Stabilisation Terminal Process: COMBUSTION; ANY FUEL =>50MW Permit Number: BP3838RH Original Permit Number: NP3033LN	EPR Reference: - Issue Date: 08/02/2016 Effective Date: 08/02/2016 Last date noted as effective: 21/03/2023 Status: Superseded
W	366m NE	Operator: Conocophillips Petroleum Company UK Ltd Installation Name: Teesside Crude Oil Stabilisation Terminal Process: LOADING/STORAGE/TREATMENT ETC OF STABILISED CRUDE PETROLEUM Permit Number: ZP3239XX Original Permit Number: NP3033LN	EPR Reference: - Issue Date: 20/12/2007 Effective Date: 20/12/2007 Last date noted as effective: 21/03/2023 Status: Superseded
W	366m NE	Operator: Conocophillips Petroleum Company UK Ltd Installation Name: Teesside Crude Oil Stabilisation Terminal Process: LOADING/STORAGE/TREATMENT ETC OF CRUDE OIL Permit Number: BP3838RH Original Permit Number: NP3033LN	EPR Reference: - Issue Date: 08/02/2016 Effective Date: 08/02/2016 Last date noted as effective: 21/03/2023 Status: Superseded
W	366m NE	Operator: Conocophillips Petroleum Company UK Ltd Installation Name: Teesside Crude Oil Stabilisation Terminal Process: ASSOCIATED PROCESS Permit Number: GP3438NL Original Permit Number: NP3033LN	EPR Reference: - Issue Date: 29/05/2013 Effective Date: 29/05/2013 Last date noted as effective: 21/03/2023 Status: Superseded



ID	Location	Details	
W	366m NE	Operator: Conocophillips Petroleum Company UK Ltd Installation Name: Teesside Crude Oil Stabilisation Terminal Process: LOADING/STORAGE/TREATMENT ETC OF CRUDE OIL Permit Number: GP3438NL Original Permit Number: NP3033LN	EPR Reference: - Issue Date: 29/05/2013 Effective Date: 29/05/2013 Last date noted as effective: 21/03/2023 Status: Superseded
W	366m NE	Operator: Conocophillips Petroleum Company UK Ltd Installation Name: Teesside Crude Oil Stabilisation Terminal Process: LOADING/STORAGE/TREATMENT ETC OF CRUDE OIL Permit Number: HP3734AZ Original Permit Number: NP3033LN	EPR Reference: - Issue Date: 24/12/2015 Effective Date: 01/01/2016 Last date noted as effective: 21/03/2023 Status: Superseded
W	366m NE	Operator: Conocophillips Petroleum Company UK Ltd Installation Name: Teesside Crude Oil Stabilisation Terminal Process: ASSOCIATED PROCESS Permit Number: NP3033LN Original Permit Number: NP3033LN	EPR Reference: - Issue Date: 01/05/2007 Effective Date: 01/05/2007 Last date noted as effective: 21/03/2023 Status: Superseded
W	366m NE	Operator: Conocophillips Petroleum Company UK Ltd Installation Name: Teesside Crude Oil Stabilisation Terminal Process: LOADING/STORAGE/TREATMENT ETC OF STABILISED CRUDE PETROLEUM Permit Number: NP3033LN Original Permit Number: NP3033LN	EPR Reference: - Issue Date: 01/05/2007 Effective Date: 01/05/2007 Last date noted as effective: 21/03/2023 Status: Superseded
W	366m NE	Operator: Conocophillips Petroleum Company UK Ltd Installation Name: Teesside Crude Oil Stabilisation Terminal Process: OTHER WASTE DISPOSAL; NON-HAZARDOUS WASTE >50T/D BY PHYSICO-CHEMICAL TREATMENT Permit Number: NP3033LN Original Permit Number: NP3033LN	EPR Reference: - Issue Date: 01/05/2007 Effective Date: 01/05/2007 Last date noted as effective: 21/03/2023 Status: Superseded
W	366m NE	Operator: Conocophillips Petroleum Company UK Ltd Installation Name: Teesside Crude Oil Stabilisation Terminal Process: LOADING/STORAGE/TREATMENT ETC OF CRUDE OIL Permit Number: QP3732UN Original Permit Number: NP3033LN	EPR Reference: - Issue Date: 10/02/2011 Effective Date: 10/02/2011 Last date noted as effective: 21/03/2023 Status: Superseded



ID	Location	Details	
W	366m NE	Operator: Conocophillips Petroleum Company UK Ltd Installation Name: Teesside Crude Oil Stabilisation Terminal Process: OTHER WASTE DISPOSAL; NON-HAZARDOUS WASTE >50T/D BY PHYSICO-CHEMICAL TREATMENT Permit Number: QP3732UN Original Permit Number: NP3033LN	EPR Reference: - Issue Date: 10/02/2011 Effective Date: 10/02/2011 Last date noted as effective: 21/03/2023 Status: Superseded
W	366m NE	Operator: Conocophillips Petroleum Company UK Ltd Installation Name: Teesside Crude Oil Stabilisation Terminal Process: LOADING/STORAGE/TREATMENT ETC OF ASSOCIATED GAS OR CONDENSATE Permit Number: ZP3239XX Original Permit Number: NP3033LN	EPR Reference: - Issue Date: 20/12/2007 Effective Date: 20/12/2007 Last date noted as effective: 21/03/2023 Status: Superseded
W	366m NE	Operator: Conocophillips Petroleum Company UK Ltd Installation Name: Teesside Crude Oil Stabilisation Terminal Process: COMBUSTION; ANY FUEL =>50MW Permit Number: GP3438NL Original Permit Number: NP3033LN	EPR Reference: - Issue Date: 29/05/2013 Effective Date: 29/05/2013 Last date noted as effective: 21/03/2023 Status: Superseded
W	366m NE	Operator: Conocophillips Petroleum Company UK Ltd Installation Name: Teesside Crude Oil Stabilisation Terminal Process: ASSOCIATED PROCESS Permit Number: HP3734AZ Original Permit Number: NP3033LN	EPR Reference: - Issue Date: 24/12/2015 Effective Date: 01/01/2016 Last date noted as effective: 21/03/2023 Status: Superseded
W	366m NE	Operator: Conocophillips Petroleum Company UK Ltd Installation Name: Teesside Crude Oil Stabilisation Terminal Process: COMBUSTION; ANY FUEL =>50MW Permit Number: QP3732UN Original Permit Number: NP3033LN	EPR Reference: - Issue Date: 10/02/2011 Effective Date: 10/02/2011 Last date noted as effective: 21/03/2023 Status: Superseded
W	366m NE	Operator: Conocophillips Petroleum Company UK Ltd Installation Name: Teesside Crude Oil Stabilisation Terminal Process: LOADING/STORAGE/TREATMENT ETC OF ASSOCIATED GAS OR CONDENSATE Permit Number: QP3732UN Original Permit Number: NP3033LN	EPR Reference: - Issue Date: 10/02/2011 Effective Date: 10/02/2011 Last date noted as effective: 21/03/2023 Status: Superseded
W	366m NE	Operator: Conocophillips Petroleum Company UK Ltd Installation Name: Teesside Crude Oil Stabilisation Terminal Process: OTHER WASTE DISPOSAL; NON-HAZARDOUS WASTE >50T/D BY PHYSICO-CHEMICAL TREATMENT Permit Number: ZP3239XX Original Permit Number: NP3033LN	EPR Reference: - Issue Date: 20/12/2007 Effective Date: 20/12/2007 Last date noted as effective: 21/03/2023 Status: Superseded



ID	Location	Details	
W	366m NE	Operator: Conocophillips Petroleum Company UK Ltd Installation Name: Teesside Crude Oil Stabilisation Terminal Process: COMBUSTION; ANY FUEL =>50MW Permit Number: HP3734AZ Original Permit Number: NP3033LN	EPR Reference: - Issue Date: 24/12/2015 Effective Date: 01/01/2016 Last date noted as effective: 21/03/2023 Status: Superceded
W	366m NE	Operator: Conocophillips Petroleum Company UK Ltd Installation Name: Teesside Crude Oil Stabilisation Terminal Process: DISPOSAL OF > 50 T/D NON-HAZARDOUS WASTE (> 100 T/D IF ONLY AD) INVOLVING PHYSICO-CHEMICAL TREATMENT Permit Number: HP3734AZ Original Permit Number: NP3033LN	EPR Reference: - Issue Date: 24/12/2015 Effective Date: 01/01/2016 Last date noted as effective: 21/03/2023 Status: Superceded
W	366m NE	Operator: Conocophillips Petroleum Company UK Ltd Installation Name: Teesside Crude Oil Stabilisation Terminal Process: LOADING/STORAGE/TREATMENT ETC OF STABILISED CRUDE PETROLEUM Permit Number: HP3734AZ Original Permit Number: NP3033LN	EPR Reference: - Issue Date: 24/12/2015 Effective Date: 01/01/2016 Last date noted as effective: 21/03/2023 Status: Superceded
W	366m NE	Operator: Conocophillips Petroleum Company UK Ltd Installation Name: Teesside Crude Oil Stabilisation Terminal Process: COMBUSTION; ANY FUEL =>50MW Permit Number: HP3734AZ Original Permit Number: NP3033LN	EPR Reference: - Issue Date: 24/12/2015 Effective Date: 01/01/2016 Last date noted as effective: 21/03/2023 Status: Superceded
W	366m NE	Operator: Conocophillips Petroleum Company UK Ltd Installation Name: Teesside Crude Oil Stabilisation Terminal Process: LOADING/STORAGE/TREATMENT ETC OF ASSOCIATED GAS OR CONDENSATE Permit Number: NP3033LN Original Permit Number: NP3033LN	EPR Reference: - Issue Date: 01/05/2007 Effective Date: 01/05/2007 Last date noted as effective: 21/03/2023 Status: Superceded
W	366m NE	Operator: Conocophillips Petroleum Company UK Ltd Installation Name: Teesside Crude Oil Stabilisation Terminal Process: LOADING/STORAGE/TREATMENT ETC OF STABILISED CRUDE PETROLEUM Permit Number: QP3732UN Original Permit Number: NP3033LN	EPR Reference: - Issue Date: 10/02/2011 Effective Date: 10/02/2011 Last date noted as effective: 21/03/2023 Status: Superceded



ID	Location	Details	
W	366m NE	Operator: Conocophillips Petroleum Company UK Ltd Installation Name: Teesside Crude Oil Stabilisation Terminal Process: ASSOCIATED PROCESS Permit Number: ZP3239XX Original Permit Number: NP3033LN	EPR Reference: - Issue Date: 20/12/2007 Effective Date: 20/12/2007 Last date noted as effective: 21/03/2023 Status: Superceded
W	366m NE	Operator: Conocophillips Petroleum Company UK Ltd Installation Name: Teesside Crude Oil Stabilisation Terminal Process: COMBUSTION; ANY FUEL =>50MW Permit Number: ZP3239XX Original Permit Number: NP3033LN	EPR Reference: - Issue Date: 20/12/2007 Effective Date: 20/12/2007 Last date noted as effective: 21/03/2023 Status: Superceded
W	366m NE	Operator: Conocophillips Petroleum Company UK Ltd Installation Name: Teesside Crude Oil Stabilisation Terminal Process: DISPOSAL OF > 50 T/D NON-HAZARDOUS WASTE (> 100 T/D IF ONLY AD) INVOLVING PHYSICO-CHEMICAL TREATMENT Permit Number: BP3838RH Original Permit Number: NP3033LN	EPR Reference: - Issue Date: 08/02/2016 Effective Date: 08/02/2016 Last date noted as effective: 21/03/2023 Status: Superceded
W	366m NE	Operator: Conocophillips Petroleum Company UK Ltd Installation Name: Teesside Crude Oil Stabilisation Terminal Process: LOADING/STORAGE/TREATMENT ETC OF STABILISED CRUDE PETROLEUM Permit Number: BP3838RH Original Permit Number: NP3033LN	EPR Reference: - Issue Date: 08/02/2016 Effective Date: 08/02/2016 Last date noted as effective: 21/03/2023 Status: Superceded
W	366m NE	Operator: Conocophillips Petroleum Company UK Ltd Installation Name: Teesside Crude Oil Stabilisation Terminal Process: STABILISED CRUDE PETROLEUM Permit Number: BP3838RH Original Permit Number: NP3033LN	EPR Reference: - Issue Date: 08/02/2016 Effective Date: 08/02/2016 Last date noted as effective: 21/03/2023 Status: Superceded
W	366m NE	Operator: Conocophillips Petroleum Company UK Ltd Installation Name: Teesside Crude Oil Stabilisation Terminal - EPR/NP3033LN Process: THE INCINERATION OF HAZARDOUS WASTE IN AN INCINERATION OR CO-INCINERATION PLANT WITH A CAPACITY EXCEEDING 10 TONNES PER DAY Permit Number: DP3237RJ Original Permit Number: NP3033LN	EPR Reference: - Issue Date: 26/10/2018 Effective Date: 28/10/2018 Last date noted as effective: 21/03/2023 Status: Superceded



ID	Location	Details	
W	366m NE	Operator: Conocophillips Petroleum Company UK Ltd Installation Name: Teesside Crude Oil Stabilisation Terminal Process: COMBUSTION; ANY FUEL =>50MW Permit Number: GP3438NL Original Permit Number: NP3033LN	EPR Reference: - Issue Date: 29/05/2013 Effective Date: 29/05/2013 Last date noted as effective: 21/03/2023 Status: Superceded
W	366m NE	Operator: Conocophillips Petroleum Company UK Ltd Installation Name: Teesside Crude Oil Stabilisation Terminal Process: COMBUSTION; ANY FUEL =>50MW Permit Number: BP3838RH Original Permit Number: NP3033LN	EPR Reference: - Issue Date: 08/02/2016 Effective Date: 08/02/2016 Last date noted as effective: 21/03/2023 Status: Superceded
W	366m NE	Operator: Conocophillips Petroleum Company UK Ltd Installation Name: Teesside Crude Oil Stabilisation Terminal Process: ASSOCIATED PROCESS Permit Number: BP3838RH Original Permit Number: NP3033LN	EPR Reference: - Issue Date: 08/02/2016 Effective Date: 08/02/2016 Last date noted as effective: 21/03/2023 Status: Superceded
W	366m NE	Operator: Conocophillips Petroleum Company UK Ltd Installation Name: Teesside Crude Oil Stabilisation Terminal - EPR/NP3033LN Process: COMBUSTION; ANY FUEL =>50MW Permit Number: DP3237RJ Original Permit Number: NP3033LN	EPR Reference: - Issue Date: 26/10/2018 Effective Date: 28/10/2018 Last date noted as effective: 21/03/2023 Status: Superceded
W	366m NE	Operator: Conocophillips Petroleum Company UK Ltd Installation Name: Teesside Crude Oil Stabilisation Terminal - EPR/NP3033LN Process: DISPOSAL OF > 50 T/D NON-HAZARDOUS WASTE (> 100 T/D IF ONLY AD) INVOLVING PHYSICO-CHEMICAL TREATMENT Permit Number: DP3237RJ Original Permit Number: NP3033LN	EPR Reference: - Issue Date: 26/10/2018 Effective Date: 28/10/2018 Last date noted as effective: 21/03/2023 Status: Superceded
W	366m NE	Operator: Conocophillips Petroleum Company UK Ltd Installation Name: Teesside Crude Oil Stabilisation Terminal - EPR/NP3033LN Process: DISPOSAL OR RECOVERY OF HAZARDOUS WASTE WITH A CAPACITY EXCEEDING 10 TONNES PER DAY INVOLVING PHYSICO-CHEMICAL TREATMENT Permit Number: DP3237RJ Original Permit Number: NP3033LN	EPR Reference: - Issue Date: 26/10/2018 Effective Date: 28/10/2018 Last date noted as effective: 21/03/2023 Status: Superceded
W	366m NE	Operator: Conocophillips Petroleum Company UK Ltd Installation Name: Teesside Crude Oil Stabilisation Terminal - EPR/NP3033LN Process: STABILISED CRUDE PETROLEUM Permit Number: DP3237RJ Original Permit Number: NP3033LN	EPR Reference: - Issue Date: 26/10/2018 Effective Date: 28/10/2018 Last date noted as effective: 21/03/2023 Status: Superceded



ID	Location	Details	
W	366m NE	Operator: Conocophillips Petroleum Company UK Ltd Installation Name: Teesside Crude Oil Stabilisation Terminal Process: DISPOSAL OF > 50 T/D NON-HAZARDOUS WASTE (> 100 T/D IF ONLY AD) INVOLVING PHYSICO-CHEMICAL TREATMENT Permit Number: GP3438NL Original Permit Number: NP3033LN	EPR Reference: - Issue Date: 29/05/2013 Effective Date: 29/05/2013 Last date noted as effective: 21/03/2023 Status: Superseded
W	366m NE	Operator: Conocophillips Petroleum Company UK Ltd Installation Name: Teesside Crude Oil Stabilisation Terminal Process: ASSOCIATED PROCESS Permit Number: QP3732UN Original Permit Number: NP3033LN	EPR Reference: - Issue Date: 10/02/2011 Effective Date: 10/02/2011 Last date noted as effective: 21/03/2023 Status: Superseded
W	366m NE	Operator: Conocophillips Petroleum Company UK Ltd Installation Name: Teesside Crude Oil Stabilisation Terminal Process: LOADING/STORAGE/TREATMENT ETC OF CRUDE OIL Permit Number: NP3033LN Original Permit Number: NP3033LN	EPR Reference: - Issue Date: 01/05/2007 Effective Date: 01/05/2007 Last date noted as effective: 21/03/2023 Status: Superseded
W	366m NE	Operator: Conocophillips Petroleum Company UK Ltd Installation Name: Teesside Crude Oil Stabilisation Terminal Process: LOADING/STORAGE/TREATMENT ETC OF STABILISED CRUDE PETROLEUM Permit Number: GP3438NL Original Permit Number: NP3033LN	EPR Reference: - Issue Date: 29/05/2013 Effective Date: 29/05/2013 Last date noted as effective: 21/03/2023 Status: Superseded
W	366m NE	Operator: Conocophillips Petroleum Company UK Ltd Installation Name: Teesside Crude Oil Stabilisation Terminal Process: LOADING/STORAGE/TREATMENT ETC OF CRUDE OIL Permit Number: ZP3239XX Original Permit Number: NP3033LN	EPR Reference: - Issue Date: 20/12/2007 Effective Date: 20/12/2007 Last date noted as effective: 21/03/2023 Status: Superseded
S	387m E	Operator: Aurorium UK Limited Installation Name: Vertellus Specialities UK Limited EPR/BU0311IX Process: ORGANIC CHEMICALS; HYDROCARBONS EG AROMATICS Permit Number: BU0311IX Original Permit Number: BU0311IX	EPR Reference: EPR/BU0311IX Issue Date: 17/06/2020 Effective Date: 17/06/2020 Last date noted as effective: 29/10/2024 Status: Effective



ID	Location	Details	
S	387m E	Operator: Aurorium UK Limited Installation Name: Vertellus Specialities UK Limited EPR/BU0311IX Process: ORGANIC CHEMICALS; SULPHUR CONTAINING COMPOUNDS EG SULPHIDES Permit Number: BU0311IX Original Permit Number: BU0311IX	EPR Reference: EPR/BU0311IX Issue Date: 17/06/2020 Effective Date: 17/06/2020 Last date noted as effective: 29/10/2024 Status: Effective
S	387m E	Operator: Vertellus Specialities UK Limited Installation Name: Vertellus Specialities UK Limited EPR/BU0311IX Process: ORGANIC CHEMICALS; HYDROCARBONS EG AROMATICS Permit Number: AP3803BM Original Permit Number: BU0311IX	EPR Reference: - Issue Date: 17/06/2020 Effective Date: 17/06/2020 Last date noted as effective: 21/03/2023 Status: Superseded
S	387m E	Operator: Vertellus Specialities UK Limited Installation Name: Vertellus Specialities UK Limited EPR/BU0311IX Process: ORGANIC CHEMICALS; HYDROCARBONS EG AROMATICS Permit Number: HP3100SK Original Permit Number: BU0311IX	EPR Reference: - Issue Date: 17/06/2020 Effective Date: 17/06/2020 Last date noted as effective: 21/03/2023 Status: Effective
S	387m E	Operator: Vertellus Specialities UK Limited Installation Name: Vertellus Specialities UK Limited EPR/BU0311IX Process: ORGANIC CHEMICALS; OXYGEN CONTAINING COMPOUNDS EG ALCOHOLS Permit Number: HP3100SK Original Permit Number: BU0311IX	EPR Reference: - Issue Date: 17/06/2020 Effective Date: 17/06/2020 Last date noted as effective: 21/03/2023 Status: Effective
S	387m E	Operator: Vertellus Specialities UK Limited Installation Name: Vertellus Specialities UK Limited EPR/BU0311IX Process: ORGANIC CHEMICALS; NITROGEN CONTAINING COMPOUNDS EG AMINES Permit Number: AP3803BM Original Permit Number: BU0311IX	EPR Reference: - Issue Date: 17/06/2020 Effective Date: 17/06/2020 Last date noted as effective: 21/03/2023 Status: Superseded
S	387m E	Operator: Vertellus Specialities UK Limited Installation Name: Vertellus Specialities UK Limited EPR/BU0311IX Process: ORGANIC CHEMICALS; SULPHUR CONTAINING COMPOUNDS EG SULPHIDES Permit Number: AP3803BM Original Permit Number: BU0311IX	EPR Reference: - Issue Date: 17/06/2020 Effective Date: 17/06/2020 Last date noted as effective: 21/03/2023 Status: Superseded



ID	Location	Details	
S	387m E	Operator: Vertellus Specialities UK Limited Installation Name: Vertellus Specialities UK Limited EPR/BU0311IX Process: ORGANIC CHEMICALS; HALOGEN CONTAINING COMPOUNDS EG HALOCARBONS Permit Number: HP3100SK Original Permit Number: BU0311IX	EPR Reference: - Issue Date: 17/06/2020 Effective Date: 17/06/2020 Last date noted as effective: 21/03/2023 Status: Effective
S	387m E	Operator: Vertellus Specialities UK Limited Installation Name: Vertellus Specialities UK Limited EPR/BU0311IX Process: ORGANIC CHEMICALS; PHOSPHORUS CONTAINING COMPOUNDS EG SUBSTITUTED PHOSPHINES Permit Number: HP3100SK Original Permit Number: BU0311IX	EPR Reference: - Issue Date: 17/06/2020 Effective Date: 17/06/2020 Last date noted as effective: 21/03/2023 Status: Effective
S	387m E	Operator: Vertellus Specialities UK Limited Installation Name: Vertellus Specialities UK Limited EPR/BU0311IX Process: ORGANIC CHEMICALS; OXYGEN CONTAINING COMPOUNDS EG ALCOHOLS Permit Number: AP3803BM Original Permit Number: BU0311IX	EPR Reference: - Issue Date: 17/06/2020 Effective Date: 17/06/2020 Last date noted as effective: 21/03/2023 Status: Superseded
S	387m E	Operator: Vertellus Specialities UK Limited Installation Name: Vertellus Specialities UK Limited EPR/BU0311IX Process: ORGANIC CHEMICALS; PHOSPHORUS CONTAINING COMPOUNDS EG SUBSTITUTED PHOSPHINES Permit Number: AP3803BM Original Permit Number: BU0311IX	EPR Reference: - Issue Date: 17/06/2020 Effective Date: 17/06/2020 Last date noted as effective: 21/03/2023 Status: Superseded
S	387m E	Operator: Vertellus Specialities UK Limited Installation Name: Vertellus Specialities UK Limited EPR/BU0311IX Process: ORGANIC CHEMICALS; NITROGEN CONTAINING COMPOUNDS EG AMINES Permit Number: HP3100SK Original Permit Number: BU0311IX	EPR Reference: - Issue Date: 17/06/2020 Effective Date: 17/06/2020 Last date noted as effective: 21/03/2023 Status: Effective
S	387m E	Operator: Vertellus Specialities UK Limited Installation Name: Vertellus Specialities UK Limited EPR/BU0311IX Process: ORGANIC CHEMICALS; SULPHUR CONTAINING COMPOUNDS EG SULPHIDES Permit Number: HP3100SK Original Permit Number: BU0311IX	EPR Reference: - Issue Date: 17/06/2020 Effective Date: 17/06/2020 Last date noted as effective: 21/03/2023 Status: Effective



ID	Location	Details	
S	387m E	Operator: Vertellus Specialities UK Limited Installation Name: Vertellus Specialities UK Limited EPR/BU0311IX Process: ORGANIC CHEMICALS; HALOGEN CONTAINING COMPOUNDS EG HALOCARBONS Permit Number: AP3803BM Original Permit Number: BU0311IX	EPR Reference: - Issue Date: 17/06/2020 Effective Date: 17/06/2020 Last date noted as effective: 21/03/2023 Status: Superseded
X	425m SE	Operator: HARVEST ENERGY LIMITED Installation Name: Harvest Energy Limited Process: ORGANIC CHEMICALS; OXYGEN CONTAINING COMPOUNDS EG ALCOHOLS Permit Number: VP3635TJ Original Permit Number: VP3635TJ	EPR Reference: EPR/VP3635TJ Issue Date: 02/09/2014 Effective Date: 02/09/2014 Last date noted as effective: 29/10/2024 Status: Superseded
X	425m SE	Operator: BIOFUELS CORPORATION TRADING LIMITED Installation Name: Seal Sands Biodiesel / Glycerine Plant Process: ORGANIC CHEMICALS; OXYGEN CONTAINING COMPOUNDS EG ALCOHOLS Permit Number: BU1601IC Original Permit Number: BU1601IC	EPR Reference: EPR/BU1601IC Issue Date: 03/12/2009 Effective Date: 03/12/2009 Last date noted as effective: 29/10/2024 Status: Superseded
X	425m SE	Operator: GREENERGY BIOFUELS TEESSIDE LIMITED Installation Name: Seal Sands Terminal (South Site) - EPR/EP3334AS Process: ORGANIC CHEMICALS; OXYGEN CONTAINING COMPOUNDS EG ALCOHOLS Permit Number: EP3334AS Original Permit Number: EP3334AS	EPR Reference: EPR/EP3334AS Issue Date: 11/05/2022 Effective Date: 11/05/2022 Last date noted as effective: 29/10/2024 Status: Effective
X	425m SE	Operator: BIOFUELS CORPORATION TRADING LIMITED Installation Name: Seal Sands Biodiesel / Glycerine Plant Process: ORGANIC CHEMICALS; OXYGEN CONTAINING COMPOUNDS EG ALCOHOLS Permit Number: BU1601IC Original Permit Number: BU1601IC	EPR Reference: EPR/BU1601IC Issue Date: 03/12/2009 Effective Date: 03/12/2009 Last date noted as effective: 29/10/2024 Status: Superseded
X	425m SE	Operator: HARVEST ENERGY LIMITED Installation Name: Harvest Energy Limited Process: ORGANIC CHEMICALS; OXYGEN CONTAINING COMPOUNDS EG ALCOHOLS Permit Number: VP3635TJ Original Permit Number: VP3635TJ	EPR Reference: EPR/VP3635TJ Issue Date: 02/09/2014 Effective Date: 02/09/2014 Last date noted as effective: 29/10/2024 Status: Superseded



ID	Location	Details	
X	425m SE	Operator: BIOFUELS CORPORATION TRADING LIMITED Installation Name: SEAL SANDS BIODIESEL/GLYCERINE PLANT Process: ORGANIC CHEMICALS; OXYGEN CONTAINING COMPOUNDS EG ALCOHOLS Permit Number: BP3437GZ Original Permit Number: BU1601IC	EPR Reference: - Issue Date: - Effective Date: - Last date noted as effective: 06/01/2010 Status: DETERMINATION
X	425m SE	Operator: Biofuels Corporation Trading Limited Installation Name: Seal Sands Biodiesel/Glycerine Plant Process: ORGANIC CHEMICALS; OXYGEN CONTAINING COMPOUNDS EG ALCOHOLS Permit Number: UP3131GN Original Permit Number: BU1601IC	EPR Reference: EA/EPR/BU1601IC/V003 Issue Date: 20/03/2009 Effective Date: 20/03/2009 Last date noted as effective: 21/03/2023 Status: Superseded
X	425m SE	Operator: Biofuels Corporation Trading Limited Installation Name: Seal Sands Biodiesel / Glycerine Plant Process: ORGANIC CHEMICALS; OXYGEN CONTAINING COMPOUNDS EG ALCOHOLS Permit Number: DP3434XS Original Permit Number: BU1601IC	EPR Reference: - Issue Date: 14/03/2008 Effective Date: 14/03/2008 Last date noted as effective: 21/03/2023 Status: Superseded
X	425m SE	Operator: Biofuels Corporation Trading Limited Installation Name: Seal Sands Biodiesel/Glycerine Plant Process: ORGANIC CHEMICALS; OXYGEN CONTAINING COMPOUNDS EG ALCOHOLS Permit Number: UP3131GN Original Permit Number: BU1601IC	EPR Reference: EA/EPR/BU1601IC/V003 Issue Date: 20/03/2009 Effective Date: 20/03/2009 Last date noted as effective: 21/03/2023 Status: Superseded
X	425m SE	Operator: Biofuels Corporation Trading Limited Installation Name: Seal Sands Biodiesel / Glycerine Plant Process: ORGANIC CHEMICALS; OXYGEN CONTAINING COMPOUNDS EG ALCOHOLS Permit Number: UP3431KP Original Permit Number: BU1601IC	EPR Reference: - Issue Date: 03/12/2009 Effective Date: 03/12/2009 Last date noted as effective: 21/03/2023 Status: Superseded
X	425m SE	Operator: Harvest Energy Limited Installation Name: Seal Sands Biodiesel / Glycerine Plant Process: ORGANIC CHEMICALS; OXYGEN CONTAINING COMPOUNDS EG ALCOHOLS Permit Number: CP3835HR Original Permit Number: VP3635TJ	EPR Reference: - Issue Date: 21/09/2010 Effective Date: 21/09/2010 Last date noted as effective: 21/03/2023 Status: Superseded



ID	Location	Details	
X	425m SE	Operator: Greenergy Biofuels Teesside Limited Installation Name: Greenergy Biofuels Teesside - EPR/EP3334AS Process: ORGANIC CHEMICALS; OXYGEN CONTAINING COMPOUNDS EG ALCOHOLS Permit Number: HP3138QB Original Permit Number: EP3334AS	EPR Reference: - Issue Date: 30/11/2021 Effective Date: 30/11/2021 Last date noted as effective: 21/03/2023 Status: Superseded
X	425m SE	Operator: Biofuels Corporation Trading Limited Installation Name: Seal Sands Biodiesel / Glycerine Plant Process: ORGANIC CHEMICALS; OXYGEN CONTAINING COMPOUNDS EG ALCOHOLS Permit Number: DP3434XS Original Permit Number: BU1601IC	EPR Reference: - Issue Date: 14/03/2008 Effective Date: 14/03/2008 Last date noted as effective: 21/03/2023 Status: Superseded
X	425m SE	Operator: Biofuels Corporation Trading Limited Installation Name: Seal Sands Biodiesel / Glycerine Plant Process: ORGANIC CHEMICALS; OXYGEN CONTAINING COMPOUNDS EG ALCOHOLS Permit Number: UP3431KP Original Permit Number: BU1601IC	EPR Reference: - Issue Date: 03/12/2009 Effective Date: 03/12/2009 Last date noted as effective: 21/03/2023 Status: Superseded
X	425m SE	Operator: Greenergy Biofuels Teesside Limited Installation Name: Seal Sands Terminal (South Site) - EPR/EP3334AS Process: ORGANIC CHEMICALS; OXYGEN CONTAINING COMPOUNDS EG ALCOHOLS Permit Number: JP3406MJ Original Permit Number: EP3334AS	EPR Reference: - Issue Date: 11/05/2022 Effective Date: 11/05/2022 Last date noted as effective: 21/03/2023 Status: Effective
X	425m SE	Operator: Greenergy Biofuels Teesside Limited Installation Name: Greenergy Biofuels Teesside - EPR/EP3334AS Process: DISPOSAL OF NON-HAZARDOUS WASTE IN A FACILITY WITH A CAPACITY OF MORE THAN 50 TONNES PER DAY BY PHYSICO -CHEMICAL TREATMENT. Permit Number: HP3138QB Original Permit Number: EP3334AS	EPR Reference: - Issue Date: 30/11/2021 Effective Date: 30/11/2021 Last date noted as effective: 21/03/2023 Status: Superseded
X	425m SE	Operator: Greenergy Biofuels Teesside Limited Installation Name: Seal Sands Terminal (South Site) EPR/EP3334AS/T001 Process: ORGANIC CHEMICALS; OXYGEN CONTAINING COMPOUNDS EG ALCOHOLS Permit Number: KP3232DU Original Permit Number: EP3334AS	EPR Reference: - Issue Date: 27/02/2017 Effective Date: 27/02/2017 Last date noted as effective: 21/03/2023 Status: Superseded



ID	Location	Details	
X	425m SE	Operator: Greenergy Biofuels Teesside Limited Installation Name: Seal Sands Terminal (South Site) EPR/EP3334AS/T001 Process: ORGANIC CHEMICALS; OXYGEN CONTAINING COMPOUNDS EG ALCOHOLS Permit Number: PP3701PL Original Permit Number: EP3334AS	EPR Reference: - Issue Date: - Effective Date: - Last date noted as effective: 21/03/2023 Status: Determination
X	425m SE	Operator: Harvest Energy Limited Installation Name: Seal Sands Biodiesel / Glycerine Plant Process: ORGANIC CHEMICALS; OXYGEN CONTAINING COMPOUNDS EG ALCOHOLS Permit Number: CP3835HR Original Permit Number: VP3635TJ	EPR Reference: - Issue Date: 21/09/2010 Effective Date: 21/09/2010 Last date noted as effective: 21/03/2023 Status: Superseded
X	425m SE	Operator: Harvest Energy Limited Installation Name: Seal Sands Biodiesel / Glycerine Plant Process: ORGANIC CHEMICALS; OXYGEN CONTAINING COMPOUNDS EG ALCOHOLS Permit Number: DP3734CF Original Permit Number: VP3635TJ	EPR Reference: - Issue Date: 07/06/2012 Effective Date: 07/06/2012 Last date noted as effective: 21/03/2023 Status: Superseded
X	425m SE	Operator: Harvest Energy Limited Installation Name: Seal Sands Biodiesel / Glycerine Plant Process: ORGANIC CHEMICALS; OXYGEN CONTAINING COMPOUNDS EG ALCOHOLS Permit Number: DP3734CF Original Permit Number: VP3635TJ	EPR Reference: - Issue Date: 07/06/2012 Effective Date: 07/06/2012 Last date noted as effective: 21/03/2023 Status: Superseded
X	425m SE	Operator: Harvest Energy Limited Installation Name: Harvest Energy Limited Process: ORGANIC CHEMICALS; OXYGEN CONTAINING COMPOUNDS EG ALCOHOLS Permit Number: RP3032VS Original Permit Number: VP3635TJ	EPR Reference: - Issue Date: 02/09/2014 Effective Date: 02/09/2014 Last date noted as effective: 21/03/2023 Status: Superseded
X	425m SE	Operator: Harvest Energy Limited Installation Name: Harvest Energy Limited Process: ORGANIC CHEMICALS; OXYGEN CONTAINING COMPOUNDS EG ALCOHOLS Permit Number: RP3032VS Original Permit Number: VP3635TJ	EPR Reference: - Issue Date: 02/09/2014 Effective Date: 02/09/2014 Last date noted as effective: 21/03/2023 Status: Superseded

This data is sourced from the Environment Agency and Natural Resources Wales.



4.11 Licensed pollutant release (Part A(2)/B)

Records within 500m

0

Records of Part A(2) and Part B installations regulated under the Environmental Permitting (England and Wales) Regulations 2016 for the release of substances to the environment.

This data is sourced from Local Authority records.

4.12 Radioactive Substance Authorisations

Records within 500m

1

Records of the storage, use, accumulation and disposal of radioactive substances regulated under the Radioactive Substances Act 1993.

Features are displayed on the Current industrial land use map on [page 44](#) >

ID	Location	Address	Details	
U	327m E	Teesside Operations, Seal Sands, Middlesbrough, TS2 1UH	Operator: Conocophillips Petroleum Co UK Limited Type: - Permission number: KP3490SS Date of approval: -	Effective from: - Last date of update: 01/01/2020 Status: Surrendered

This data is sourced from the Environment Agency and Natural Resources Wales.

4.13 Licensed Discharges to controlled waters

Records within 500m

2

Discharges of treated or untreated effluent to controlled waters under the Water Resources Act 1991.

Features are displayed on the Current industrial land use map on [page 44](#) >

ID	Location	Address	Details	
C	3m SW	INNOGY COGEN - SEAL SANDS OFFICE, NORTH/SOUTH ACCESS ROAD, SEAL SANDS, MIDDLESBROUGH, TS2 1FB	Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY Permit Number: 25/04/1739 Permit Version: 1 Receiving Water: LAND	Status: NEW CONSENT (WRA 91, S88 & SCHED 10 AS AMENDED BY ENV ACT 1995) Issue date: 11/02/2003 Effective Date: 11/02/2003 Revocation Date: 25/07/2012
C	3m SW	INNOGY COGEN - SEAL SANDS OFFICE, NORTH/SOUTH ACCESS ROAD, SEAL SANDS, MIDDLESBROUGH, TS2 1FB	Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY Permit Number: 25/04/1739 Permit Version: 2 Receiving Water: LAND	Status: NEW CONSENT (WRA 91, S88 & SCHED 10 AS AMENDED BY ENV ACT 1995) Issue date: 26/07/2012 Effective Date: 26/07/2012 Revocation Date: -



This data is sourced from the Environment Agency and Natural Resources Wales.

4.14 Pollutant release to surface waters (Red List)

Records within 500m

0

Discharges of specified substances under the Environmental Protection (Prescribed Processes and Substances) Regulations 1991.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.15 Pollutant release to public sewer

Records within 500m

0

Discharges of Special Category Effluents to the public sewer.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.16 List 1 Dangerous Substances

Records within 500m

1

Discharges of substances identified on List I of European Directive E 2006/11/EC, and regulated under the Environmental Damage (Prevention and Remediation) Regulations 2015.

Features are displayed on the Current industrial land use map on [page 44 >](#)

ID	Location	Name	Status	Receiving Water	Authorised Substances
V	366m SE	Dow Chemical Co Ltd Middlesborough Ts2 1ud	Active	River Tees, Any	Mercury (other)

This data is sourced from the Environment Agency and Natural Resources Wales.

4.17 List 2 Dangerous Substances

Records within 500m

3

Discharges of substances identified on List II of European Directive E 2006/11/EC, and regulated under the Environmental Damage (Prevention and Remediation) Regulations 2015.

Features are displayed on the Current industrial land use map on [page 44 >](#)

ID	Location	Name	Status	Receiving Water	Authorised Substances
N	73m E	Shanks Chemical Services Middlesborough Ts2 1ub	Active	River Tees	Benzene, Toluene, Xylene



ID	Location	Name	Status	Receiving Water	Authorised Substances
15	321m S	Fine Organics, Seal Sands	Not Active	River Tees	Cyanide
V	366m SE	Seal Sands Chelates And Fine Chemicals Ts2 1ud	Active	North Sea	Cyanide

This data is sourced from the Environment Agency and Natural Resources Wales.

4.18 Pollution Incidents (EA/NRW)

Records within 500m

1

Records of substantiated pollution incidents. Since 2006 this data has only included category 1 (major) and 2 (significant) pollution incidents.

Features are displayed on the Current industrial land use map on [page 44 >](#)

ID	Location	Details	
11	234m SE	Incident Date: 18/08/2003 Incident Identification: 182963 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Other Atmospheric Pollutant or Effect	Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 3 (Minor)

This data is sourced from the Environment Agency and Natural Resources Wales.

4.19 Pollution inventory substances

Records within 500m

19

The pollution inventory (substances) includes reporting on annual emissions of certain regulated substances to air, controlled waters and land. A reporting threshold for each substance is also included. Where emissions fall below the reporting threshold, no value will be given. The data is given for the most recent complete year available.

Features are displayed on the Current industrial land use map on [page 44 >](#)

ID: C, Location: 49m SW, Permit: CP3939QN
 Operator: RWE Generation UK Plc
 Activity: COMBUSTION; ANY FUEL =>50MW
 Address: Seal Sands Power Station North South Access Road Seal Sands Cleveland TS2 1FB
 Sector: Combustion, Sub-sector: Power
 Releases:



Route	Substance	Reporting threshold (kg)	Quantity (kg)
Air	Particulate matter - PM2.5	1000kg	Below Reporting Threshold
Air	Particulate matter - total	10000kg	Below Reporting Threshold
Air	Sulphur oxides (SO2 and SO3) as SO2	100000kg	Below Reporting Threshold
Air	Carbon dioxide	10000000kg	Below Reporting Threshold
Air	Ammonia	1000kg	Below Reporting Threshold
Air	Carbon monoxide	100000kg	Below Reporting Threshold
Air	Methane	10000kg	Below Reporting Threshold
Air	Nitrogen oxides (NO and NO2) as NO2	100000kg	Below Reporting Threshold
Air	Non-methane volatile organic compounds (NMVOCs)	10000kg	Below Reporting Threshold
Air	Particulate matter - PM10	1000kg	Below Reporting Threshold

ID: T, Location: 268m E, Permit: NP3339MT
 Operator: Victrex Manufacturing Limited
 Activity: ORGANIC CHEMICALS; OXYGEN CONTAINING COMPOUNDS EG ALCOHOLS
 Address: Seal Sands Bdf Manufacturing Off Seaton Carew Road Middlesbrough Redcar and Cleveland TS2 1UB
 Sector: Chemicals, Sub-sector: Chemicals
 Releases:

Route	Substance	Reporting threshold (kg)	Quantity (kg)
Wastewater	Total organic carbon (TOC)	50000kg	Below Reporting Threshold
Air	Nitrogen oxides (NO and NO2) as NO2	100000kg	Below Reporting Threshold
Air	Nitrous oxide	10000kg	Below Reporting Threshold

ID: T, Location: 268m E, Permit: NP3339MT
 Operator: Victrex Manufacturing Limited
 Activity: ORGANIC CHEMICALS; OXYGEN CONTAINING COMPOUNDS EG ALCOHOLS
 Address: Seal Sands Bdf Manufacturing Off Seaton Carew Road Middlesbrough Redcar and Cleveland TS2 1UB
 Sector: Chemicals, Sub-sector: Chemicals
 Releases:

Route	Substance	Reporting threshold (kg)	Quantity (kg)
Wastewater	Nitrogen - as total N	50000kg	481719kg



ID: T, Location: 268m E, Permit: NP3339MT
Operator: Victrex Manufacturing Limited
Activity: ORGANIC CHEMICALS; OXYGEN CONTAINING COMPOUNDS EG ALCOHOLS
Address: Seal Sands Bdf Manufacturing Off Seaton Carew Road Middlesbrough Redcar and Cleveland TS2 1UB
Sector: Chemicals, Sub-sector: Chemicals
Releases:

Route	Substance	Reporting threshold (kg)	Quantity (kg)
Air	Non-methane volatile organic compounds (NMVOCs)	10000kg	48074kg

ID: T, Location: 268m E, Permit: NP3339MT
Operator: Victrex Manufacturing Limited
Activity: ORGANIC CHEMICALS; OXYGEN CONTAINING COMPOUNDS EG ALCOHOLS
Address: Seal Sands Bdf Manufacturing Off Seaton Carew Road Middlesbrough Redcar and Cleveland TS2 1UB
Sector: Chemicals, Sub-sector: Chemicals
Releases:

Route	Substance	Reporting threshold (kg)	Quantity (kg)
Wastewater	Fluorides - as F	2000kg	3022kg

ID: W, Location: 366m NE, Permit: QP3004PD
Operator: Conocophillips (U.K.) Teeside Operator Limited
Activity: Stabilised crude petroleum
Address: Teesside Crude Oil Stabilisation Terminal Seal Sands Cleveland TS2 1UH
Sector: Refineries & Fuel, Sub-sector: Refineries & Fuel
Releases:

Route	Substance	Reporting threshold (kg)	Quantity (kg)
Wastewater	Nickel	20kg	Below Reporting Threshold
Air	Particulate matter - total	10000kg	Below Reporting Threshold
Air	Sulphur oxides (SO2 and SO3) as SO2	100000kg	Below Reporting Threshold
Air	Carbon monoxide	100000kg	Below Reporting Threshold
Air	Methane	10000kg	Below Reporting Threshold
Wastewater	Arsenic	5kg	Below Reporting Threshold
Wastewater	Cadmium	1kg	Below Reporting Threshold



Route	Substance	Reporting threshold (kg)	Quantity (kg)
Wastewater	Copper	20kg	Below Reporting Threshold
Wastewater	Lead	20kg	Below Reporting Threshold
Wastewater	Chromium	20kg	Below Reporting Threshold

ID: W, Location: 366m NE, Permit: QP3004PD
Operator: Conocophillips (U.K.) Teeside Operator Limited
Activity: Stabilised crude petroleum
Address: Teesside Crude Oil Stabilisation Terminal Seal Sands Cleveland TS2 1UH
Sector Refineries & Fuel, Sub-sector: Refineries & Fuel
Releases:

Route	Substance	Reporting threshold (kg)	Quantity (kg)
Air	Carbon dioxide	10000000kg	263921000kg

ID: W, Location: 366m NE, Permit: QP3004PD
Operator: Conocophillips (U.K.) Teeside Operator Limited
Activity: Stabilised crude petroleum
Address: Teesside Crude Oil Stabilisation Terminal Seal Sands Cleveland TS2 1UH
Sector Refineries & Fuel, Sub-sector: Refineries & Fuel
Releases:

Route	Substance	Reporting threshold (kg)	Quantity (kg)
Air	Non-methane volatile organic compounds (NMVOCs)	10000kg	1444800kg

ID: W, Location: 366m NE, Permit: QP3004PD
Operator: Conocophillips (U.K.) Teeside Operator Limited
Activity: Stabilised crude petroleum
Address: Teesside Crude Oil Stabilisation Terminal Seal Sands Cleveland TS2 1UH
Sector Refineries & Fuel, Sub-sector: Refineries & Fuel
Releases:

Route	Substance	Reporting threshold (kg)	Quantity (kg)
Wastewater	Total organic carbon (TOC)	50000kg	303469kg



ID: W, Location: 366m NE, Permit: QP3004PD
Operator: Conocophillips (U.K.) Teeside Operator Limited
Activity: Stabilised crude petroleum
Address: Teesside Crude Oil Stabilisation Terminal Seal Sands Cleveland TS2 1UH
Sector: Refineries & Fuel, Sub-sector: Refineries & Fuel
Releases:

Route	Substance	Reporting threshold (kg)	Quantity (kg)
Air	Nitrogen oxides (NO and NO2) as NO2	100000kg	261710kg

ID: W, Location: 366m NE, Permit: QP3004PD
Operator: Conocophillips (U.K.) Teeside Operator Limited
Activity: Stabilised crude petroleum
Address: Teesside Crude Oil Stabilisation Terminal Seal Sands Cleveland TS2 1UH
Sector: Refineries & Fuel, Sub-sector: Refineries & Fuel
Releases:

Route	Substance	Reporting threshold (kg)	Quantity (kg)
Air	Benzene	1000kg	4200kg

ID: W, Location: 366m NE, Permit: QP3004PD
Operator: Conocophillips (U.K.) Teeside Operator Limited
Activity: Stabilised crude petroleum
Address: Teesside Crude Oil Stabilisation Terminal Seal Sands Cleveland TS2 1UH
Sector: Refineries & Fuel, Sub-sector: Refineries & Fuel
Releases:

Route	Substance	Reporting threshold (kg)	Quantity (kg)
Wastewater	Benzene	10kg	1455kg

ID: W, Location: 366m NE, Permit: QP3004PD
Operator: Conocophillips (U.K.) Teeside Operator Limited
Activity: Stabilised crude petroleum
Address: Teesside Crude Oil Stabilisation Terminal Seal Sands Cleveland TS2 1UH
Sector: Refineries & Fuel, Sub-sector: Refineries & Fuel
Releases:

Route	Substance	Reporting threshold (kg)	Quantity (kg)
Wastewater	Toluene	10kg	1012kg



ID: W, Location: 366m NE, Permit: QP3004PD
Operator: Conocophillips (U.K.) Teeside Operator Limited
Activity: Stabilised crude petroleum
Address: Teesside Crude Oil Stabilisation Terminal Seal Sands Cleveland TS2 1UH
Sector: Refineries & Fuel, Sub-sector: Refineries & Fuel
Releases:

Route	Substance	Reporting threshold (kg)	Quantity (kg)
Wastewater	Xylene - all isomers	10kg	550kg

ID: W, Location: 366m NE, Permit: QP3004PD
Operator: Conocophillips (U.K.) Teeside Operator Limited
Activity: Stabilised crude petroleum
Address: Teesside Crude Oil Stabilisation Terminal Seal Sands Cleveland TS2 1UH
Sector: Refineries & Fuel, Sub-sector: Refineries & Fuel
Releases:

Route	Substance	Reporting threshold (kg)	Quantity (kg)
Wastewater	Zinc	100kg	115kg

ID: W, Location: 366m NE, Permit: QP3004PD
Operator: Conocophillips (U.K.) Teeside Operator Limited
Activity: Stabilised crude petroleum
Address: Teesside Crude Oil Stabilisation Terminal Seal Sands Cleveland TS2 1UH
Sector: Refineries & Fuel, Sub-sector: Refineries & Fuel
Releases:

Route	Substance	Reporting threshold (kg)	Quantity (kg)
Wastewater	Ethyl benzene	10kg	63kg

ID: W, Location: 366m NE, Permit: QP3004PD
Operator: Conocophillips (U.K.) Teeside Operator Limited
Activity: Stabilised crude petroleum
Address: Teesside Crude Oil Stabilisation Terminal Seal Sands Cleveland TS2 1UH
Sector: Refineries & Fuel, Sub-sector: Refineries & Fuel
Releases:

Route	Substance	Reporting threshold (kg)	Quantity (kg)
Wastewater	Mercury	0.1kg	5.33kg



ID: X, Location: 425m SE, Permit: EP3334AS
 Operator: Greenergy Biofuels Teesside Limited
 Activity: ORGANIC CHEMICALS; OXYGEN CONTAINING COMPOUNDS EG ALCOHOLS
 Address: Seal Sands Terminal (South Site) Seal Sands Road TS2 1UB
 Sector: Chemicals, Sub-sector: Chemicals
 Releases:

Route	Substance	Reporting threshold (kg)	Quantity (kg)
Air	Carbon monoxide	100000kg	Below Reporting Threshold
Air	Nitrogen oxides (NO and NO2) as NO2	100000kg	Below Reporting Threshold
Air	Non-methane volatile organic compounds (NMVOCs)	10000kg	Below Reporting Threshold
Controlled Waters	Total organic carbon (TOC)	50000kg	Below Reporting Threshold

ID: X, Location: 425m SE, Permit: EP3334AS
 Operator: Greenergy Biofuels Teesside Limited
 Activity: ORGANIC CHEMICALS; OXYGEN CONTAINING COMPOUNDS EG ALCOHOLS
 Address: Seal Sands Terminal (South Site) Seal Sands Road TS2 1UB
 Sector: Chemicals, Sub-sector: Chemicals
 Releases:

Route	Substance	Reporting threshold (kg)	Quantity (kg)
Air	Carbon dioxide	10000000kg	23200000kg

This data is sourced from the Environment Agency and the Scottish Environment Protection Agency.

4.20 Pollution inventory waste transfers

Records within 500m

5

The pollution inventory (waste transfers) includes reporting on annual transfers and recovery/disposal of controlled wastes from a site. A reporting threshold for each waste type is also included. Where releases fall below the reporting threshold, no value will be given. The data is given for the most recent complete year available.

Features are displayed on the Current industrial land use map on [page 44 >](#)



ID: C, Location: 49m SW, Permit: CP3939QN
Operator: RWE Generation UK Plc
Activity: COMBUSTION; ANY FUEL =>50MW
Address: Seal Sands Power Station North South Access Road Seal Sands Cleveland TS2 1FB
Sector: Combustion, Sub-sector: Power
Releases:

Route	Route description	Quantity (tonnes)	Release level	EWC code	EWC description	Hazardous waste
R13	Storage of wastes pending any of the operations numbered R1 to R12 (excluding temporary storage, pending collection, on the site where it is produced)	1	Absolute Value	20 01 35	discarded electrical and electronic equipment other than those mentioned in 20 01 21 and 20 01 23 containing hazardous components (6)	Yes
D9	Physio-chemical treatment not specified elsewhere in this Table which results in final compounds or mixtures which are discarded by means of any of the operations numbers D1 to D12 (eg evaporation, drying, calcination, etc.)	17.84	Absolute Value	13 05 07	oily water from oil/water separators	Yes
D9	Physio-chemical treatment not specified elsewhere in this Table which results in final compounds or mixtures which are discarded by means of any of the operations numbers D1 to D12 (eg evaporation, drying, calcination, etc.)	0.5	Absolute Value	06 01 01	sulphuric acid and sulphurous acid	Yes
D9	Physio-chemical treatment not specified elsewhere in this Table which results in final compounds or mixtures which are discarded by means of any of the operations numbers D1 to D12 (eg evaporation, drying, calcination, etc.)	0.35	Absolute Value	16 07 09	wastes containing other dangerous substances	Yes
D9	Physio-chemical treatment not specified elsewhere in this Table which results in final compounds or mixtures which are discarded by means of any of the operations numbers D1 to D12 (eg evaporation, drying, calcination, etc.)	0.6	Absolute Value	13 02 05	mineral-based non-chlorinated engine, gear and lubricating oils	Yes



Route	Route description	Quantity (tonnes)	Release level	EWC code	EWC description	Hazardous waste
R13	Storage of wastes pending any of the operations numbered R1 to R12 (excluding temporary storage, pending collection, on the site where it is produced)	9.04	Absolute Value	13 05 07	oily water from oil/water separators	Yes
D1	Deposit into or onto land (eg landfill, etc.)	1.88	Absolute Value	20 03 01	mixed municipal waste	No
R4	Recycling/reclamation of metals and metal compounds	3.12	Absolute Value	20 01 40	metals	No
R3	Recycling/Reclamation of organic substances which are not used as solvents (including composting and other biological transformatin processes)	0.82	Absolute Value	17 02 01	wood	No
R5	Recycling/reclamation of other inorganic materials	1.7	Absolute Value	15 01 06	mixed packaging	No

ID: T, Location: 268m E, Permit: NP3339MT
 Operator: Victrex Manufacturing Limited
 Activity: ORGANIC CHEMICALS; OXYGEN CONTAINING COMPOUNDS EG ALCOHOLS
 Address: Seal Sands Bdf Manufacturing Off Seaton Carew Road Middlesbrough Redcar and Cleveland TS2 1UB
 Sector: Chemicals, Sub-sector: Chemicals
 Releases:

Route	Route description	Quantity (tonnes)	Release level	EWC code	EWC description	Hazardous waste
D10	Incineration on Land	0.2	Absolute Value	15 01 10	packaging containing residues of or contaminated by dangerous substances	Yes
D10	Incineration on Land	0.2	Absolute Value	15 02 02	absorbents, filter materials (including oil filters not otherwise specified), wiping cloths, protective clothing contaminated by dangerous substances	Yes
D10	Incineration on Land	0.2	Absolute Value	16 03 03	inorganic wastes containing dangerous substances	Yes
R1	Use principally as a fuel or other means to generate energy	188.7	Absolute Value	07 07 07	halogenated still bottoms and reaction residues	Yes



ID: W, Location: 366m NE, Permit: QP3004PD
 Operator: Conocophillips (U.K.) Teeside Operator Limited
 Activity: Stabilised crude petroleum
 Address: Teesside Crude Oil Stabilisation Terminal Seal Sands Cleveland TS2 1UH
 Sector: Refineries & Fuel, Sub-sector: Refineries & Fuel
 Releases:

Route	Route description	Quantity (tonnes)	Release level	EWC code	EWC description	Hazardous waste
R5	Recycling/reclamation of other inorganic materials	12.46	Absolute Value	15 01 10	packaging containing residues of or contaminated by dangerous substances	Yes
R3	Recycling/Reclamation of organic substances which are not used as solvents (including composting and other biological transformatin processes)	4.44	Absolute Value	05 01 02	desalter sludges	Yes
R13	Storage of wastes pending any of the operations numbered R1 to R12 (excluding temporary storage, pending collection, on the site where it is produced)	0.5	Absolute Value	11 01 13	degreasing wastes containing dangerous substances	Yes
R3	Recycling/Reclamation of organic substances which are not used as solvents (including composting and other biological transformatin processes)	6.54	Absolute Value	16 03 05	organic wastes containing dangerous substances	Yes
R4	Recycling/reclamation of metals and metal compounds	80	Absolute Value	17 04 09	metal waste contaminated with dangerous substances	Yes
R4	Recycling/reclamation of metals and metal compounds	0.9	Absolute Value	20 01 21	fluorescent tubes and other mercury-containing waste	Yes
R13	Storage of wastes pending any of the operations numbered R1 to R12 (excluding temporary storage, pending collection, on the site where it is produced)	16.36	Absolute Value	15 02 02	absorbents, filter materials (including oil filters not otherwise specified), wiping cloths, protective clothing contaminated by dangerous substances	Yes
R13	Storage of wastes pending any of the operations numbered R1 to R12 (excluding temporary storage, pending collection, on the site where it is produced)	28.81	Absolute Value	05 01 06	oily sludges from maintenance operations of the plant or equipment	Yes



Route	Route description	Quantity (tonnes)	Release level	EWC code	EWC description	Hazardous waste
R13	Storage of wastes pending any of the operations numbered R1 to R12 (excluding temporary storage, pending collection, on the site where it is produced)	7.73	Absolute Value	16 03 05	organic wastes containing dangerous substances	Yes
R13	Storage of wastes pending any of the operations numbered R1 to R12 (excluding temporary storage, pending collection, on the site where it is produced)	1.65	Absolute Value	20 01 23	discarded equipment containing chlorofluorocarbons	Yes
R13	Storage of wastes pending any of the operations numbered R1 to R12 (excluding temporary storage, pending collection, on the site where it is produced)	0.5	Absolute Value	16 05 04	gases in pressure containers (including halons) containing dangerous substances	Yes
R13	Storage of wastes pending any of the operations numbered R1 to R12 (excluding temporary storage, pending collection, on the site where it is produced)	9.17	Absolute Value	20 01 35	discarded electrical and electronic equipment other than those mentioned in 20 01 21 and 20 01 23 containing hazardous components (6)	Yes
R13	Storage of wastes pending any of the operations numbered R1 to R12 (excluding temporary storage, pending collection, on the site where it is produced)	5.9	Absolute Value	17 05 03	soil and stones containing dangerous substances	Yes
R13	Storage of wastes pending any of the operations numbered R1 to R12 (excluding temporary storage, pending collection, on the site where it is produced)	0.2	Absolute Value	13 02 08	other engine, gear and lubricating oils	Yes
R13	Storage of wastes pending any of the operations numbered R1 to R12 (excluding temporary storage, pending collection, on the site where it is produced)	5.2	Absolute Value	13 07 03	other fuels (including mixtures)	Yes
R13	Storage of wastes pending any of the operations numbered R1 to R12 (excluding temporary storage, pending collection, on the site where it is produced)	0.95	Absolute Value	13 02 05	mineral-based non-chlorinated engine, gear and lubricating oils	Yes



Route	Route description	Quantity (tonnes)	Release level	EWC code	EWC description	Hazardous waste
D5	Specially engineered landfill (eg placement into lined discrete cells which are capped and isolated from one another and the environment, etc)	103.4	Absolute Value	12 01 16	waste blasting material containing dangerous substances	Yes
D1	Deposit into or onto land (eg landfill, etc.)	1.92	Absolute Value	17 06 01	insulation materials containing asbestos	Yes
D9	Physio-chemical treatment not specified elsewhere in this Table which results in final compounds or mixtures which are discarded by means of any of the operations numbered D1 to D12 (eg evaporation, drying, calcination, etc.)	2.1	Absolute Value	16 03 05	organic wastes containing dangerous substances	Yes
D9	Physio-chemical treatment not specified elsewhere in this Table which results in final compounds or mixtures which are discarded by means of any of the operations numbered D1 to D12 (eg evaporation, drying, calcination, etc.)	96.2	Absolute Value	17 05 03	soil and stones containing dangerous substances	Yes
D9	Physio-chemical treatment not specified elsewhere in this Table which results in final compounds or mixtures which are discarded by means of any of the operations numbered D1 to D12 (eg evaporation, drying, calcination, etc.)	16.5	Absolute Value	07 05 03	organic halogenated solvents, washing liquids and mother liquors	Yes
D15	Storage pending any of the operations numbered D1 to D14 (excluding temporary storage pending collection, on the site where it is produced)	0.05	Absolute Value	18 01 03	wastes whose collection and disposal is subject to special requirements in order to prevent infection	Yes
D15	Storage pending any of the operations numbered D1 to D14 (excluding temporary storage pending collection, on the site where it is produced)	0.08	Absolute Value	16 06 02	Ni-Cd batteries	Yes



Route	Route description	Quantity (tonnes)	Release level	EWC code	EWC description	Hazardous waste
D15	Storage pending any of the operations numbered D1 to D14 (excluding temporary storage pending collection, on the site where it is produced)	0.5	Absolute Value	11 01 13	degreasing wastes containing dangerous substances	Yes
D15	Storage pending any of the operations numbered D1 to D14 (excluding temporary storage pending collection, on the site where it is produced)	0.04	Absolute Value	16 06 01	lead batteries	Yes
D15	Storage pending any of the operations numbered D1 to D14 (excluding temporary storage pending collection, on the site where it is produced)	3.02	Absolute Value	16 07 09	wastes containing other dangerous substances	Yes
R1	Use principally as a fuel or other means to generate energy	81.27	Absolute Value	20 03 01	mixed municipal waste	No
R5	Recycling/reclamation of other inorganic materials	1504.34	Absolute Value	17 05 04	soil and stones other than those mentioned in 17 05 03	No
R5	Recycling/reclamation of other inorganic materials	208	Absolute Value	17 01 01	concrete	No
R5	Recycling/reclamation of other inorganic materials	378.5	Absolute Value	17 01 07	mixtures of concrete, bricks, tiles and ceramics other than those mentioned in 17 01 06	No
R5	Recycling/reclamation of other inorganic materials	2.32	Absolute Value	17 09 04	mixed construction and demolition wastes other than those mentioned in 17 09 01, 17 09 02 and 17 09 03	No
R5	Recycling/reclamation of other inorganic materials	79.28	Absolute Value	17 03 02	bituminous mixtures other than those mentioned in 17 03 01	No
R5	Recycling/reclamation of other inorganic materials	41.06	Absolute Value	17 01 02	bricks	No
R3	Recycling/Reclamation of organic substances which are not used as solvents (including composting and other biological transformatin processes)	29.84	Absolute Value	20 01 01	paper and cardboard	No



Route	Route description	Quantity (tonnes)	Release level	EWC code	EWC description	Hazardous waste
R3	Recycling/Reclamation of organic substances which are not used as solvents (including composting and other biological transformatin processes)	81.2	Absolute Value	20 03 01	mixed municipal waste	No
R3	Recycling/Reclamation of organic substances which are not used as solvents (including composting and other biological transformatin processes)	76.55	Absolute Value	17 02 01	wood	No
R3	Recycling/Reclamation of organic substances which are not used as solvents (including composting and other biological transformatin processes)	0.125	Absolute Value	20 01 36	discarded electrical and electronic equipment other than those mentioned in 20 01 21, 20 01 23 and 20 01 35	No
R4	Recycling/reclamation of metals and metal compounds	81.27	Absolute Value	20 03 01	mixed municipal waste	No
R4	Recycling/reclamation of metals and metal compounds	281.47	Absolute Value	17 04 07	mixed metals	No
R3	Recycling/Reclamation of organic substances which are not used as solvents (including composting and other biological transformatin processes)	2436.99	Absolute Value	20 03 04	septic tank sludge	No
R4	Recycling/reclamation of metals and metal compounds	6.5	Absolute Value	15 01 04	metallic packaging	No
R4	Recycling/reclamation of metals and metal compounds	1.96	Absolute Value	15 01 07	glass packaging	No
D1	Deposit into or onto land (eg landfill, etc.)	175.08	Absolute Value	17 06 04	insulation materials other than those mentioned in 17 06 01 and 17 06 03	No
D1	Deposit into or onto land (eg landfill, etc.)	59	Absolute Value	20 03 01	mixed municipal waste	No
D15	Storage pending any of the operations numbered D1 to D14 (excluding temporary storage pending collection, on the site where it is produced)	0.8	Absolute Value	06 03 14	solid salts and solutions other than those mentioned in 06 03 11 and 06 03 13	No



Route	Route description	Quantity (tonnes)	Release level	EWC code	EWC description	Hazardous waste
D15	Storage pending any of the operations numbered D1 to D14 (excluding temporary storage pending collection, on the site where it is produced)	2.31	Absolute Value	11 01 14	degreasing wastes other than those mentioned in 11 01 13	No
D15	Storage pending any of the operations numbered D1 to D14 (excluding temporary storage pending collection, on the site where it is produced)	0.08	Absolute Value	16 06 04	alkaline batteries (except 16 06 03)	No
D15	Storage pending any of the operations numbered D1 to D14 (excluding temporary storage pending collection, on the site where it is produced)	0.02	Absolute Value	16 06 05	other batteries and accumulators	No

ID: S, Location: 387m E, Permit: BU0311IX
 Operator: Vertellus Specialities UK Limited
 Activity: ORGANIC CHEMICALS; HYDROCARBONS EG AROMATICS
 Address: Seal Sands Road Seal Sands Cleveland TS2 1UB
 Sector: Chemicals, Sub-sector: Chemicals
 Releases:

Route	Route description	Quantity (tonnes)	Release level	EWC code	EWC description	Hazardous waste
D15	Storage pending any of the operations numbered D1 to D14 (excluding temporary storage pending collection, on the site where it is produced)	9.32	Absolute Value	06 01 02	hydrochloric acid	Yes
D9	Physio-chemical treatment not specified elsewhere in this Table which results in final compounds or mixtures which are discarded by means of any of the operations numbered D1 to D12 (eg evaporation, drying, calcination, etc.)	24.74	Absolute Value	06 01 02	hydrochloric acid	Yes
R5	Recycling/reclamation of other inorganic materials	34	Absolute Value	07 01 01	aqueous washing liquids and mother liquors	Yes



Route	Route description	Quantity (tonnes)	Release level	EWC code	EWC description	Hazardous waste
R13	Storage of wastes pending any of the operations numbered R1 to R12 (excluding temporary storage, pending collection, on the site where it is produced)	54	Absolute Value	07 01 01	aqueous washing liquids and mother liquors	Yes
D15	Storage pending any of the operations numbered D1 to D14 (excluding temporary storage pending collection, on the site where it is produced)	2	Absolute Value	07 01 04	other organic solvents, washing liquids and mother liquors	Yes
R13	Storage of wastes pending any of the operations numbered R1 to R12 (excluding temporary storage, pending collection, on the site where it is produced)	75	Absolute Value	07 01 04	other organic solvents, washing liquids and mother liquors	Yes
R13	Storage of wastes pending any of the operations numbered R1 to R12 (excluding temporary storage, pending collection, on the site where it is produced)	22	Absolute Value	07 01 08	other still bottoms and reaction residues	Yes
R13	Storage of wastes pending any of the operations numbered R1 to R12 (excluding temporary storage, pending collection, on the site where it is produced)	13	Absolute Value	07 07 01	aqueous washing liquids and mother liquors	Yes
R13	Storage of wastes pending any of the operations numbered R1 to R12 (excluding temporary storage, pending collection, on the site where it is produced)	0.87	Absolute Value	08 01 11	waste paint and varnish containing organic solvents or other dangerous substances	Yes
R13	Storage of wastes pending any of the operations numbered R1 to R12 (excluding temporary storage, pending collection, on the site where it is produced)	6	Absolute Value	13 01 10	mineral based non-chlorinated hydraulic oils	Yes
R13	Storage of wastes pending any of the operations numbered R1 to R12 (excluding temporary storage, pending collection, on the site where it is produced)	0.61	Absolute Value	13 02 08	other engine, gear and lubricating oils	Yes
R5	Recycling/reclamation of other inorganic materials	4	Absolute Value	13 07 01	fuel oil and diesel	Yes



Route	Route description	Quantity (tonnes)	Release level	EWC code	EWC description	Hazardous waste
D13	Blending or mixing prior to submission to any of the operators numbered D1 to D12	6	Absolute Value	14 06 03	other solvents and solvent mixtures	Yes
D15	Storage pending any of the operations numbered D1 to D14 (excluding temporary storage pending collection, on the site where it is produced)	39	Absolute Value	15 01 10	packaging containing residues of or contaminated by dangerous substances	Yes
R13	Storage of wastes pending any of the operations numbered R1 to R12 (excluding temporary storage, pending collection, on the site where it is produced)	1	Absolute Value	15 02 02	absorbents, filter materials (including oil filters not otherwise specified), wiping cloths, protective clothing contaminated by dangerous substances	Yes
D15	Storage pending any of the operations numbered D1 to D14 (excluding temporary storage pending collection, on the site where it is produced)	22	Absolute Value	16 03 03	inorganic wastes containing dangerous substances	Yes
D15	Storage pending any of the operations numbered D1 to D14 (excluding temporary storage pending collection, on the site where it is produced)	3	Absolute Value	16 03 05	organic wastes containing dangerous substances	Yes
D15	Storage pending any of the operations numbered D1 to D14 (excluding temporary storage pending collection, on the site where it is produced)	1	Absolute Value	16 05 06	laboratory chemicals, consisting of or containing dangerous substances, including mixtures of laboratory chemicals	Yes
D9	Physio-chemical treatment not specified elsewhere in this Table which results in final compounds or mixtures which are discarded by means of any of the operations numbered D1 to D12 (eg evaporation, drying, calcination, etc.)	126	Absolute Value	16 10 01	aqueous liquid wastes containing dangerous substances	Yes
R13	Storage of wastes pending any of the operations numbered R1 to R12 (excluding temporary storage, pending collection, on the site where it is produced)	4	Absolute Value	16 10 01	aqueous liquid wastes containing dangerous substances	Yes



Route	Route description	Quantity (tonnes)	Release level	EWC code	EWC description	Hazardous waste
R13	Storage of wastes pending any of the operations numbered R1 to R12 (excluding temporary storage, pending collection, on the site where it is produced)	7	Absolute Value	15 01 02	plastic packaging	No
R13	Storage of wastes pending any of the operations numbered R1 to R12 (excluding temporary storage, pending collection, on the site where it is produced)	1	Absolute Value	15 01 04	metallic packaging	No
R3	Recycling/Reclamation of organic substances which are not used as solvents (including composting and other biological transformatin processes)	5	Absolute Value	15 01 05	composite packaging	No
D15	Storage pending any of the operations numbered D1 to D14 (excluding temporary storage pending collection, on the site where it is produced)	3	Absolute Value	15 01 06	mixed packaging	No
D15	Storage pending any of the operations numbered D1 to D14 (excluding temporary storage pending collection, on the site where it is produced)	4	Absolute Value	16 03 04	inorganic wastes other than those mentioned in 16 03 03	No
D15	Storage pending any of the operations numbered D1 to D14 (excluding temporary storage pending collection, on the site where it is produced)	30	Absolute Value	16 03 06	organic wastes other than those mentioned in 16 03 05	No
R3	Recycling/Reclamation of organic substances which are not used as solvents (including composting and other biological transformatin processes)	2	Absolute Value	16 03 06	organic wastes other than those mentioned in 16 03 05	No
D8	Biological treatment not specified elsewhere in this Table which results in final compounds or mixtures which are discarded by means of any of the operations numbers D1 to D12	2511	Absolute Value	16 03 06	organic wastes other than those mentioned in 16 03 05	No



Route	Route description	Quantity (tonnes)	Release level	EWC code	EWC description	Hazardous waste
D9	Physio-chemical treatment not specified elsewhere in this Table which results in final compounds or mixtures which are discarded by means of any of the operations numbered D1 to D12 (eg evaporation, drying, calcination, etc.)	76	Absolute Value	16 10 02	aqueous liquid wastes other than those mentioned in 16 10 01	No
D15	Storage pending any of the operations numbered D1 to D14 (excluding temporary storage pending collection, on the site where it is produced)	1	Absolute Value	16 10 02	aqueous liquid wastes other than those mentioned in 16 10 01	No

ID: X, Location: 425m SE, Permit: EP3334AS
 Operator: Greenergy Biofuels Teesside Limited
 Activity: ORGANIC CHEMICALS; OXYGEN CONTAINING COMPOUNDS EG ALCOHOLS
 Address: Seal Sands Terminal (South Site) Seal Sands Road TS2 1UB
 Sector: Chemicals, Sub-sector: Chemicals
 Releases:

Route	Route description	Quantity (tonnes)	Release level	EWC code	EWC description	Hazardous waste
R9	Oil e-refining or other reuses of oil	2.5	Absolute Value	13 02 05	mineral-based non-chlorinated engine, gear and lubricating oils	Yes
R13	Storage of wastes pending any of the operations numbered R1 to R12 (excluding temporary storage, pending collection, on the site where it is produced)	9.54	Absolute Value	13 07 03	other fuels (including mixtures)	Yes
R13	Storage of wastes pending any of the operations numbered R1 to R12 (excluding temporary storage, pending collection, on the site where it is produced)	9.85	Absolute Value	15 01 10	packaging containing residues of or contaminated by dangerous substances	Yes
R13	Storage of wastes pending any of the operations numbered R1 to R12 (excluding temporary storage, pending collection, on the site where it is produced)	0.823	Absolute Value	16 05 06	laboratory chemicals, consisting of or containing dangerous substances, including mixtures of laboratory chemicals	Yes



Route	Route description	Quantity (tonnes)	Release level	EWC code	EWC description	Hazardous waste
R13	Storage of wastes pending any of the operations numbered R1 to R12 (excluding temporary storage, pending collection, on the site where it is produced)	0.15	Absolute Value	16 09 04	oxidising substances, not otherwise specified	Yes
R13	Storage of wastes pending any of the operations numbered R1 to R12 (excluding temporary storage, pending collection, on the site where it is produced)	1.19	Absolute Value	20 01 35	discarded electrical and electronic equipment other than those mentioned in 20 01 21 and 20 01 23 containing hazardous components (6)	Yes
R3	Recycling/Reclamation of organic substances which are not used as solvents (including composting and other biological transformatin processes)	11409	Absolute Value	02 03 04	materials unsuitable for consumption or processing	No
D15	Storage pending any of the operations numbered D1 to D14 (excluding temporary storage pending collection, on the site where it is produced)	7.5	Absolute Value	15 01 02	plastic packaging	No
R3	Recycling/Reclamation of organic substances which are not used as solvents (including composting and other biological transformatin processes)	15.4	Absolute Value	15 01 03	wooden packaging	No
R4	Recycling/reclamation of metals and metal compounds	10.9	Absolute Value	17 04 07	mixed metals	No
D8	Biological treatment not specified elsewhere in this Table which results in final compounds or mixtures which are discarded by means of any of the operations numbers D1 to D12	547.7	Absolute Value	20 03 04	septic tank sludge	No
R3	Recycling/Reclamation of organic substances which are not used as solvents (including composting and other biological transformatin processes)	8924	Absolute Value	20 03 01	mixed municipal waste	No
R13	Storage of wastes pending any of the operations numbered R1 to R12 (excluding temporary storage, pending collection, on the site where it is produced)	Below Reporting Threshold	Below Reporting Threshold	15 01 02	plastic packaging	No



Route	Route description	Quantity (tonnes)	Release level	EWC code	EWC description	Hazardous waste
D15	Storage pending any of the operations numbered D1 to D14 (excluding temporary storage pending collection, on the site where it is produced)	Below Reporting Threshold	Below Reporting Threshold	15 01 07	glass packaging	No
R13	Storage of wastes pending any of the operations numbered R1 to R12 (excluding temporary storage, pending collection, on the site where it is produced)	Below Reporting Threshold	Below Reporting Threshold	15 02 03	absorbents, filter materials, wiping cloths and protective clothing other than those mentioned in 15 02 02	No
R13	Storage of wastes pending any of the operations numbered R1 to R12 (excluding temporary storage, pending collection, on the site where it is produced)	Below Reporting Threshold	Below Reporting Threshold	17 05 06	dredging spoil other than those mentioned in 17 05 05	No
R13	Storage of wastes pending any of the operations numbered R1 to R12 (excluding temporary storage, pending collection, on the site where it is produced)	Below Reporting Threshold	Below Reporting Threshold	19 12 12	other wastes (including mixtures of materials) from mechanical treatment of wastes other than those mentioned in 19 12 11	No
R13	Storage of wastes pending any of the operations numbered R1 to R12 (excluding temporary storage, pending collection, on the site where it is produced)	Below Reporting Threshold	Below Reporting Threshold	20 01 38	wood other than that mentioned in 20 01 37	No

This data is sourced from the Environment Agency and the Scottish Environment Protection Agency.

4.21 Pollution inventory radioactive waste

Records within 500m

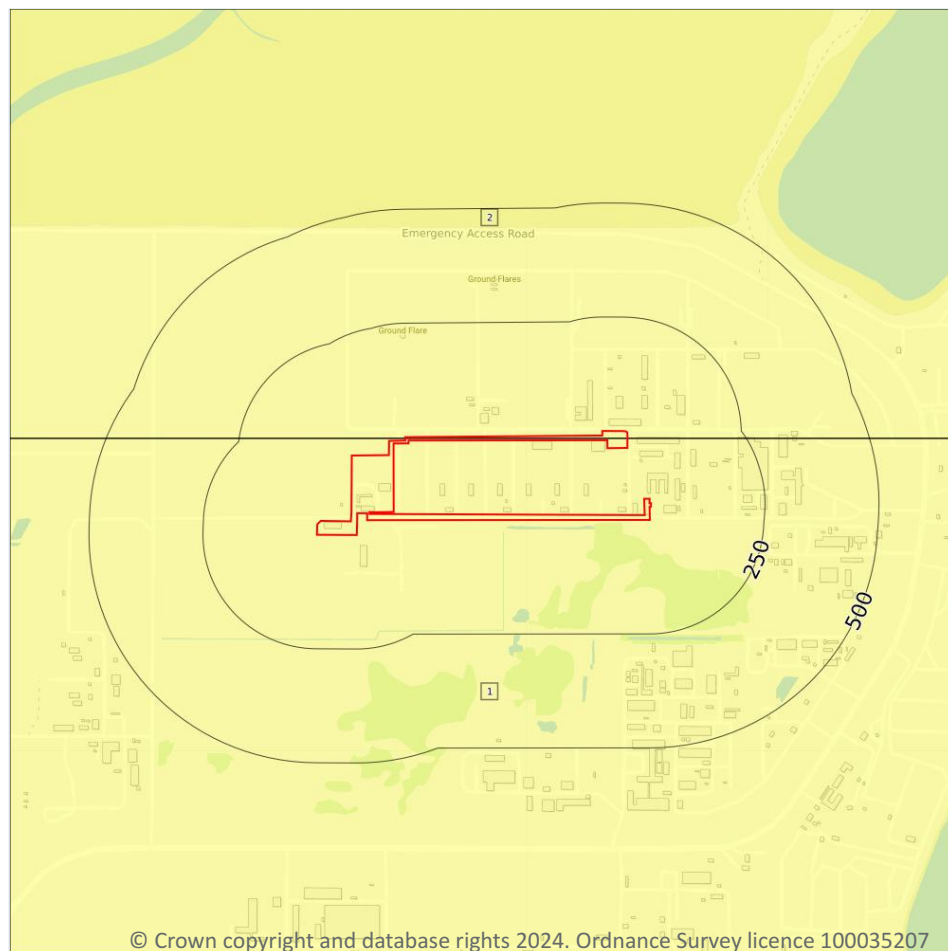
0

The pollution inventory (radioactive wastes) includes reporting on annual releases of radioactive substances from a site, including the means of release. Where releases fall below the reporting threshold, no value will be given. The data is given for the most recent complete year available.

This data is sourced from the Environment Agency and the Scottish Environment Protection Agency.



5 Hydrogeology - Superficial aquifer



- Site Outline
- Search buffers in metres (m)
- Principal
 - Secondary A
 - Secondary B
 - Secondary Undifferentiated
 - Unproductive
 - Unknown

5.1 Superficial aquifer

Records within 500m

2

Aquifer status of groundwater held within superficial geology.

Features are displayed on the Hydrogeology map on [page 104 >](#)

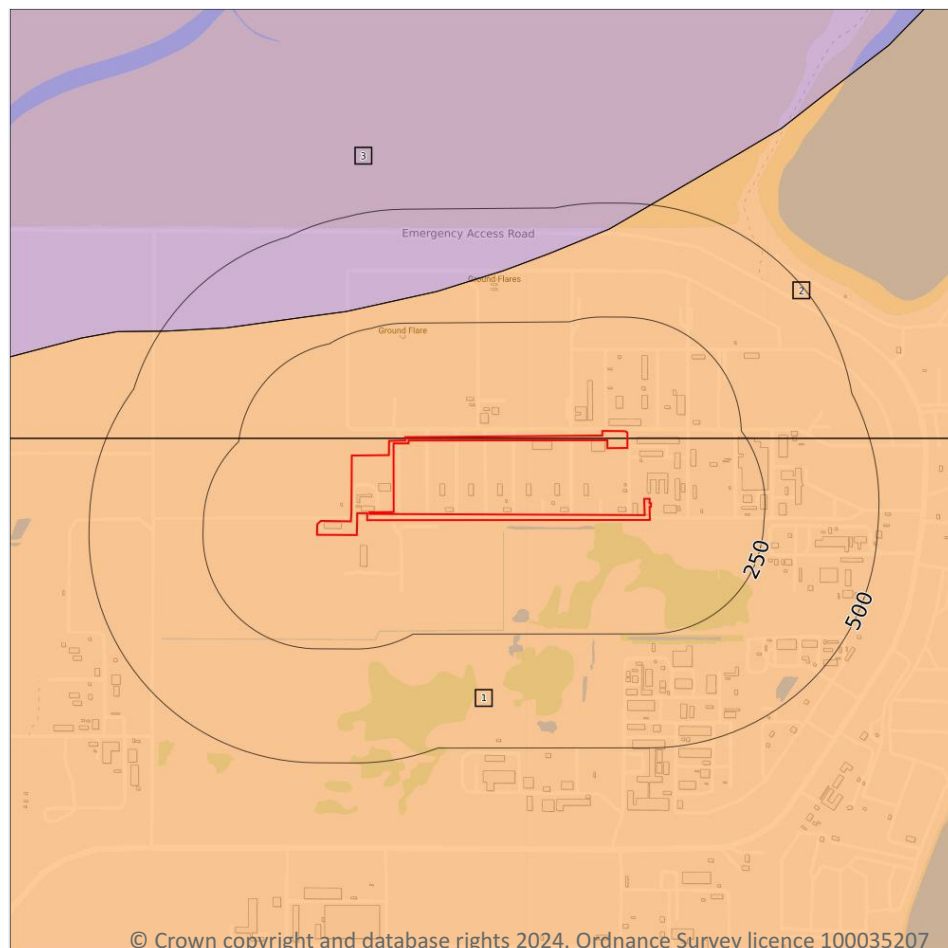
ID	Location	Designation	Description
1	On site	Secondary Undifferentiated	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type
2	On site	Secondary Undifferentiated	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type



This data is sourced from the British Geological Survey, the Environment Agency and Natural Resources Wales.



Bedrock aquifer



- Site Outline
- Search buffers in metres (m)
- Principal
 - Secondary A
 - Secondary B
 - Secondary Undifferentiated
 - Unproductive

5.2 Bedrock aquifer

Records within 500m

3

Aquifer status of groundwater held within bedrock geology.

Features are displayed on the Bedrock aquifer map on [page 106 >](#)

ID	Location	Designation	Description
1	On site	Secondary B	Predominantly lower permeability layers which may store/yield limited amounts of groundwater due to localised features such as fissures, thin permeable horizons and weathering. These are generally the water-bearing parts of the former non-aquifers
2	On site	Secondary B	Predominantly lower permeability layers which may store/yield limited amounts of groundwater due to localised features such as fissures, thin permeable horizons and weathering. These are generally the water-bearing parts of the former non-aquifers

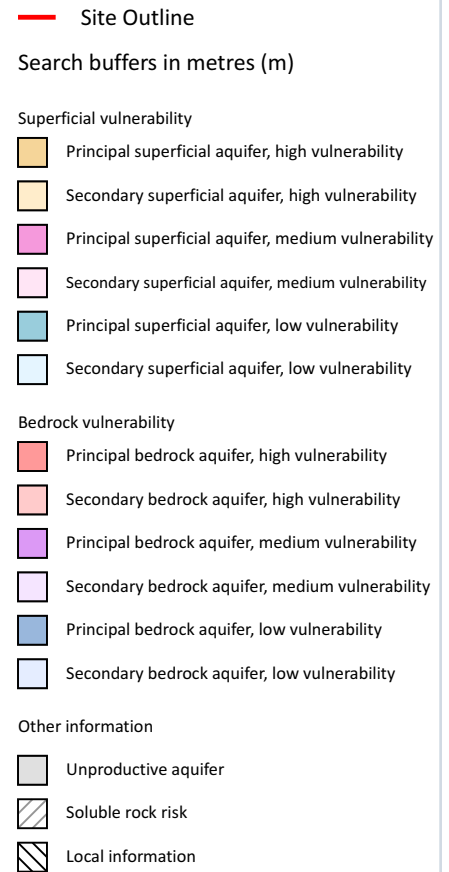
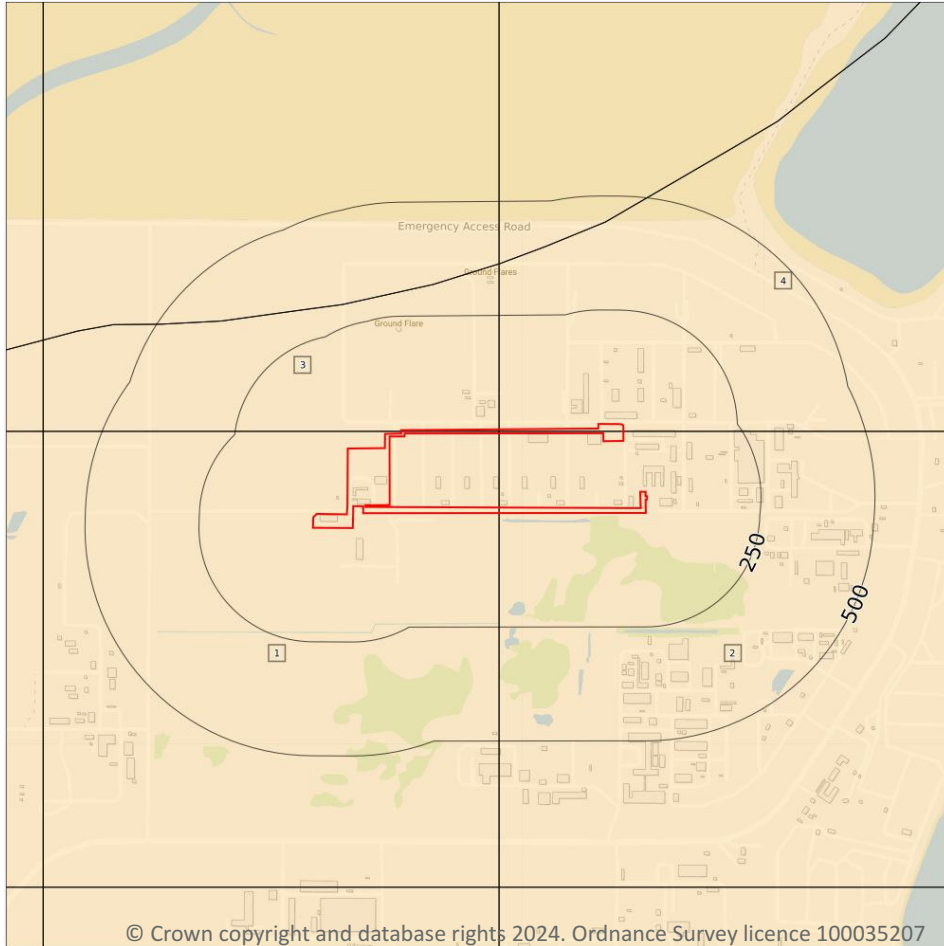


ID	Location	Designation	Description
3	297m N	Principal	Geology of high intergranular and/or fracture permeability, usually providing a high level of water storage and may support water supply/river base flow on a strategic scale. Generally principal aquifers were previously major aquifers

This data is sourced from the British Geological Survey, the Environment Agency and Natural Resources Wales.



Groundwater vulnerability



5.3 Groundwater vulnerability

Records within 50m

4

An assessment of the vulnerability of groundwater to a pollutant discharged at ground level based on the hydrological, geological, hydrogeological and soil properties within a one kilometre square grid. Groundwater vulnerability is described as High, Medium or Low as follows:

- High - Areas able to easily transmit pollution to groundwater. They are likely to be characterised by high leaching soils and the absence of low permeability superficial deposits.
- Medium - Intermediate between high and low vulnerability.
- Low - Areas that provide the greatest protection from pollution. They are likely to be characterised by low leaching soils and/or the presence of superficial deposits characterised by a low permeability.

Features are displayed on the Groundwater vulnerability map on [page 108](#) >



ID	Location	Summary	Soil / surface	Superficial geology	Bedrock geology
1	On site	Summary Classification: Secondary superficial aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer	Leaching class: High Infiltration value: >70% Dilution value: <300mm/year	Vulnerability: High Aquifer type: Secondary Thickness: >10m Patchiness value: >90% Recharge potential: High	Vulnerability: Medium Aquifer type: Secondary Flow mechanism: Well connected fractures
2	On site	Summary Classification: Secondary superficial aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer	Leaching class: High Infiltration value: >70% Dilution value: <300mm/year	Vulnerability: High Aquifer type: Secondary Thickness: >10m Patchiness value: >90% Recharge potential: No Data	Vulnerability: Medium Aquifer type: Secondary Flow mechanism: Well connected fractures
3	On site	Summary Classification: Secondary superficial aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer	Leaching class: High Infiltration value: >70% Dilution value: <300mm/year	Vulnerability: High Aquifer type: Secondary Thickness: >10m Patchiness value: >90% Recharge potential: No Data	Vulnerability: Medium Aquifer type: Secondary Flow mechanism: Well connected fractures
4	On site	Summary Classification: Secondary superficial aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer	Leaching class: High Infiltration value: No Data% Dilution value: No Datamm/year	Vulnerability: High Aquifer type: Secondary Thickness: >10m Patchiness value: >90% Recharge potential: No Data	Vulnerability: Medium Aquifer type: Secondary Flow mechanism: Well connected fractures

This data is sourced from the British Geological Survey, the Environment Agency and Natural Resources Wales.

5.4 Groundwater vulnerability- soluble rock risk

Records on site

0

This dataset identifies areas where solution features that enable rapid movement of a pollutant may be present within a 1km grid square.

This data is sourced from the British Geological Survey and the Environment Agency.



5.5 Groundwater vulnerability- local information

Records on site

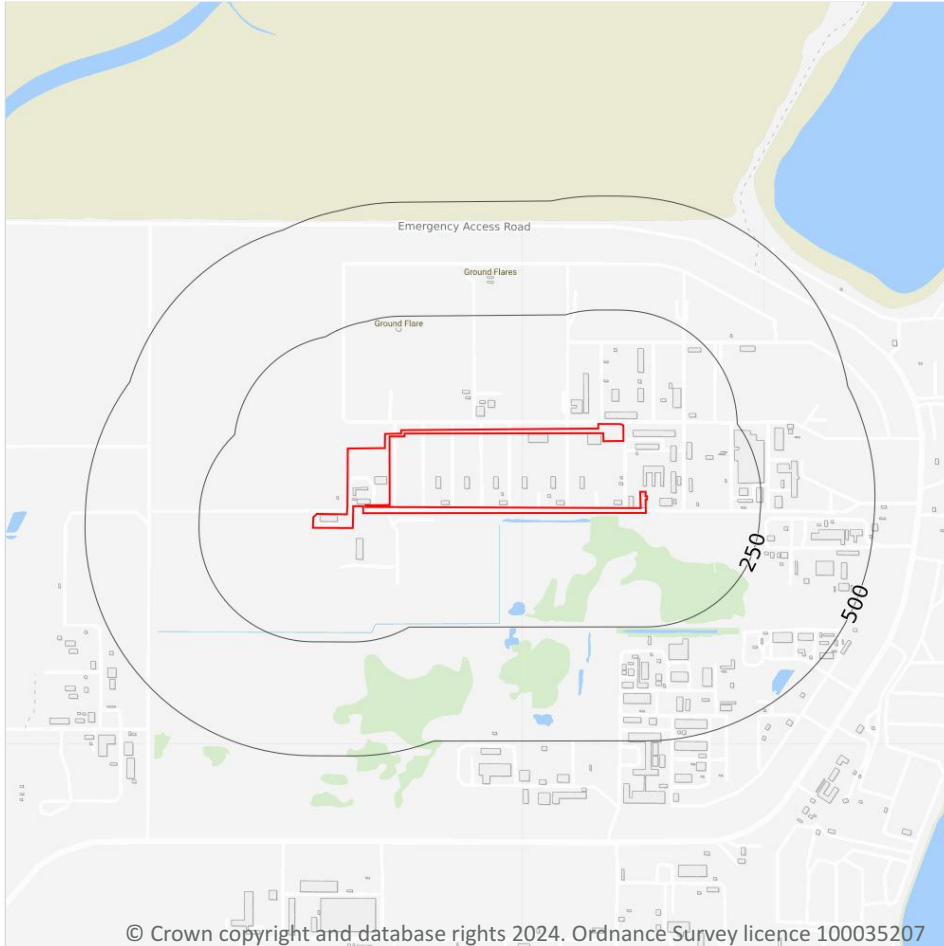
0

This dataset identifies areas where additional local information affecting vulnerability is held by the Environment Agency. Further information can be obtained by contacting the Environment Agency local Area groundwater team through the Environment Agency National Customer Call Centre on 03798 506 506 or by email on enquiries@environment-agency.gov.uk ↗.

This data is sourced from the British Geological Survey and the Environment Agency.



Abstractions and Source Protection Zones



- Site Outline
- Search buffers in metres (m)
- Source Protection Zone 1
Inner catchment
- Source Protection Zone 2
Outer catchment
- Source Protection Zone 3
Total catchment
- Source Protection Zone 4
Zone of Special Interest
- Source Protection Zone 1c
Inner catchment - confined aquifer
- Source Protection Zone 2c
Outer catchment - confined aquifer
- Source Protection Zone 3c
Total catchment - confined aquifer
- Drinking water abstraction licences
Polygon features
- Drinking water abstraction licences
Linear features
- Groundwater abstraction licence (point)
- Groundwater abstraction licence (area)
- Groundwater abstraction licence (linear)
- Surface Water Abstractions (point)
- Surface Water Abstractions (area)
- Surface Water Abstractions (linear)

5.6 Groundwater abstractions

Records within 2000m

29

Licensed groundwater abstractions for sites extracting more than 20 cubic metres of water a day and includes active and historical records. The data may be for a single abstraction point, between two points (line data) or a larger area.

Features are displayed on the Abstractions and Source Protection Zones map on [page 111](#) >



ID	Location	Details	
-	1321m SW	Status: Active Licence No: 1/25/04/164 Details: General Use Relating To Secondary Category (Very Low Loss) Direct Source: GROUNDWATERS Point: BOREHOLES X8 - MERCIA MUDSTONE - PORT CLARENCE Data Type: Line Name: North Tees Ltd Easting: 452310 Northing: 523190	Annual Volume (m ³): 450000 Max Daily Volume (m ³): 1500 Original Application No: NPS/WR/020796 Original Start Date: 27/11/1996 Expiry Date: - Issue No: 104 Version Start Date: 12/10/2015 Version End Date: -
-	1321m SW	Status: Historical Licence No: 1/25/04/164 Details: General use relating to Secondary Category (Very Low Loss) Direct Source: GROUNDWATERS Point: BOREHOLES X8 - TRIASSIC MUDSTONES Data Type: Line Name: I C I CHEMICALS & POLYMERS LTD Easting: 452310 Northing: 523190	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 27/11/1996 Expiry Date: - Issue No: 102 Version Start Date: 09/03/2004 Version End Date: -
-	1321m SW	Status: Historical Licence No: 1/25/04/164 Details: General use relating to Secondary Category (Very Low Loss) Direct Source: GROUNDWATERS Point: BOREHOLES X8 - TRIASSIC MERCIA MUDSTONES - PORT CLARENCE Data Type: Line Name: I C I CHEMICALS & POLYMERS LTD Easting: 452310 Northing: 523190	Annual Volume (m ³): 450000 Max Daily Volume (m ³): 1500 Original Application No: - Original Start Date: 27/11/1996 Expiry Date: - Issue No: 102 Version Start Date: 09/03/2004 Version End Date: -
-	1326m W	Status: Active Licence No: 1/25/04/134 Details: General Use Relating To Secondary Category (Medium Loss) Direct Source: GROUNDWATERS Point: BOREHOLE - SHERWOOD SANDSTONE - SEAL SANDS Data Type: Point Name: SABIC UK PETROCHEMICALS Easting: 451280 Northing: 525000	Annual Volume (m ³): 1800000 Max Daily Volume (m ³): 6478 Original Application No: 9971 Original Start Date: 11/04/1975 Expiry Date: - Issue No: 108 Version Start Date: 29/12/2006 Version End Date: -



ID	Location	Details	
-	1326m W	Status: Active Licence No: 1/25/04/134 Details: General Use Relating To Secondary Category (Low Loss) Direct Source: GROUNDWATERS Point: BOREHOLE - SHERWOOD SANDSTONE - SEAL SANDS Data Type: Point Name: SABIC UK PETROCHEMICALS Easting: 451280 Northing: 525000	Annual Volume (m ³): 1800000 Max Daily Volume (m ³): 6478 Original Application No: 9971 Original Start Date: 11/04/1975 Expiry Date: - Issue No: 108 Version Start Date: 29/12/2006 Version End Date: -
-	1326m W	Status: Active Licence No: 1/25/04/134 Details: General Use Relating To Secondary Category (Medium Loss) Direct Source: GROUNDWATERS Point: BOREHOLE - SHERWOOD SANDSTONE - SEAL SANDS Data Type: Point Name: SABIC UK PETROCHEMICALS Easting: 451280 Northing: 525000	Annual Volume (m ³): 1800000 Max Daily Volume (m ³): 6478 Original Application No: 9971 Original Start Date: 11/04/1975 Expiry Date: - Issue No: 108 Version Start Date: 29/12/2006 Version End Date: -
-	1326m W	Status: Historical Licence No: 1/25/04/134 Details: General use relating to Secondary Category (Medium Loss) Direct Source: GROUNDWATERS Point: BOREHOLE Data Type: Point Name: I C I CHEMICAL & POLYMERS GROUP Easting: 451280 Northing: 525000	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 11/04/1975 Expiry Date: - Issue No: 100 Version Start Date: 23/06/1993 Version End Date: -
-	1326m W	Status: Historical Licence No: 1/25/04/134 Details: Make-Up or Top Up Water Direct Source: GROUNDWATERS Point: BOREHOLE - SHERWOOD SANDSTONE - SEAL SANDS Data Type: Point Name: HUNTSMAN PETROCHEMICALS (UK) LTD Easting: 451280 Northing: 525000	Annual Volume (m ³): 1800000 Max Daily Volume (m ³): 6478 Original Application No: - Original Start Date: 11/04/1975 Expiry Date: - Issue No: 106 Version Start Date: 11/08/2005 Version End Date: -



ID	Location	Details	
-	1326m W	Status: Historical Licence No: 1/25/04/134 Details: Make-Up or Top Up Water Direct Source: GROUNDWATERS Point: BOREHOLE - SHERWOOD SANDSTONE - SEAL SANDS Data Type: Point Name: HUNTSMAN PETROCHEMICALS (UK) LTD Easting: 451280 Northing: 525000	Annual Volume (m ³): 1800000 Max Daily Volume (m ³): 6478 Original Application No: - Original Start Date: 11/04/1975 Expiry Date: - Issue No: 106 Version Start Date: 11/08/2005 Version End Date: -
-	1365m W	Status: Active Licence No: 1/25/04/134 Details: General Use Relating To Secondary Category (Medium Loss) Direct Source: GROUNDWATERS Point: BOREHOLE W10 - SHERWOOD SANDSTONE - SEAL SANDS Data Type: Point Name: SABIC UK PETROCHEMICALS Easting: 451230 Northing: 524700	Annual Volume (m ³): 1800000 Max Daily Volume (m ³): 6478 Original Application No: 9971 Original Start Date: 11/04/1975 Expiry Date: - Issue No: 108 Version Start Date: 29/12/2006 Version End Date: -
-	1365m W	Status: Active Licence No: 1/25/04/134 Details: General Use Relating To Secondary Category (Low Loss) Direct Source: GROUNDWATERS Point: BOREHOLE W10 - SHERWOOD SANDSTONE - SEAL SANDS Data Type: Point Name: SABIC UK PETROCHEMICALS Easting: 451230 Northing: 524700	Annual Volume (m ³): 1800000 Max Daily Volume (m ³): 6478 Original Application No: 9971 Original Start Date: 11/04/1975 Expiry Date: - Issue No: 108 Version Start Date: 29/12/2006 Version End Date: -
-	1365m W	Status: Active Licence No: 1/25/04/134 Details: General Use Relating To Secondary Category (Medium Loss) Direct Source: GROUNDWATERS Point: BOREHOLE W10 - SHERWOOD SANDSTONE - SEAL SANDS Data Type: Point Name: SABIC UK PETROCHEMICALS Easting: 451230 Northing: 524700	Annual Volume (m ³): 1800000 Max Daily Volume (m ³): 6478 Original Application No: 9971 Original Start Date: 11/04/1975 Expiry Date: - Issue No: 108 Version Start Date: 29/12/2006 Version End Date: -



ID	Location	Details	
-	1365m W	Status: Historical Licence No: 1/25/04/133 Details: General use relating to Secondary Category (Medium Loss) Direct Source: GROUNDWATERS Point: BOREHOLE W10 - SHERWOOD SANDSTONE - SEAL SANDS Data Type: Point Name: HUNTSMAN PETROCHEMICALS (UK) LTD Easting: 451230 Northing: 524700	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 11/04/1975 Expiry Date: - Issue No: 104 Version Start Date: 01/07/2003 Version End Date: -
-	1365m W	Status: Historical Licence No: 1/25/04/134 Details: Make-Up or Top Up Water Direct Source: GROUNDWATERS Point: BOREHOLE W10 - SHERWOOD SANDSTONE - SEAL SANDS Data Type: Point Name: HUNTSMAN PETROCHEMICALS (UK) LTD Easting: 451230 Northing: 524700	Annual Volume (m ³): 1800000 Max Daily Volume (m ³): 6478 Original Application No: - Original Start Date: 11/04/1975 Expiry Date: - Issue No: 106 Version Start Date: 11/08/2005 Version End Date: -
-	1365m W	Status: Historical Licence No: 1/25/04/134 Details: Make-Up or Top Up Water Direct Source: GROUNDWATERS Point: BOREHOLE W10 - SHERWOOD SANDSTONE - SEAL SANDS Data Type: Point Name: HUNTSMAN PETROCHEMICALS (UK) LTD Easting: 451230 Northing: 524700	Annual Volume (m ³): 1800000 Max Daily Volume (m ³): 6478 Original Application No: - Original Start Date: 11/04/1975 Expiry Date: - Issue No: 106 Version Start Date: 11/08/2005 Version End Date: -
-	1453m W	Status: Active Licence No: 1/25/04/134 Details: General Use Relating To Secondary Category (Medium Loss) Direct Source: GROUNDWATERS Point: BOREHOLE - SHERWOOD SANDSTONE - SEAL SANDS Data Type: Point Name: SABIC UK PETROCHEMICALS Easting: 451200 Northing: 524370	Annual Volume (m ³): 1800000 Max Daily Volume (m ³): 6478 Original Application No: 9971 Original Start Date: 11/04/1975 Expiry Date: - Issue No: 108 Version Start Date: 29/12/2006 Version End Date: -



ID	Location	Details	
-	1453m W	Status: Active Licence No: 1/25/04/134 Details: General Use Relating To Secondary Category (Medium Loss) Direct Source: GROUNDWATERS Point: BOREHOLE - SHERWOOD SANDSTONE - SEAL SANDS Data Type: Point Name: SABIC UK PETROCHEMICALS Easting: 451200 Northing: 524370	Annual Volume (m ³): 1800000 Max Daily Volume (m ³): 6478 Original Application No: 9971 Original Start Date: 11/04/1975 Expiry Date: - Issue No: 108 Version Start Date: 29/12/2006 Version End Date: -
-	1453m W	Status: Active Licence No: 1/25/04/134 Details: General Use Relating To Secondary Category (Low Loss) Direct Source: GROUNDWATERS Point: BOREHOLE - SHERWOOD SANDSTONE - SEAL SANDS Data Type: Point Name: SABIC UK PETROCHEMICALS Easting: 451200 Northing: 524370	Annual Volume (m ³): 1800000 Max Daily Volume (m ³): 6478 Original Application No: 9971 Original Start Date: 11/04/1975 Expiry Date: - Issue No: 108 Version Start Date: 29/12/2006 Version End Date: -
-	1453m W	Status: Historical Licence No: 1/25/04/134 Details: General use relating to Secondary Category (Medium Loss) Direct Source: GROUNDWATERS Point: BOREHOLE Data Type: Point Name: I C I CHEMICAL & POLYMERS GROUP Easting: 451200 Northing: 524370	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 11/04/1975 Expiry Date: - Issue No: 100 Version Start Date: 23/06/1993 Version End Date: -
-	1453m W	Status: Historical Licence No: 1/25/04/134 Details: Make-Up or Top Up Water Direct Source: GROUNDWATERS Point: BOREHOLE - SHERWOOD SANDSTONE - SEAL SANDS Data Type: Point Name: HUNTSMAN PETROCHEMICALS (UK) LTD Easting: 451200 Northing: 524370	Annual Volume (m ³): 1800000 Max Daily Volume (m ³): 6478 Original Application No: - Original Start Date: 11/04/1975 Expiry Date: - Issue No: 106 Version Start Date: 11/08/2005 Version End Date: -



ID	Location	Details	
-	1453m W	Status: Historical Licence No: 1/25/04/134 Details: Make-Up or Top Up Water Direct Source: GROUNDWATERS Point: BOREHOLE - SHERWOOD SANDSTONE - SEAL SANDS Data Type: Point Name: HUNTSMAN PETROCHEMICALS (UK) LTD Easting: 451200 Northing: 524370	Annual Volume (m ³): 1800000 Max Daily Volume (m ³): 6478 Original Application No: - Original Start Date: 11/04/1975 Expiry Date: - Issue No: 106 Version Start Date: 11/08/2005 Version End Date: -
-	1453m W	Status: Historical Licence No: 1/25/04/068 Details: General Use Relating To Secondary Category (Medium Loss) Direct Source: GROUNDWATERS Point: BOREHOLE X2 - TRIASSIC MUDSTONES - SEAL SANDS Data Type: Line Name: I C I LTD Easting: 451140 Northing: 524100	Annual Volume (m ³): 2954545 Max Daily Volume (m ³): 9591 Original Application No: - Original Start Date: 30/09/1966 Expiry Date: - Issue No: 100 Version Start Date: 30/09/1966 Version End Date: -
-	1571m SW	Status: Active Licence No: 1/25/04/134 Details: General Use Relating To Secondary Category (Low Loss) Direct Source: GROUNDWATERS Point: BOREHOLE - SHERWOOD SANDSTONE - SEAL SANDS Data Type: Point Name: SABIC UK PETROCHEMICALS Easting: 451180 Northing: 524100	Annual Volume (m ³): 1800000 Max Daily Volume (m ³): 6478 Original Application No: 9971 Original Start Date: 11/04/1975 Expiry Date: - Issue No: 108 Version Start Date: 29/12/2006 Version End Date: -
-	1571m SW	Status: Active Licence No: 1/25/04/134 Details: General Use Relating To Secondary Category (Medium Loss) Direct Source: GROUNDWATERS Point: BOREHOLE - SHERWOOD SANDSTONE - SEAL SANDS Data Type: Point Name: SABIC UK PETROCHEMICALS Easting: 451180 Northing: 524100	Annual Volume (m ³): 1800000 Max Daily Volume (m ³): 6478 Original Application No: 9971 Original Start Date: 11/04/1975 Expiry Date: - Issue No: 108 Version Start Date: 29/12/2006 Version End Date: -



ID	Location	Details	
-	1571m SW	Status: Active Licence No: 1/25/04/134 Details: General Use Relating To Secondary Category (Medium Loss) Direct Source: GROUNDWATERS Point: BOREHOLE - SHERWOOD SANDSTONE - SEAL SANDS Data Type: Point Name: SABIC UK PETROCHEMICALS Easting: 451180 Northing: 524100	Annual Volume (m ³): 1800000 Max Daily Volume (m ³): 6478 Original Application No: 9971 Original Start Date: 11/04/1975 Expiry Date: - Issue No: 108 Version Start Date: 29/12/2006 Version End Date: -
-	1571m SW	Status: Historical Licence No: 1/25/04/134 Details: General use relating to Secondary Category (Medium Loss) Direct Source: GROUNDWATERS Point: BOREHOLE Data Type: Point Name: I C I CHEMICAL & POLYMERS GROUP Easting: 451180 Northing: 524100	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 11/04/1975 Expiry Date: - Issue No: 100 Version Start Date: 23/06/1993 Version End Date: -
-	1571m SW	Status: Historical Licence No: 1/25/04/134 Details: Make-Up or Top Up Water Direct Source: GROUNDWATERS Point: BOREHOLE - SHERWOOD SANDSTONE - SEAL SANDS Data Type: Point Name: HUNTSMAN PETROCHEMICALS (UK) LTD Easting: 451180 Northing: 524100	Annual Volume (m ³): 1800000 Max Daily Volume (m ³): 6478 Original Application No: - Original Start Date: 11/04/1975 Expiry Date: - Issue No: 106 Version Start Date: 11/08/2005 Version End Date: -
-	1571m SW	Status: Historical Licence No: 1/25/04/134 Details: Make-Up or Top Up Water Direct Source: GROUNDWATERS Point: BOREHOLE - SHERWOOD SANDSTONE - SEAL SANDS Data Type: Point Name: HUNTSMAN PETROCHEMICALS (UK) LTD Easting: 451180 Northing: 524100	Annual Volume (m ³): 1800000 Max Daily Volume (m ³): 6478 Original Application No: - Original Start Date: 11/04/1975 Expiry Date: - Issue No: 106 Version Start Date: 11/08/2005 Version End Date: -



ID	Location	Details	
-	1607m SW	Status: Historical Licence No: 1/25/04/133 Details: General use relating to Secondary Category (Medium Loss) Direct Source: GROUNDWATERS Point: BOREHOLE X 2 Data Type: Point Name: I C I CHEMICAL & POLYMERS GROUP Easting: 451140 Northing: 524100	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 11/04/1975 Expiry Date: - Issue No: 100 Version Start Date: 23/06/1993 Version End Date: -

This data is sourced from the Environment Agency and Natural Resources Wales.

5.7 Surface water abstractions

Records within 2000m	5
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Licensed surface water abstractions for sites extracting more than 20 cubic metres of water a day and includes active and historical records. The data may be for a single abstraction point, a stretch of watercourse or a larger area.

Features are displayed on the Abstractions and Source Protection Zones map on [page 111](#) >

ID	Location	Details	
-	1681m NE	Status: Historical Licence No: 1/25/04/135 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: SURFACE WATER Point: RIVER TEES ESTUARY Data Type: Point Name: BRITISH STEEL PLC Easting: 454700 Northing: 525900	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 19/05/1975 Expiry Date: - Issue No: 100 Version Start Date: 01/04/1993 Version End Date: -
-	1681m NE	Status: Historical Licence No: 1/25/04/135 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: SURFACE WATER Point: RIVER TEES ESTUARY Data Type: Point Name: CORUS UK LTD Easting: 454700 Northing: 525900	Annual Volume (m ³): 263832000 Max Daily Volume (m ³): 722828 Original Application No: - Original Start Date: 19/05/1975 Expiry Date: - Issue No: 101 Version Start Date: 17/04/2000 Version End Date: -



ID	Location	Details	
-	1797m N	Status: Historical Licence No: 1/25/04/120 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: SURFACE WATER Point: SEATON-ON-TEES CHANNEL Data Type: Point Name: BRITISH ENERGY GENERATION LTD Easting: 452900 Northing: 526800	Annual Volume (m ³): 1098981800 Max Daily Volume (m ³): 3010900 Original Application No: - Original Start Date: 27/09/1971 Expiry Date: - Issue No: 100 Version Start Date: 08/03/1999 Version End Date: -
-	1838m SE	Status: Historical Licence No: 1/25/04/123 Details: General use relating to Secondary Category (Medium Loss) Direct Source: SURFACE WATER Point: RIVER TEES Data Type: Point Name: TEES BULK HANDLING LTD Easting: 454600 Northing: 523500	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 31/05/1973 Expiry Date: - Issue No: 100 Version Start Date: 31/07/1974 Version End Date: -
-	1838m SE	Status: Historical Licence No: 1/25/04/123 Details: Dust suppression Direct Source: SURFACE WATER Point: RIVER TEES Data Type: Point Name: TEES BULK HANDLING LTD Easting: 454600 Northing: 523500	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 31/05/1973 Expiry Date: - Issue No: 100 Version Start Date: 31/07/1974 Version End Date: -

This data is sourced from the Environment Agency and Natural Resources Wales.

5.8 Potable abstractions

Records within 2000m

0

Licensed potable water abstractions for sites extracting more than 20 cubic metres of water a day and includes active and historical records. The data may be for a single abstraction point, a stretch of watercourse or a larger area.

This data is sourced from the Environment Agency and Natural Resources Wales.



5.9 Source Protection Zones

Records within 500m	0
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Source Protection Zones define the sensitivity of an area around a potable abstraction site to contamination.

This data is sourced from the Environment Agency and Natural Resources Wales.

5.10 Source Protection Zones (confined aquifer)

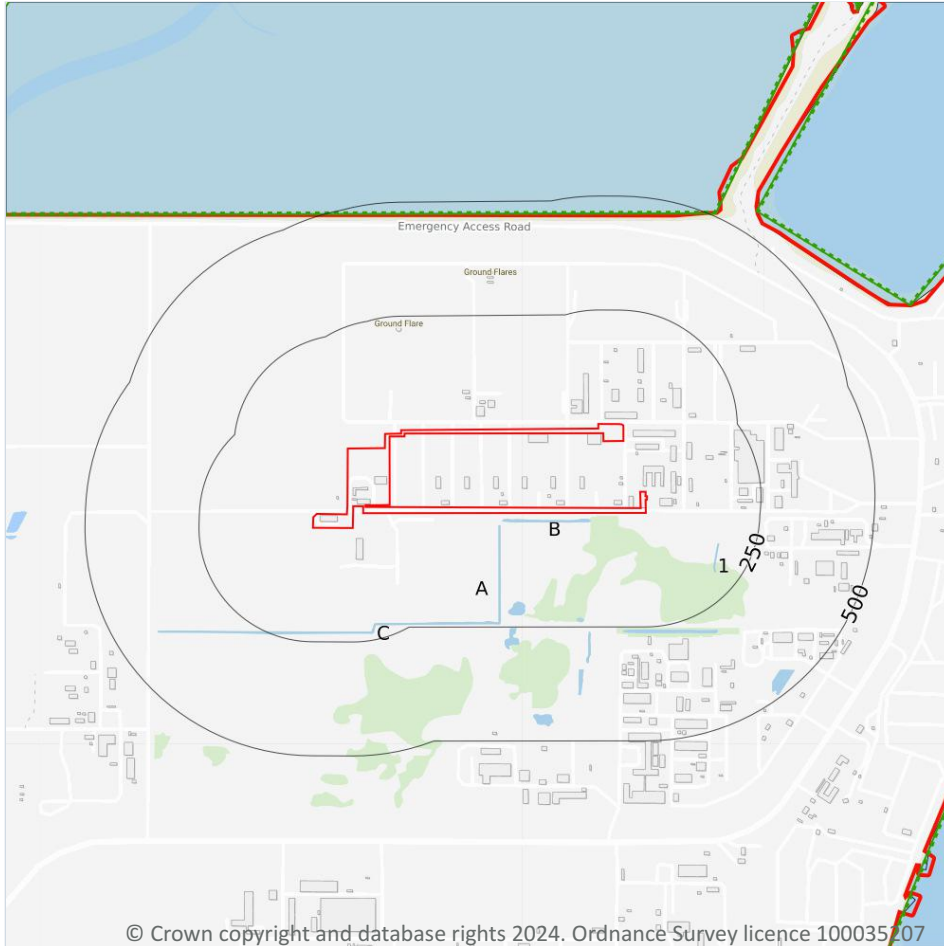
Records within 500m	0
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Source Protection Zones in the confined aquifer define the sensitivity around a deep groundwater abstraction to contamination. A confined aquifer would normally be protected from contamination by overlying geology and is only considered a sensitive resource if deep excavation/drilling is taking place.

This data is sourced from the Environment Agency and Natural Resources Wales.



6 Hydrology



- Site Outline
- Search buffers in metres (m)
- Water Network (OS MasterMap)
- Surface water features (wider than 5m)
- Surface water features (narrower than 5m)
- ⋯ WFD River, canal and surface water transfer water bodies
- WFD Lake water bodies
- WFD Transitional and coastal water bodies
- WFD Surface water body catchments boundaries
- WFD Groundwater body boundaries

6.1 Water Network (OS MasterMap)

Records within 250m

3

Detailed water network of Great Britain showing the flow and precise central course of every river, stream, lake and canal.

Features are displayed on the Hydrology map on [page 122 >](#)

ID	Location	Type of water feature	Ground level	Permanence	Name
B	15m E	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-



ID	Location	Type of water feature	Ground level	Permanence	Name
C	27m SE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
1	173m E	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-

This data is sourced from the Ordnance Survey.

6.2 Surface water features

Records within 250m

4

Covering rivers, streams and lakes (some overlap with OS MasterMap Water Network data in previous section) but additionally covers smaller features such as ponds. Rivers and streams narrower than 5m are represented as a single line. Lakes, ponds and rivers or streams wider than 5m are represented as polygons.

Features are displayed on the Hydrology map on [page 122 >](#)

This data is sourced from the Ordnance Survey.

6.3 WFD Surface water body catchments

Records on site

1

The Water Framework Directive is an EU-led framework for the protection of inland surface waters, estuaries, coastal waters and groundwater through river basin-level management planning. In terms of surface water, these basins are broken down into smaller units known as management, operational and water body catchments.

Features are displayed on the Hydrology map on [page 122 >](#)

ID	Location	Type	Water body catchment	Water body ID	Operational catchment	Management catchment
A	On site	Coastal Catchment	Not part of a river WB catchment	10	Tees Lower and Estuary	Tees

This data is sourced from the Environment Agency and Natural Resources Wales.



6.4 WFD Surface water bodies

Records identified

0

Surface water bodies under the Directive may be rivers, lakes, estuary or coastal. To achieve the purpose of the Directive, environmental objectives have been set and are reported on for each water body. The progress towards delivery of the objectives is then reported on by the relevant competent authorities at the end of each six-year cycle. The river water body directly associated with the catchment listed in the previous section is detailed below, along with any lake, canal, coastal or artificial water body within 250m of the site. Click on the water body ID in the table to visit the EA Catchment Explorer to find out more about each water body listed.

This data is sourced from the Environment Agency and Natural Resources Wales.

6.5 WFD Groundwater bodies

Records on site

1

Groundwater bodies are also covered by the Directive and the same regime of objectives and reporting detailed in the previous section is in place. Click on the water body ID in the table to visit the EA Catchment Explorer to find out more about each groundwater body listed.

Features are displayed on the Hydrology map on [page 122 >](#)

ID	Location	Name	Water body ID	Overall rating	Chemical rating	Quantitative	Year
A	On site	Tees Sherwood Sandstone	GB40301G702000 ↗	Good	Good	Good	2019

This data is sourced from the Environment Agency and Natural Resources Wales.



7 River and coastal flooding

7.1 Risk of flooding from rivers and the sea

Records within 50m

0

The chance of flooding from rivers and/or the sea in any given year, based on cells of 50m within the Risk of Flooding from Rivers and Sea (RoFRaS)/Flood Risk Assessment Wales (FRAW) models. Each cell is allocated one of four flood risk categories, taking into account flood defences and their condition. The risk categories for RoFRaS for rivers and the sea and FRAW for rivers are; Very low (less than 1 in 1000 chance in any given year), Low (less than 1 in 100 but greater than or equal to 1 in 1000 chance), Medium (less than 1 in 30 but greater than or equal to 1 in 100 chance) or High (greater than or equal to 1 in 30 chance). The risk categories for FRAW for the sea are; Very low (less than 1 in 1000 chance in any given year), Low (less than 1 in 200 but greater than or equal to 1 in 1000 chance), Medium (less than 1 in 30 but greater than or equal to 1 in 200 chance) or High (greater than or equal to 1 in 30 chance).

This data is sourced from the Environment Agency and Natural Resources Wales.

7.2 Historical Flood Events

Records within 250m

0

Records of historic flooding from rivers, the sea, groundwater and surface water. Records began in 1946 when predecessor bodies started collecting detailed information about flooding incidents, although limited details may be included on flooding incidents prior to this date. Takes into account the presence of defences, structures, and other infrastructure where they existed at the time of flooding, and includes flood extents that may have been affected by overtopping, breaches or blockages.

This data is sourced from the Environment Agency and Natural Resources Wales.

7.3 Flood Defences

Records within 250m

0

Records of flood defences owned, managed or inspected by the Environment Agency and Natural Resources Wales. Flood defences can be structures, buildings or parts of buildings. Typically these are earth banks, stone and concrete walls, or sheet-piling that is used to prevent or control the extent of flooding.

This data is sourced from the Environment Agency and Natural Resources Wales.



7.4 Areas Benefiting from Flood Defences

Records within 250m

0

Areas that would benefit from the presence of flood defences in a 1 in 100 (1%) chance of flooding each year from rivers or 1 in 200 (0.5%) chance of flooding each year from the sea.

This data is sourced from the Environment Agency and Natural Resources Wales.

7.5 Flood Storage Areas

Records within 250m

0

Areas that act as a balancing reservoir, storage basin or balancing pond to attenuate an incoming flood peak to a flow level that can be accepted by the downstream channel or to delay the timing of a flood peak so that its volume is discharged over a longer period.

This data is sourced from the Environment Agency and Natural Resources Wales.



River and coastal flooding - Flood Zones

7.6 Flood Zone 2

Records within 50m

0

Areas of land at risk of flooding, when the presence of flood defences are ignored. Covering land between Flood Zone 3 (see next section) and the extent of the flooding from rivers or the sea with a 1 in 1000 (0.1%) chance of flooding each year.

This data is sourced from the Environment Agency and Natural Resources Wales.

7.7 Flood Zone 3

Records within 50m

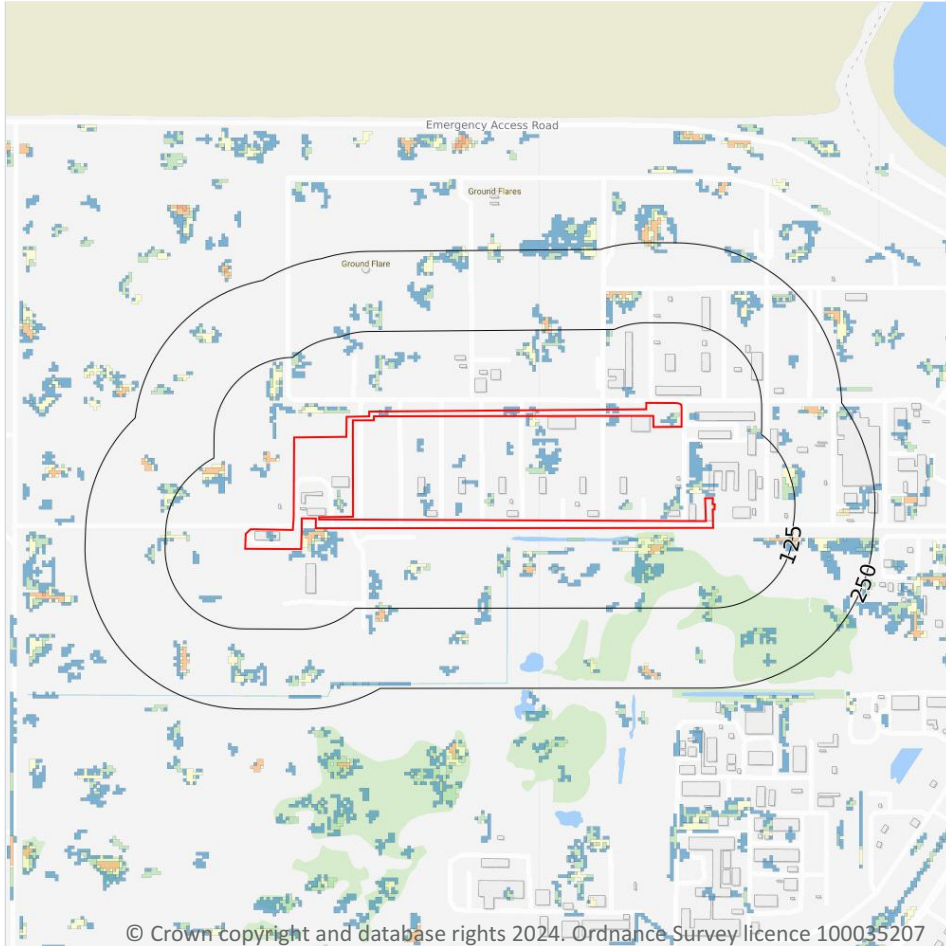
0

Areas of land at risk of flooding, when the presence of flood defences are ignored. Covering land with a 1 in 100 (1%) or greater chance of flooding each year from rivers or a 1 in 200 (0.5%) or greater chance of flooding each year from the sea.

This data is sourced from the Environment Agency and Natural Resources Wales.



8 Surface water flooding



— Site Outline

Search buffers in metres (m)

1 in 1000 return period

- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

1 in 250 return period

- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

1 in 100 return period

- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

1 in 30 return period

- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

8.1 Surface water flooding

Highest risk on site

1 in 250 year, 0.3m - 1.0m

Highest risk within 50m

1 in 30 year, 0.1m - 0.3m

Ambiental Risk Analytics surface water (pluvial) FloodMap identifies areas likely to flood as a result of extreme rainfall events, i.e. land naturally vulnerable to surface water ponding or flooding. This data set was produced by simulating 1 in 30 year, 1 in 100 year, 1 in 250 year and 1 in 1,000 year rainfall events. Modern urban drainage systems are typically built to cope with rainfall events between 1 in 20 and 1 in 30 years, though some older ones may flood in a 1 in 5 year rainfall event.

Features are displayed on the Surface water flooding map on [page 128 >](#)

The data shown on the map and in the table above shows the highest likelihood of flood events happening at the site. Lower likelihood events may have greater flood depths and hence a greater potential impact on a site.



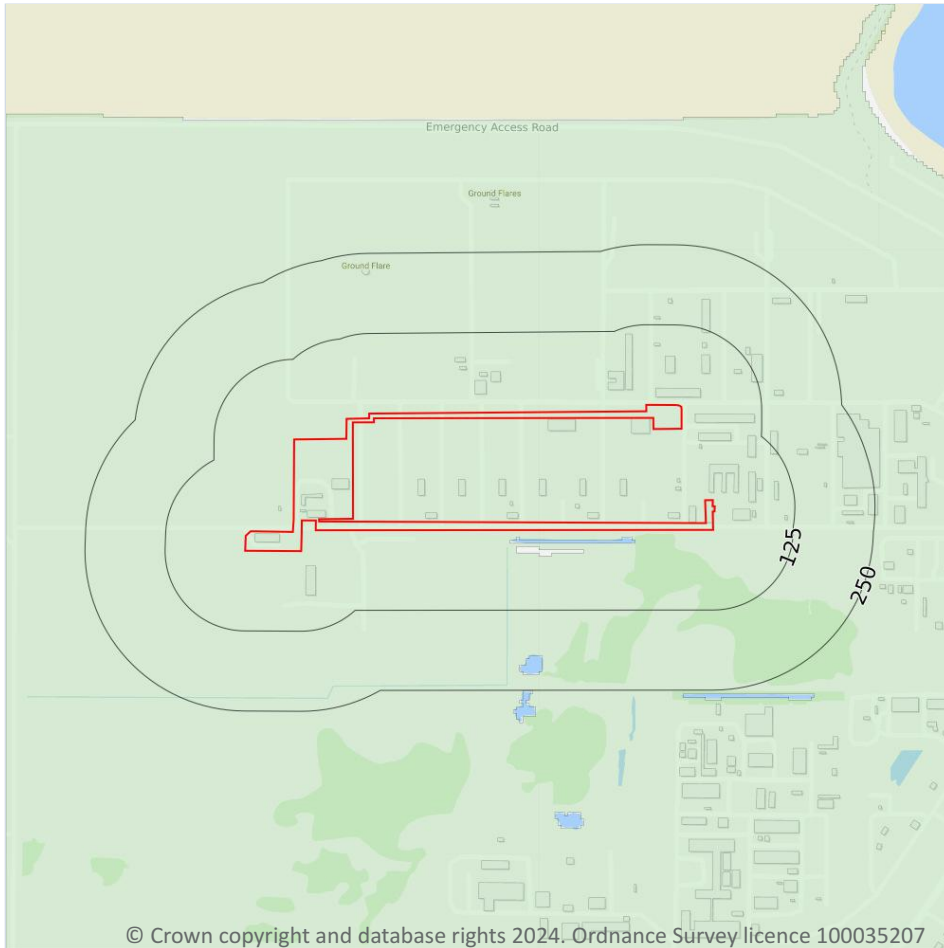
The table below shows the maximum flood depths for a range of return periods for the site.

Return period	Maximum modelled depth
1 in 1000 year	Greater than 1.0m
1 in 250 year	Between 0.3m and 1.0m
1 in 100 year	Negligible
1 in 30 year	Negligible

This data is sourced from Ambiental Risk Analytics.



9 Groundwater flooding



— Site Outline

Search buffers in metres (m)

- High
- Moderate - High
- Moderate
- Low
- Negligible

9.1 Groundwater flooding

Highest risk on site

Low

Highest risk within 50m

Low

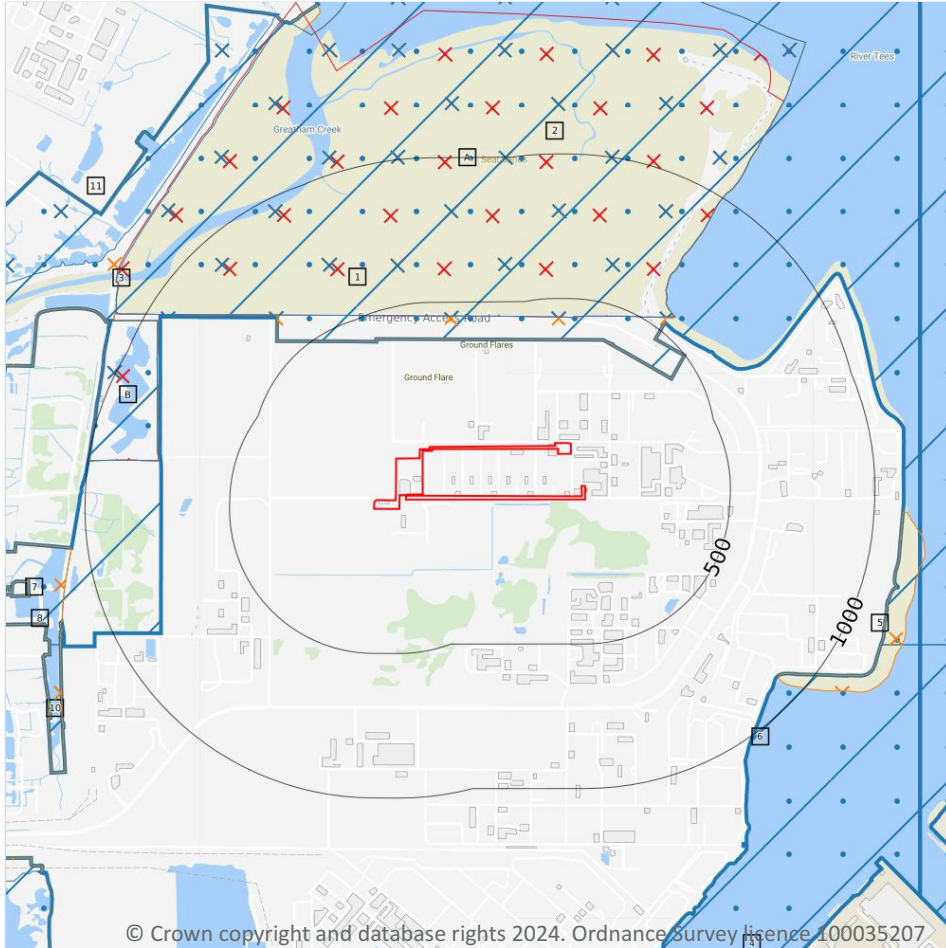
Groundwater flooding is caused by unusually high groundwater levels. It occurs when the water table rises above the ground surface or within underground structures such as basements or cellars. Groundwater flooding tends to exhibit a longer duration than surface water flooding, possibly lasting for weeks or months, and as a result it can cause significant damage to property. This risk assessment is based on a 1 in 100 year return period and a 5m Digital Terrain Model (DTM).

Features are displayed on the Groundwater flooding map on [page 130](#) >

This data is sourced from Ambiantal Risk Analytics.



10 Environmental designations



- Site Outline
- Search buffers in metres (m)
- Sites of Special Scientific Interest (SSSI)
- X Conserved wetland sites (Ramsar sites)
- Special Protection Areas (SPA)
- X National Nature Reserves (NNR)
- X Proposed Ramsar sites

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10.1 Sites of Special Scientific Interest (SSSI)

Records within 2000m

4

Sites providing statutory protection for the best examples of UK flora, fauna, or geological or physiographical features. Originally notified under the National Parks and Access to the Countryside Act 1949, SSSIs were re-notified under the Wildlife and Countryside Act 1981. Improved provisions for the protection and management of SSSIs were introduced by the Countryside and Rights of Way Act 2000 (in England and Wales) and (in Scotland) by the Nature Conservation (Scotland) Act 2004 and the Wildlife and Natural Environment (Scotland) Act 2010.

Features are displayed on the Environmental designations map on [page 131 >](#)

ID	Location	Name	Data source
1	357m NE	Teessmouth and Cleveland Coast	Natural England



ID	Location	Name	Data source
9	1156m E	Teesmouth and Cleveland Coast	Natural England
-	1656m E	Teesmouth and Cleveland Coast	Natural England
E	1685m SW	Teesmouth and Cleveland Coast	Natural England

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.2 Conserved wetland sites (Ramsar sites)

Records within 2000m

7

Ramsar sites are designated under the Convention on Wetlands of International Importance, agreed in Ramsar, Iran, in 1971. They cover all aspects of wetland conservation and wise use, recognizing wetlands as ecosystems that are extremely important for biodiversity conservation in general and for the well-being of human communities. These sites cover a broad definition of wetland; marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, and even some marine areas.

Features are displayed on the Environmental designations map on [page 131](#) >

ID	Location	Site	Details
A	433m NE	Name: Teesmouth and Cleveland Coast Site status: Listed Data source: Natural England	Overview: Medium-large site encompassing a range of habitats (sand and mudflats, rocky shore, saltmarsh, freshwater marsh and sand dunes) on and around an estuary which has been much-modified by human activities. Together these habitats support internationally important numbers of waterbirds. Ramsar criteria: -
B	758m W	Name: Teesmouth and Cleveland Coast Site status: Listed Data source: Natural England	Overview: Medium-large site encompassing a range of habitats (sand and mudflats, rocky shore, saltmarsh, freshwater marsh and sand dunes) on and around an estuary which has been much-modified by human activities. Together these habitats support internationally important numbers of waterbirds. Ramsar criteria: -
11	1214m NW	Name: Teesmouth and Cleveland Coast Site status: Listed Data source: Natural England	Overview: Medium-large site encompassing a range of habitats (sand and mudflats, rocky shore, saltmarsh, freshwater marsh and sand dunes) on and around an estuary which has been much-modified by human activities. Together these habitats support internationally important numbers of waterbirds. Ramsar criteria: -



ID	Location	Site	Details
-	1685m NE	Name: Teesmouth and Cleveland Coast Site status: Listed Data source: Natural England	Overview: Medium-large site encompassing a range of habitats (sand and mudflats, rocky shore, saltmarsh, freshwater marsh and sand dunes) on and around an estuary which has been much-modified by human activities. Together these habitats support internationally important numbers of waterbirds. Ramsar criteria: -
E	1698m SW	Name: Teesmouth and Cleveland Coast Site status: Listed Data source: Natural England	Overview: Medium-large site encompassing a range of habitats (sand and mudflats, rocky shore, saltmarsh, freshwater marsh and sand dunes) on and around an estuary which has been much-modified by human activities. Together these habitats support internationally important numbers of waterbirds. Ramsar criteria: -
-	1781m W	Name: Teesmouth and Cleveland Coast Site status: Listed Data source: Natural England	Overview: Medium-large site encompassing a range of habitats (sand and mudflats, rocky shore, saltmarsh, freshwater marsh and sand dunes) on and around an estuary which has been much-modified by human activities. Together these habitats support internationally important numbers of waterbirds. Ramsar criteria: -
-	1934m NE	Name: Teesmouth and Cleveland Coast Site status: Listed Data source: Natural England	Overview: Medium-large site encompassing a range of habitats (sand and mudflats, rocky shore, saltmarsh, freshwater marsh and sand dunes) on and around an estuary which has been much-modified by human activities. Together these habitats support internationally important numbers of waterbirds. Ramsar criteria: -

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.3 Special Areas of Conservation (SAC)

Records within 2000m	0
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Areas which have been identified as best representing the range and variety within the European Union of habitats and (non-bird) species listed on Annexes I and II to the Directive. SACs are designated under the EC Habitats Directive.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.



10.4 Special Protection Areas (SPA)

Records within 2000m

9

Sites classified by the UK Government under the EC Birds Directive, SPAs are areas of the most important habitat for rare (listed on Annex I to the Directive) and migratory birds within the European Union.

Features are displayed on the Environmental designations map on [page 131](#) >

ID	Location	Name	Species of interest	Habitat description	Data source
2	357m NE	Teesmouth and Cleveland Coast	Pied avocet; Red knot; Ruff; Common redshank; Sandwich tern; Common tern; Little tern	Marine areas, Sea inlets; Tidal rivers, Estuaries, Mud flats, Sand flats, Lagoons (including saltwork basins); Salt marshes, Salt pastures, Salt steppes; Coastal sand dunes, Sand beaches, Machair; Bogs, Marshes, Water fringed vegetation, Fens; Other land (including Towns, Villages, Roads, Waste places, Mines, Industrial sites); Shingle, Sea cliffs, Islets	Natural England
4	904m SE	Teesmouth and Cleveland Coast	Pied avocet; Red knot; Ruff; Common redshank; Sandwich tern; Common tern; Little tern	Marine areas, Sea inlets; Tidal rivers, Estuaries, Mud flats, Sand flats, Lagoons (including saltwork basins); Salt marshes, Salt pastures, Salt steppes; Coastal sand dunes, Sand beaches, Machair; Bogs, Marshes, Water fringed vegetation, Fens; Other land (including Towns, Villages, Roads, Waste places, Mines, Industrial sites); Shingle, Sea cliffs, Islets	Natural England
6	1014m SE	Teesmouth and Cleveland Coast	Pied avocet; Red knot; Ruff; Common redshank; Sandwich tern; Common tern; Little tern	Marine areas, Sea inlets; Tidal rivers, Estuaries, Mud flats, Sand flats, Lagoons (including saltwork basins); Salt marshes, Salt pastures, Salt steppes; Coastal sand dunes, Sand beaches, Machair; Bogs, Marshes, Water fringed vegetation, Fens; Other land (including Towns, Villages, Roads, Waste places, Mines, Industrial sites); Shingle, Sea cliffs, Islets	Natural England
7	1055m W	Teesmouth and Cleveland Coast	Pied avocet; Red knot; Ruff; Common redshank; Sandwich tern; Common tern; Little tern	Marine areas, Sea inlets; Tidal rivers, Estuaries, Mud flats, Sand flats, Lagoons (including saltwork basins); Salt marshes, Salt pastures, Salt steppes; Coastal sand dunes, Sand beaches, Machair; Bogs, Marshes, Water fringed vegetation, Fens; Other land (including Towns, Villages, Roads, Waste places, Mines, Industrial sites); Shingle, Sea cliffs, Islets	Natural England



ID	Location	Name	Species of interest	Habitat description	Data source
10	1182m SW	Teesmouth and Cleveland Coast	Pied avocet; Red knot; Ruff; Common redshank; Sandwich tern; Common tern; Little tern	Marine areas, Sea inlets; Tidal rivers, Estuaries, Mud flats, Sand flats, Lagoons (including saltwork basins); Salt marshes, Salt pastures, Salt steppes; Coastal sand dunes, Sand beaches, Machair; Bogs, Marshes, Water fringed vegetation, Fens; Other land (including Towns, Villages, Roads, Waste places, Mines, Industrial sites); Shingle, Sea cliffs, Islets	Natural England
-	1656m E	Teesmouth and Cleveland Coast	Pied avocet; Red knot; Ruff; Common redshank; Sandwich tern; Common tern; Little tern	Marine areas, Sea inlets; Tidal rivers, Estuaries, Mud flats, Sand flats, Lagoons (including saltwork basins); Salt marshes, Salt pastures, Salt steppes; Coastal sand dunes, Sand beaches, Machair; Bogs, Marshes, Water fringed vegetation, Fens; Other land (including Towns, Villages, Roads, Waste places, Mines, Industrial sites); Shingle, Sea cliffs, Islets	Natural England
E	1685m SW	Teesmouth and Cleveland Coast	Pied avocet; Red knot; Ruff; Common redshank; Sandwich tern; Common tern; Little tern	Marine areas, Sea inlets; Tidal rivers, Estuaries, Mud flats, Sand flats, Lagoons (including saltwork basins); Salt marshes, Salt pastures, Salt steppes; Coastal sand dunes, Sand beaches, Machair; Bogs, Marshes, Water fringed vegetation, Fens; Other land (including Towns, Villages, Roads, Waste places, Mines, Industrial sites); Shingle, Sea cliffs, Islets	Natural England
-	1702m W	Teesmouth and Cleveland Coast	Pied avocet; Red knot; Ruff; Common redshank; Sandwich tern; Common tern; Little tern	Marine areas, Sea inlets; Tidal rivers, Estuaries, Mud flats, Sand flats, Lagoons (including saltwork basins); Salt marshes, Salt pastures, Salt steppes; Coastal sand dunes, Sand beaches, Machair; Bogs, Marshes, Water fringed vegetation, Fens; Other land (including Towns, Villages, Roads, Waste places, Mines, Industrial sites); Shingle, Sea cliffs, Islets	Natural England
-	1786m W	Teesmouth and Cleveland Coast	Pied avocet; Red knot; Ruff; Common redshank; Sandwich tern; Common tern; Little tern	Marine areas, Sea inlets; Tidal rivers, Estuaries, Mud flats, Sand flats, Lagoons (including saltwork basins); Salt marshes, Salt pastures, Salt steppes; Coastal sand dunes, Sand beaches, Machair; Bogs, Marshes, Water fringed vegetation, Fens; Other land (including Towns, Villages, Roads, Waste places, Mines, Industrial sites); Shingle, Sea cliffs, Islets	Natural England

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.



10.5 National Nature Reserves (NNR)

Records within 2000m**3**

Sites containing examples of some of the most important natural and semi-natural terrestrial and coastal ecosystems in Great Britain. They are managed to conserve their habitats, provide special opportunities for scientific study or to provide public recreation compatible with natural heritage interests.

Features are displayed on the Environmental designations map on [page 131](#) >

ID	Location	Name	Data source
A	433m NE	Teesmouth	Natural England
B	758m W	Teesmouth	Natural England
-	1748m NE	Teesmouth	Natural England

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.6 Local Nature Reserves (LNR)

Records within 2000m**0**

Sites managed for nature conservation, and to provide opportunities for research and education, or simply enjoying and having contact with nature. They are declared by local authorities under the National Parks and Access to the Countryside Act 1949 after consultation with the relevant statutory nature conservation agency.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.7 Designated Ancient Woodland

Records within 2000m**0**

Ancient woodlands are classified as areas which have been wooded continuously since at least 1600 AD. This includes semi-natural woodland and plantations on ancient woodland sites. 'Wooded continuously' does not mean there is or has previously been continuous tree cover across the whole site, and not all trees within the woodland have to be old.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.8 Biosphere Reserves

Records within 2000m**0**

Biosphere Reserves are internationally recognised by UNESCO as sites of excellence to balance conservation and socioeconomic development between nature and people. They are recognised under the Man and the Biosphere (MAB) Programme with the aim of promoting sustainable development founded on the work of the local community.



This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.9 Forest Parks

Records within 2000m

0

These are areas managed by the Forestry Commission designated on the basis of recreational, conservation or scenic interest.

This data is sourced from the Forestry Commission.

10.10 Marine Conservation Zones

Records within 2000m

0

A type of marine nature reserve in UK waters established under the Marine and Coastal Access Act (2009). They are designated with the aim to protect nationally important, rare or threatened habitats and species.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.11 Green Belt

Records within 2000m

0

Areas designated to prevent urban sprawl by keeping land permanently open.

This data is sourced from the Ministry of Housing, Communities and Local Government.

10.12 Proposed Ramsar sites

Records within 2000m

10

Ramsar sites are areas listed as a Wetland of International Importance under the Convention on Wetlands of International Importance especially as Waterfowl Habitat (the Ramsar Convention) 1971. The sites here supplied have a status of 'Proposed' having been identified for potential adoption under the framework.

Features are displayed on the Environmental designations map on [page 131 >](#)

ID	Location	Name	Status
3	357m NE	Teesmouth and Cleveland Coast	Proposed
5	905m SE	Teesmouth and Cleveland Coast	Proposed
8	1055m W	Teesmouth and Cleveland Coast	Proposed
-	1581m E	Teesmouth and Cleveland Coast	Proposed
-	1644m N	Teesmouth and Cleveland Coast	Proposed



ID	Location	Name	Status
-	1656m E	Teesmouth and Cleveland Coast	Proposed
-	1663m N	Teesmouth and Cleveland Coast	Proposed
-	1683m N	Teesmouth and Cleveland Coast	Proposed
E	1685m SW	Teesmouth and Cleveland Coast	Proposed
-	1800m NE	Teesmouth and Cleveland Coast	Proposed

This data is sourced from Natural England.

10.13 Possible Special Areas of Conservation (pSAC)

Records within 2000m

0

Special Areas of Conservation are areas which have been identified as best representing the range and variety within the European Union of habitats and (non-bird) species listed on Annexes I and II to the Directive. SACs are designated under the EC Habitats Directive. Those sites supplied here are those with a status of 'Possible' having been identified for potential adoption under the framework.

This data is sourced from Natural England and Natural Resources Wales.

10.14 Potential Special Protection Areas (pSPA)

Records within 2000m

0

Special Protection Areas (SPAs) are areas designated (or 'classified') under the European Union Wild Birds Directive for the protection of nationally and internationally important populations of wild birds. Those sites supplied here are those with a status of 'Potential' having been identified for potential adoption under the framework.

This data is sourced from Natural England.

10.15 Nitrate Sensitive Areas

Records within 2000m

0

Areas where nitrate concentrations in drinking water sources exceeded or was at risk of exceeding the limit of 50 mg/l set by the 1980 EC Drinking Water Directive. Voluntary agricultural measures as a means of reducing the levels of nitrate were introduced by DEFRA as MAFF, with payments being made to farmers who complied. The scheme was started as a pilot in 1990 in ten areas, later implemented within 32 areas. The scheme was closed to further new entrants in 1998, although existing agreements continued for their full term. All Nitrate Sensitive Areas fell within the areas designated as Nitrate Vulnerable Zones (NVZs) in 1996 under the EC Nitrate Directive (91/676/EEC).

This data is sourced from Natural England.



10.16 Nitrate Vulnerable Zones

Records within 2000m

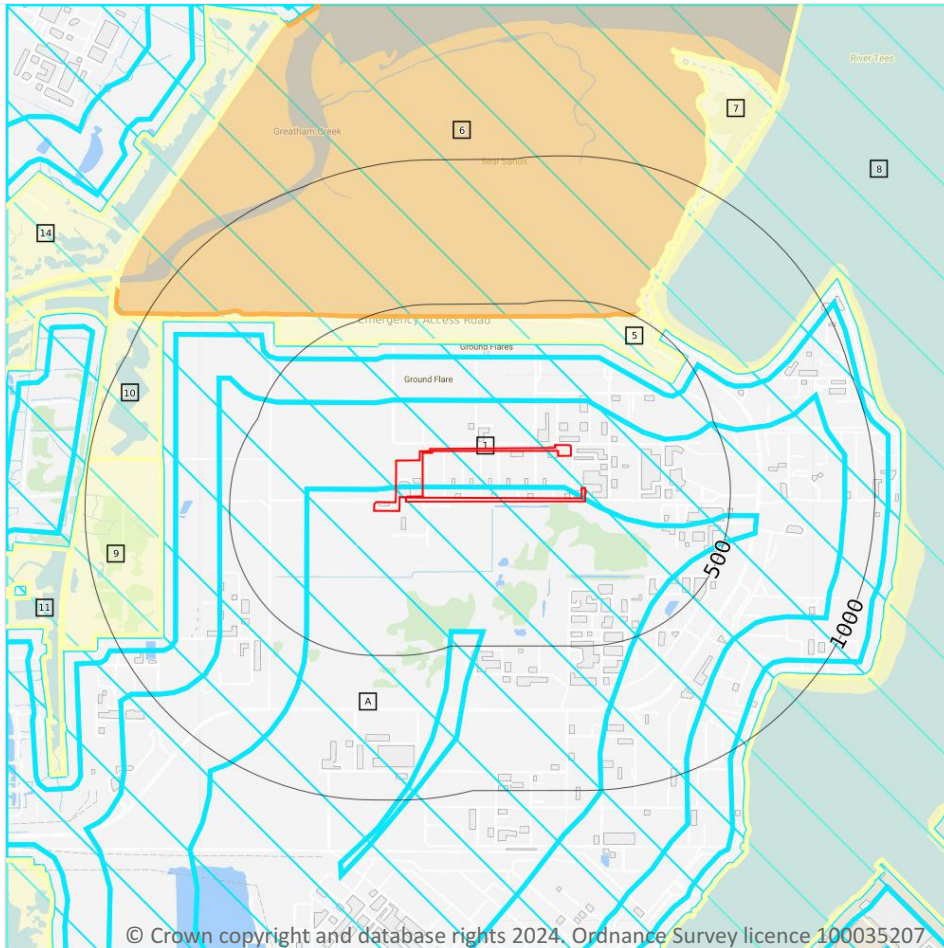
0

Areas at risk from agricultural nitrate pollution designated under the EC Nitrate Directive (91/676/EEC). These are areas of land that drain into waters polluted by nitrates. Farmers operating within these areas have to follow mandatory rules to tackle nitrate loss from agriculture.

This data is sourced from Natural England and Natural Resources Wales.



SSSI Impact Zones and Units



- Site Outline
- Search buffers in metres (m)
- SSSI Impact Risk Zones
- SSSI Units
- Not recorded
- Favourable
- Unfavourable - Recovering
- Unfavourable - No change
- Unfavourable - Declining
- Partially destroyed
- Destroyed

10.17 SSSI Impact Risk Zones

Records on site

2

Developed to allow rapid initial assessment of the potential risks to SSSIs posed by development proposals. They define zones around each SSSI which reflect the particular sensitivities of the features for which it is notified and indicate the types of development proposal which could potentially have adverse impacts.

Features are displayed on the SSSI Impact Zones and Units map on [page 140](#) >

ID	Location	Type of developments requiring consultation
1	On site	All applications - All planning applications (except householder) outside or extending outside existing settlements/urban areas affecting greenspace, farmland, semi natural habitats or landscape features such as trees, hedges, streams, rural buildings/structures. Infrastructure - Pipelines and underground cables, pylons and overhead cables. Any transport proposal including road, rail and by water (excluding routine maintenance). Airports, helipads and other aviation proposals. Wind and Solar - Solar schemes with footprint > 0.5ha, all wind turbines. Minerals, Oil and Gas - Planning applications for quarries, including: new proposals, Review of Minerals Permissions (ROMP), extensions, variations to conditions etc. Oil & gas exploration/extraction. Rural non-residential - Large non residential developments outside existing settlements/urban areas where net additional gross internal floorspace is > 1,000m² or footprint exceeds 0.2ha. Residential - Residential development of 50 units or more. Rural residential - Any residential developments outside of existing settlements/urban areas with a total net gain in residential units. Air pollution - Any development that could cause AIR POLLUTION (incl: industrial/commercial processes, livestock & poultry units, slurry lagoons & digestate stores, manure stores). Combustion - All general combustion processes. Incl: energy from waste incineration, other incineration, landfill gas generation plant, pyrolysis/gasification, anaerobic digestion, sewage treatment works, other incineration/ combustion. Waste - Mechanical and biological waste treatment, inert landfill, non-hazardous landfill, hazardous landfill, household civic amenity recycling facilities construction, demolition and excavation waste, other waste management. Composting - Any composting proposal. Incl: open windrow composting, in-vessel composting, anaerobic digestion, other waste management. Discharges - Any discharge of water or liquid waste that is discharged to ground (ie to seep away) or to surface water, such as a beck or stream. Water supply - Large infrastructure such as warehousing / industry where net additional gross internal floorspace is > 1,000m² or any development needing its own water supply . Notes: Strategic solutions for recreational impacts are in place. Please contact your Local Planning Authority as they have the information to advise on specific requirements. NUTRIENT IMPACT AREA. For new development with overnight accommodation Reg 63 of the Conservation of Habitats and Species Regulations 2017 must be applied and additional measures required. LPA to refer to Natural England's Nutrient Neutrality advice.



ID	Location	Type of developments requiring consultation
A	On site	Infrastructure - Pipelines and underground cables, pylons and overhead cables. Any transport proposal including road, rail and by water (excluding routine maintenance). Airports, helipads and other aviation proposals. Wind and Solar - Solar schemes with footprint > 0.5ha, all wind turbines. Minerals, Oil and Gas - Planning applications for quarries, including: new proposals, Review of Minerals Permissions (ROMP), extensions, variations to conditions etc. Oil & gas exploration/extraction. Rural non-residential - Large non residential developments outside existing settlements/urban areas where net additional gross internal floorspace is > 1,000m² or footprint exceeds 0.2ha. Residential - Residential development of 50 units or more. Rural residential - Any residential development of 10 or more houses outside existing settlements/urban areas. Air pollution - Any industrial/agricultural development that could cause AIR POLLUTION (incl: industrial processes, livestock & poultry units with floorspace > 500m², slurry lagoons & digestate stores > 200m², manure stores > 250t). Combustion - General combustion processes >20MW energy input. Incl: energy from waste incineration, other incineration, landfill gas generation plant, pyrolysis/gasification, anaerobic digestion, sewage treatment works, other incineration/ combustion. Waste - Landfill. Incl: inert landfill, non-hazardous landfill, hazardous landfill. Composting - Any composting proposal with more than 500 tonnes maximum annual operational throughput. Incl: open windrow composting, in-vessel composting, anaerobic digestion, other waste management. Discharges - Any discharge of water or liquid waste of more than 2m³/day to ground (ie to seep away) or to surface water, such as a beck or stream. Water supply - Large infrastructure such as warehousing / industry where net additional gross internal floorspace is > 1,000m² or any development needing its own water supply . Notes: Strategic solutions for recreational impacts are in place. Please contact your Local Planning Authority as they have the information to advise on specific requirements. NUTRIENT IMPACT AREA. For new development with overnight accommodation Reg 63 of the Conservation of Habitats and Species Regulations 2017 must be applied and additional measures required. LPA to refer to Natural England's Nutrient Neutrality advice.

This data is sourced from Natural England.

10.18 SSSI Units

Records within 2000m	18
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Divisions of SSSIs used to record management and condition details. Units are the smallest areas for which Natural England gives a condition assessment, however, the size of units varies greatly depending on the types of management and the conservation interest.

Features are displayed on the SSSI Impact Zones and Units map on [page 140](#) >

ID:	5
Location:	357m NE
SSSI name:	Teesmouth and Cleveland Coast
Unit name:	Emergency Access Road
Broad habitat:	Supralittoral Sediment
Condition:	Unfavourable - Recovering



Reportable features:

Feature name	Feature condition	Date of assessment
>20,000 Non-breeding waterbirds	Favourable	01/01/1900
Waterbird assemblage	-	-

ID: 6
 Location: 445m NE
 SSSI name: Teesmouth and Cleveland Coast
 Unit name: Seal Sands
 Broad habitat: Littoral Sediment
 Condition: Unfavourable - Declining
 Reportable features:

Feature name	Feature condition	Date of assessment
>20,000 Non-breeding waterbirds	Favourable	15/03/2018
Aggregations of breeding birds - Avocet, Recurvirostra avosetta	Favourable	15/03/2018
Aggregations of breeding birds - Common tern, Sterna hirundo	Favourable	15/03/2018
Aggregations of breeding birds - Little tern, Sterna albifrons	Favourable	15/03/2018
Aggregations of non-breeding birds - Knot, Calidris canutus	Unfavourable - Declining	15/03/2018
Aggregations of non-breeding birds - Redshank, Tringa totanus	Favourable	15/03/2018
Aggregations of non-breeding birds - Ringed plover, Charadrius hiaticula	Favourable	15/03/2018
Aggregations of non-breeding birds - Sandwich tern, Sterna sandvicensis	Unfavourable - Declining	15/03/2018
Aggregations of non-breeding birds - Shelduck, Tadorna tadorna	Unfavourable - Declining	15/03/2018
Common seal, Phoca vitulina	Favourable	15/03/2018
Knot, Calidris canutus - A143, nb	Unfavourable - Declining	15/03/2018
Little tern, Sterna albifrons - A195, b	Favourable	15/03/2018
Redshank, Tringa totanus - A162, nb	Favourable	15/03/2018
Sandwich tern, Thalasseus sandvicensis - A191, nb	Unfavourable - Declining	15/03/2018
Waterbird assemblage	Favourable	15/03/2018



ID: 7
Location: 515m NE
SSSI name: Teesmouth and Cleveland Coast
Unit name: Seal Sands Peninsula
Broad habitat: Littoral Sediment
Condition: Unfavourable - Recovering
Reportable features:

Feature name	Feature condition	Date of assessment
>20,000 Non-breeding waterbirds	Favourable	01/01/1900
Fixed dune grassland	-	-
SM4-28 - Saltmarsh	-	-
Sand dune; strandline, embryo and mobile dunes (SD1-6)	-	-
Waterbird assemblage	-	-

ID: 8
Location: 529m NE
SSSI name: Teesmouth and Cleveland Coast
Unit name: River Tees
Broad habitat: Rivers And Streams
Condition: Unfavourable - Recovering
Reportable features:

Feature name	Feature condition	Date of assessment
>20,000 Non-breeding waterbirds	Favourable	01/01/1900
Aggregations of breeding birds - Common tern, <i>Sterna hirundo</i>	-	-
Aggregations of breeding birds - Little tern, <i>Sterna albifrons</i>	-	-
Aggregations of non-breeding birds - Redshank, <i>Tringa totanus</i>	-	-
Aggregations of non-breeding birds - Sandwich tern, <i>Sterna sandvicensis</i>	-	-
Common seal, <i>Phoca vitulina</i>	-	-
Little tern, <i>Sterna albifrons</i> - A195, b	-	-
Redshank, <i>Tringa totanus</i> - A162, nb	-	-
Sandwich tern, <i>Thalasseus sandvicensis</i> - A191, nb	-	-
Waterbird assemblage	-	-



ID: 9
Location: 737m W
SSSI name: Teesmouth and Cleveland Coast
Unit name: Long Drag Reedbed
Broad habitat: Littoral Sediment
Condition: Unfavourable - Recovering
Reportable features:

Feature name	Feature condition	Date of assessment
Assemblages of breeding birds - Mixed: Sand-dunes and Saltmarsh, Lowland open waters and their margins	-	-

ID: 10
Location: 755m W
SSSI name: Teesmouth and Cleveland Coast
Unit name: Seal Sands Intertidal Project
Broad habitat: Littoral Sediment
Condition: Unfavourable - Recovering
Reportable features:

Feature name	Feature condition	Date of assessment
>20,000 Non-breeding waterbirds	Favourable	01/01/1900
Aggregations of breeding birds - Common tern, <i>Sterna hirundo</i>	-	-
Assemblages of breeding birds - Mixed: Sand-dunes and Saltmarsh, Lowland open waters and their margins	-	-
Waterbird assemblage	-	-

ID: 11
Location: 1055m W
SSSI name: Teesmouth and Cleveland Coast
Unit name: Number 4 Brinefield
Broad habitat: Littoral Sediment
Condition: Unfavourable - Recovering
Reportable features:

Feature name	Feature condition	Date of assessment
>20,000 Non-breeding waterbirds	Favourable	01/01/1900
Aggregations of breeding birds - Avocet, <i>Recurvirostra avosetta</i>	-	-
Aggregations of breeding birds - Common tern, <i>Sterna hirundo</i>	-	-



Feature name	Feature condition	Date of assessment
Aggregations of non-breeding birds - Ruff, <i>Philomachus pugnax</i>	-	-
Aggregations of non-breeding birds - Shelduck, <i>Tadorna tadorna</i>	-	-
Assemblages of breeding birds - Mixed: Sand-dunes and Saltmarsh, Lowland open waters and their margins	-	-

ID: 12
 Location: 1096m NW
 SSSI name: Teesmouth and Cleveland Coast
 Unit name: Number 4 Brinefield
 Broad habitat: Littoral Sediment
 Condition: Unfavourable - Recovering
 Reportable features:

Feature name	Feature condition	Date of assessment
>20,000 Non-breeding waterbirds	Favourable	01/01/1900
Aggregations of breeding birds - Avocet, <i>Recurvirostra avosetta</i>	-	-
Aggregations of breeding birds - Common tern, <i>Sterna hirundo</i>	-	-
Aggregations of non-breeding birds - Ruff, <i>Philomachus pugnax</i>	-	-
Aggregations of non-breeding birds - Shelduck, <i>Tadorna tadorna</i>	-	-
Assemblages of breeding birds - Mixed: Sand-dunes and Saltmarsh, Lowland open waters and their margins	-	-

ID: 13
 Location: 1140m NW
 SSSI name: Teesmouth and Cleveland Coast
 Unit name: Greatham Creek
 Broad habitat: Littoral Sediment
 Condition: Unfavourable - Recovering
 Reportable features:

Feature name	Feature condition	Date of assessment
>20,000 Non-breeding waterbirds	Favourable	01/01/1900
Aggregations of breeding birds - Avocet, <i>Recurvirostra avosetta</i>	-	-
Aggregations of breeding birds - Common tern, <i>Sterna hirundo</i>	-	-
Aggregations of non-breeding birds - Redshank, <i>Tringa totanus</i>	-	-



Feature name	Feature condition	Date of assessment
Aggregations of non-breeding birds - Shelduck, Tadorna tadorna	-	-
Assemblages of breeding birds - Mixed: Sand-dunes and Saltmarsh, Lowland open waters and their margins	-	-
Common seal, Phoca vitulina	-	-
Redshank, Tringa totanus - A162, nb	-	-
SM4-28 - Saltmarsh	-	-
Waterbird assemblage	-	-

ID: 14
 Location: 1152m NW
 SSSI name: Teesmouth and Cleveland Coast
 Unit name: Greenabella Marsh
 Broad habitat: Littoral Sediment
 Condition: Unfavourable - Recovering
 Reportable features:

Feature name	Feature condition	Date of assessment
>20,000 Non-breeding waterbirds	Favourable	01/01/1900
Aggregations of breeding birds - Avocet, Recurvirostra avosetta	-	-
Aggregations of breeding birds - Common tern, Sterna hirundo	-	-
Aggregations of non-breeding birds - Redshank, Tringa totanus	-	-
Assemblages of breeding birds - Mixed: Sand-dunes and Saltmarsh, Lowland open waters and their margins	-	-
Redshank, Tringa totanus - A162, nb	-	-
Waterbird assemblage	-	-

ID: -
 Location: 1561m E
 SSSI name: Teesmouth and Cleveland Coast
 Unit name: Bran Sands Lagoon And Dabholme Gut
 Broad habitat: Littoral Sediment
 Condition: Unfavourable - Recovering
 Reportable features:



Feature name	Feature condition	Date of assessment
>20,000 Non-breeding waterbirds	Favourable	01/01/1900
Aggregations of breeding birds - Common tern, <i>Sterna hirundo</i>	-	-
Aggregations of non-breeding birds - Gadwall, <i>Mareca strepera</i>	-	-
Aggregations of non-breeding birds - Redshank, <i>Tringa totanus</i>	-	-
Aggregations of non-breeding birds - Shelduck, <i>Tadorna tadorna</i>	-	-

ID: -
 Location: 1656m E
 SSSI name: Teesmouth and Cleveland Coast
 Unit name: Bran Sands Lagoon And Dabholme Gut
 Broad habitat: Littoral Sediment
 Condition: Unfavourable - Recovering
 Reportable features:

Feature name	Feature condition	Date of assessment
>20,000 Non-breeding waterbirds	Favourable	01/01/1900
Aggregations of breeding birds - Common tern, <i>Sterna hirundo</i>	-	-
Aggregations of non-breeding birds - Gadwall, <i>Mareca strepera</i>	-	-
Aggregations of non-breeding birds - Redshank, <i>Tringa totanus</i>	-	-
Aggregations of non-breeding birds - Shelduck, <i>Tadorna tadorna</i>	-	-

ID: -
 Location: 1663m N
 SSSI name: Teesmouth and Cleveland Coast
 Unit name: North Gare To Seaton Snook
 Broad habitat: Supralittoral Sediment
 Condition: Unfavourable - Declining
 Reportable features:

Feature name	Feature condition	Date of assessment
>20,000 Non-breeding waterbirds	Favourable	01/01/1900
Aggregations of breeding birds - Common tern, <i>Sterna hirundo</i>	-	-
Aggregations of breeding birds - Little tern, <i>Sterna albifrons</i>	-	-
Aggregations of non-breeding birds - Ringed plover, <i>Charadrius hiaticula</i>	-	-



Feature name	Feature condition	Date of assessment
Aggregations of non-breeding birds - Sanderling, <i>Calidris alba</i>	-	-
Aggregations of non-breeding birds - Sandwich tern, <i>Sterna sandvicensis</i>	-	-
Assemblages of breeding birds - Mixed: Sand-dunes and Saltmarsh, Lowland open waters and their margins	-	-
Fixed dune grassland	-	-
Invert. assemblage F111 bare sand & chalk	-	-
Little tern, <i>Sterna albifrons</i> - A195, b	-	-
SM4-28 - Saltmarsh	-	-
Sand dune; strandline, embryo and mobile dunes (SD1-6)	-	-
Sandwich tern, <i>Thalasseus sandvicensis</i> - A191, nb	-	-
Waterbird assemblage	-	-

ID: 20
 Location: 1685m SW
 SSSI name: Teesmouth and Cleveland Coast
 Unit name: Rspb Saltholme
 Broad habitat: Littoral Sediment
 Condition: Unfavourable - Recovering
 Reportable features:

Feature name	Feature condition	Date of assessment
>20,000 Non-breeding waterbirds	Favourable	01/01/1900
Aggregations of breeding birds - Avocet, <i>Recurvirostra avosetta</i>	-	-
Aggregations of breeding birds - Common tern, <i>Sterna hirundo</i>	-	-
Aggregations of non-breeding birds - Gadwall, <i>Mareca strepera</i>	-	-
Aggregations of non-breeding birds - Redshank, <i>Tringa totanus</i>	-	-
Aggregations of non-breeding birds - Ruff, <i>Philomachus pugnax</i>	-	-
Aggregations of non-breeding birds - Shelduck, <i>Tadorna tadorna</i>	-	-
Aggregations of non-breeding birds - Shoveler, <i>Anas clypeata</i>	-	-
Redshank, <i>Tringa totanus</i> - A162, nb	-	-
Waterbird assemblage	-	-



ID: -
Location: 1783m NE
SSSI name: Teesmouth and Cleveland Coast
Unit name: Bran Sands
Broad habitat: Littoral Sediment
Condition: Unfavourable - Declining
Reportable features:

Feature name	Feature condition	Date of assessment
>20,000 Non-breeding waterbirds	Favourable	15/03/2018
Aggregations of breeding birds - Common tern, <i>Sterna hirundo</i>	Favourable	15/03/2018
Aggregations of non-breeding birds - Knot, <i>Calidris canutus</i>	Unfavourable - Declining	15/03/2018
Aggregations of non-breeding birds - Redshank, <i>Tringa totanus</i>	Favourable	15/03/2018
Aggregations of non-breeding birds - Ringed plover, <i>Charadrius hiaticula</i>	Unfavourable - Declining	15/03/2018
Aggregations of non-breeding birds - Sanderling, <i>Calidris alba</i>	Unfavourable - Declining	15/03/2018
Aggregations of non-breeding birds - Sandwich tern, <i>Sterna sandvicensis</i>	Unfavourable - Declining	15/03/2018
Fixed dune grassland	Favourable	15/03/2018
Knot, <i>Calidris canutus</i> - A143, nb	Unfavourable - Declining	15/03/2018
Redshank, <i>Tringa totanus</i> - A162, nb	Favourable	15/03/2018
Sand dune; strandline, embryo and mobile dunes (SD1-6)	Favourable	15/03/2018
Sandwich tern, <i>Thalasseus sandvicensis</i> - A191, nb	Unfavourable - Declining	15/03/2018
Waterbird assemblage	Favourable	15/03/2018

ID: -
Location: 1787m W
SSSI name: Teesmouth and Cleveland Coast
Unit name: Cowpen Marsh Managed Realignment
Broad habitat: Supralittoral Sediment
Condition: Unfavourable - Recovering
Reportable features:

Feature name	Feature condition	Date of assessment
>20,000 Non-breeding waterbirds	Favourable	01/01/1900
Aggregations of breeding birds - Common tern, <i>Sterna hirundo</i>	-	-



Feature name	Feature condition	Date of assessment
Assemblages of breeding birds - Mixed: Sand-dunes and Saltmarsh, Lowland open waters and their margins	-	-
Waterbird assemblage	-	-

ID: -
Location: 1796m W
SSSI name: Teesmouth and Cleveland Coast
Unit name: Saltern Wetlands
Broad habitat: Littoral Sediment
Condition: Unfavourable - Recovering
Reportable features:

Feature name	Feature condition	Date of assessment
Aggregations of breeding birds - Common tern, <i>Sterna hirundo</i>	-	-
Aggregations of breeding birds - Little tern, <i>Sterna albifrons</i>	-	-
Aggregations of non-breeding birds - Redshank, <i>Tringa totanus</i>	-	-
Aggregations of non-breeding birds - Shelduck, <i>Tadorna tadorna</i>	-	-
Assemblages of breeding birds - Mixed: Sand-dunes and Saltmarsh, Lowland open waters and their margins	-	-
Common seal, <i>Phoca vitulina</i>	-	-
SM4-28 - Saltmarsh	-	-

ID: -
Location: 1852m W
SSSI name: Teesmouth and Cleveland Coast
Unit name: Cowpen Marsh
Broad habitat: Littoral Sediment
Condition: Unfavourable - Recovering
Reportable features:

Feature name	Feature condition	Date of assessment
>20,000 Non-breeding waterbirds	Favourable	01/01/1900
Aggregations of breeding birds - Common tern, <i>Sterna hirundo</i>	-	-
Aggregations of non-breeding birds - Gadwall, <i>Mareca strepera</i>	-	-
Aggregations of non-breeding birds - Shelduck, <i>Tadorna tadorna</i>	-	-



Feature name	Feature condition	Date of assessment
Aggregations of non-breeding birds - Shoveler, <i>Anas clypeata</i>	-	-
Assemblages of breeding birds - Mixed: Sand-dunes and Saltmarsh, Lowland open waters and their margins	-	-
Waterbird assemblage	-	-

This data is sourced from Natural England and Natural Resources Wales.



11 Visual and cultural designations

11.1 World Heritage Sites

Records within 250m

0

Sites designated for their globally important cultural or natural interest requiring appropriate management and protection measures. World Heritage Sites are designated to meet the UK's commitments under the World Heritage Convention.

This data is sourced from Historic England, Cadw and Historic Environment Scotland.

11.2 Area of Outstanding Natural Beauty

Records within 250m

0

Areas of Outstanding Natural Beauty (AONB) are conservation areas, chosen because they represent 18% of the finest countryside. Each AONB has been designated for special attention because of the quality of their flora, fauna, historical and cultural associations, and/or scenic views. The National Parks and Access to the Countryside Act of 1949 created AONBs and the Countryside and Rights of Way Act, 2000 added further regulation and protection. There are likely to be restrictions to some developments within these areas.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

11.3 National Parks

Records within 250m

0

In England and Wales, the purpose of National Parks is to conserve and enhance landscapes within the countryside whilst promoting public enjoyment of them and having regard for the social and economic well-being of those living within them. In Scotland National Parks have the additional purpose of promoting the sustainable use of the natural resources of the area and the sustainable social and economic development of its communities. The National Parks and Access to the Countryside Act 1949 established the National Park designation in England and Wales, and The National Parks (Scotland) Act 2000 in Scotland.

This data is sourced from Natural England, Natural Resources Wales and the Scottish Government.

11.4 Listed Buildings

Records within 250m

0

Buildings listed for their special architectural or historical interest. Building control in the form of 'listed building consent' is required in order to make any changes to that building which might affect its special interest. Listed buildings are graded to indicate their relative importance, however building controls apply to all buildings equally, irrespective of their grade, and apply to the interior and exterior of the building in its entirety, together with any curtilage structures.



This data is sourced from Historic England, Cadw and Historic Environment Scotland.

11.5 Conservation Areas

Records within 250m

0

Local planning authorities are obliged to designate as conservation areas any parts of their own area that are of special architectural or historic interest, the character and appearance of which it is desirable to preserve or enhance. Designation of a conservation area gives broader protection than the listing of individual buildings. All the features within the area, listed or otherwise, are recognised as part of its character. Conservation area designation is the means of recognising the importance of all factors and of ensuring that planning decisions address the quality of the landscape in its broadest sense.

This data is sourced from Historic England, Cadw and Historic Environment Scotland.

11.6 Scheduled Ancient Monuments

Records within 250m

0

A scheduled monument is an historic building or site that is included in the Schedule of Monuments kept by the Secretary of State for Digital, Culture, Media and Sport. The regime is set out in the Ancient Monuments and Archaeological Areas Act 1979. The Schedule of Monuments has c.20,000 entries and includes sites such as Roman remains, burial mounds, castles, bridges, earthworks, the remains of deserted villages and industrial sites. Monuments are not graded, but all are, by definition, considered to be of national importance.

This data is sourced from Historic England, Cadw and Historic Environment Scotland.

11.7 Registered Parks and Gardens

Records within 250m

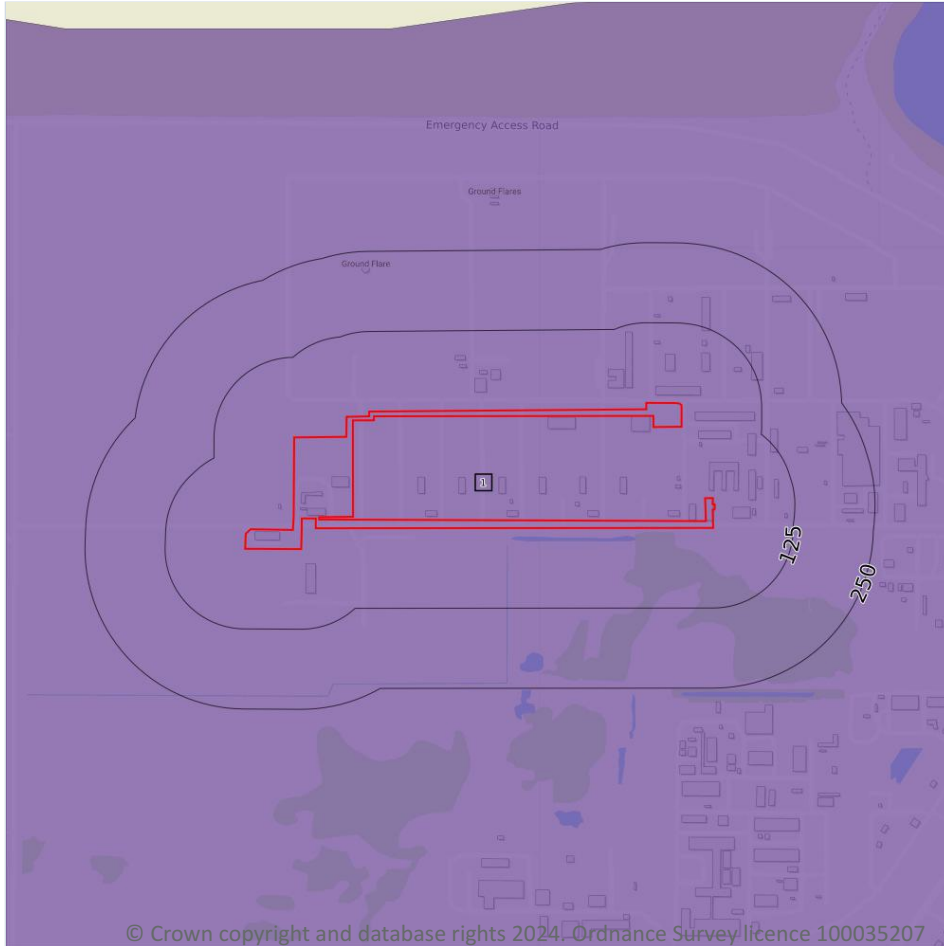
0

Parks and gardens assessed to be of particular interest and of special historic interest. The emphasis being on 'designed' landscapes, rather than on planting or botanical importance. Registration is a 'material consideration' in the planning process, meaning that planning authorities must consider the impact of any proposed development on the special character of the landscape.

This data is sourced from Historic England, Cadw and Historic Environment Scotland.



12 Agricultural designations



- Site Outline
- Search buffers in metres (m)
- Grade 1 - excellent quality
- Grade 2 - very good quality
- Grade 3 - good to moderate quality
- Grade 3a - good quality
- Grade 3b - moderate quality
- Grade 4 - poor quality
- Grade 5 - very poor quality
- Non-agricultural land
- Urban land
- Exclusion land
- Tree felling licences
- Open Access land

12.1 Agricultural Land Classification

Records within 250m

1

Classification of the quality of agricultural land taking into consideration multiple factors including climate, physical geography and soil properties. It should be noted that the categories for the grading of agricultural land are not consistent across England, Wales and Scotland.

Features are displayed on the Agricultural designations map on [page 155 >](#)

ID	Location	Classification	Description
1	On site	Urban	Non-agricultural/no quality assigned

This data is sourced from Natural England.



12.2 Open Access Land

Records within 250m

0

The Countryside and Rights of Way Act 2000 (CROW Act) gives a public right of access to land without having to use paths. Access land includes mountains, moors, heaths and downs that are privately owned. It also includes common land registered with the local council and some land around the England Coast Path. Generally permitted activities on access land are walking, running, watching wildlife and climbing.

This data is sourced from Natural England and Natural Resources Wales.

12.3 Tree Felling Licences

Records within 250m

0

Felling Licence Application (FLA) areas approved by Forestry Commission England. Anyone wishing to fell trees must ensure that a licence or permission under a grant scheme has been issued by the Forestry Commission before any felling is carried out or that one of the exceptions apply.

This data is sourced from the Forestry Commission.

12.4 Environmental Stewardship Schemes

Records within 250m

0

Environmental Stewardship covers a range of schemes that provide financial incentives to farmers, foresters and land managers to look after and improve the environment. The schemes identified may be historical schemes that have now expired, or may still be active.

This data is sourced from Natural England.

12.5 Countryside Stewardship Schemes

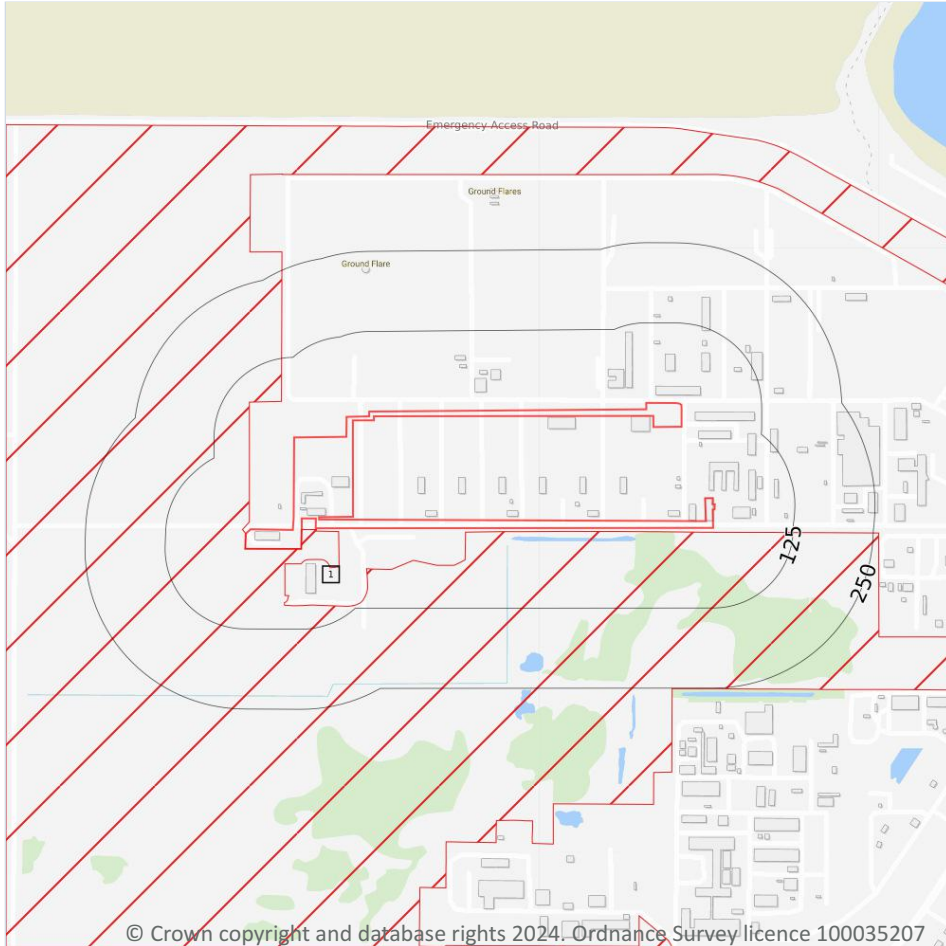
Records within 250m

0

Countryside Stewardship covers a range of schemes that provide financial incentives to farmers, foresters and land managers to look after and improve the environment. Main objectives are to improve the farmed environment for wildlife and to reduce diffuse water pollution.

This data is sourced from Natural England.

13 Habitat designations



- Site Outline
- Search buffers in metres (m)
- Priority Habitat Inventory
- Open Mosaic Habitat
- Limestone Pavement Orders
- Habitat Networks
- Primary Habitat
- Restorable Habitat
- Associated Habitats
- Habitat Restoration-Creation
- Network Enhancement Zone 1
- Network Enhancement Zone 2

13.1 Priority Habitat Inventory

Records within 250m

0

Habitats of principal importance as named under Natural Environment and Rural Communities Act (2006) Section 41.

This data is sourced from Natural England.

13.2 Habitat Networks

Records within 250m

0

Habitat networks for 18 priority habitat networks (based primarily, but not exclusively, on the priority habitat inventory) and areas suitable for the expansion of networks through restoration and habitat creation.

This data is sourced from Natural England.



13.3 Open Mosaic Habitat

Records within 250m**1**

Sites verified as Open Mosaic Habitat. Mosaic habitats are brownfield sites that are identified under the UK Biodiversity Action Plan as a priority habitat due to the habitat variation within a single site, supporting an array of invertebrates.

Features are displayed on the Habitat designations map on [page 157](#) >

ID	Location	Site reference	Identification confidence	Primary source	Secondary source	Tertiary source
1	On site	HLD_refs: EAHLD0548 9	Low	Environment Agency Historic Landfill Sites	UK Perspectives Aerial Photography	-

This data is sourced from Natural England.

13.4 Limestone Pavement Orders

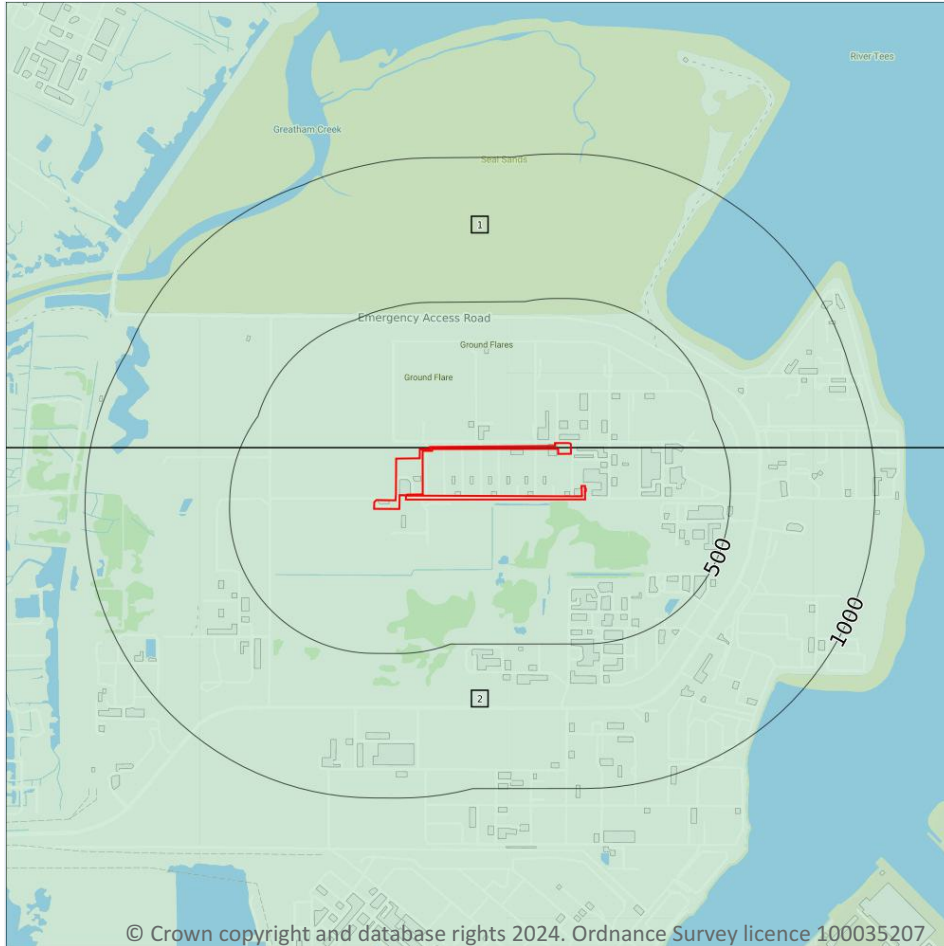
Records within 250m**0**

Limestone pavements are outcrops of limestone where the surface has been worn away by natural means over millennia. These rocks have the appearance of paving blocks, hence their name. Not only do they have geological interest, they also provide valuable habitats for wildlife. These habitats are threatened due to their removal for use in gardens and water features. Many limestone pavements have been designated as SSSIs which affords them some protection. In addition, Section 34 of the Wildlife and Countryside Act 1981 gave them additional protection via the creation of Limestone Pavement Orders, which made it a criminal offence to remove any part of the outcrop. The associated Limestone Pavement Priority Habitat is part of the UK Biodiversity Action Plan priority habitat in England.

This data is sourced from Natural England.



14 Geology 1:10,000 scale - Availability



— Site Outline
Search buffers in metres (m)

- Full coverage
- Partial coverage
- No coverage

14.1 10k Availability

Records within 500m

2

An indication on the coverage of 1:10,000 scale geology data for the site, the most detailed dataset provided by the British Geological Survey. Either 'Full', 'Partial' or 'No coverage' for each geological theme.

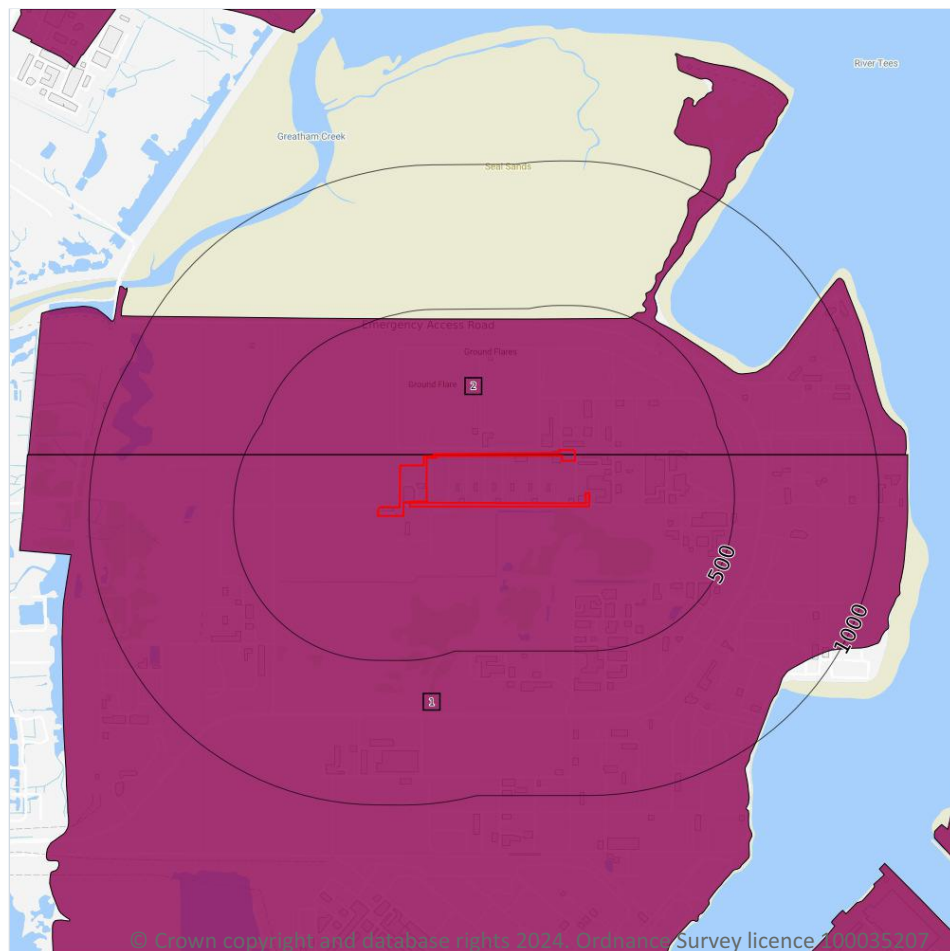
Features are displayed on the Geology 1:10,000 scale - Availability map on [page 159](#) >

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	On site	Full	Full	Full	No coverage	NZ52NW
2	On site	Full	Full	Full	No coverage	NZ52SW

This data is sourced from the British Geological Survey.



Geology 1:10,000 scale - Artificial and made ground



— Site Outline
Search buffers in metres (m)

- Reclaimed ground
- Made ground
- Worked ground
- Infilled ground
- Disturbed ground
- Landscaped ground

14.2 Artificial and made ground (10k)

Records within 500m

2

Details of made, worked, infilled, disturbed and landscaped ground at 1:10,000 scale. Artificial ground can be associated with potentially contaminated material, unpredictable engineering conditions and instability.

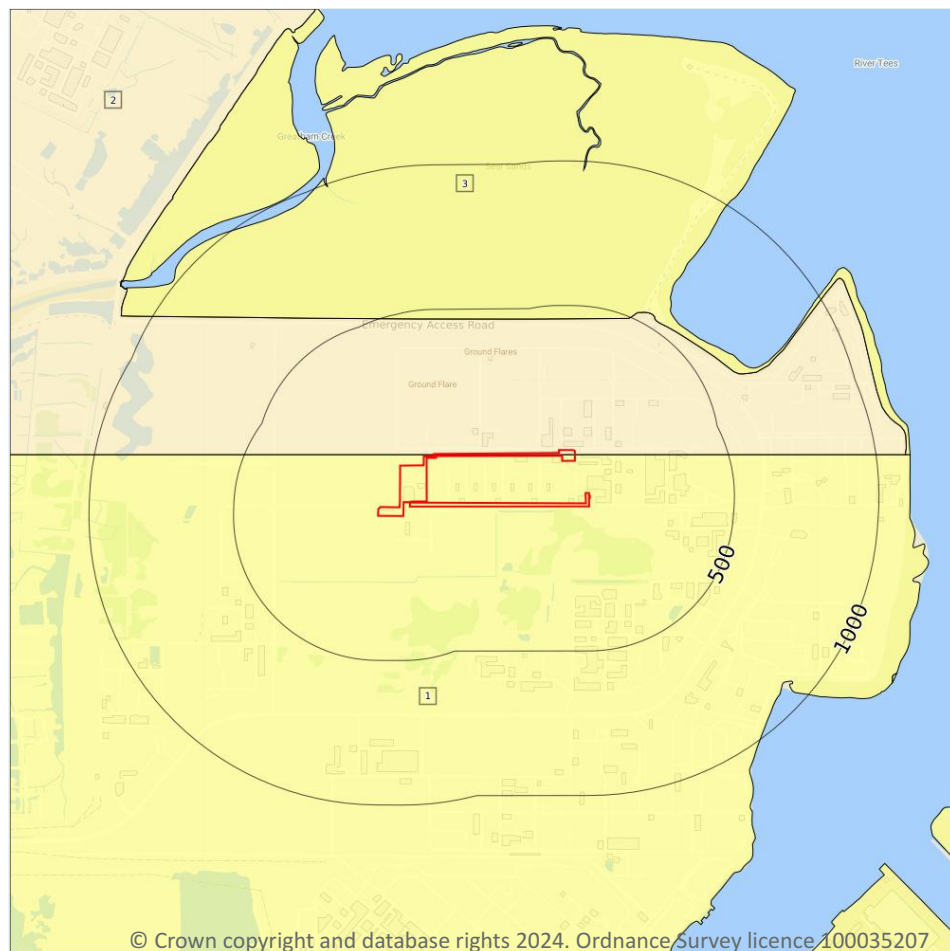
Features are displayed on the Geology 1:10,000 scale - Artificial and made ground map on [page 160 >](#)

ID	Location	LEX Code	Description	Rock description
1	On site	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
2	On site	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit

This data is sourced from the British Geological Survey.



Geology 1:10,000 scale - Superficial



Site Outline

Search buffers in metres (m)

Landslip (10k)

Superficial geology (10k)
Please see table for more details.

14.3 Superficial geology (10k)

Records within 500m

3

Superficial geological deposits at 1:10,000 scale. Also known as 'drift', these are the youngest geological deposits, formed during the Quaternary. They rest on older deposits or rocks referred to as bedrock.

Features are displayed on the Geology 1:10,000 scale - Superficial map on [page 161](#) >

ID	Location	LEX Code	Description	Rock description
1	On site	TFD-XSZC	Tidal Flat Deposits - Sand, Silt And Clay	Sand, Silt And Clay
2	On site	MEA-XSZC	Marine Or Estuarine Alluvium - Sand, Silt And Clay	Sand, Silt And Clay
3	454m NE	TFD-XSZC	Tidal Flat Deposits - Sand, Silt And Clay	Sand, Silt And Clay

This data is sourced from the British Geological Survey.



14.4 Landslip (10k)

Records within 500m

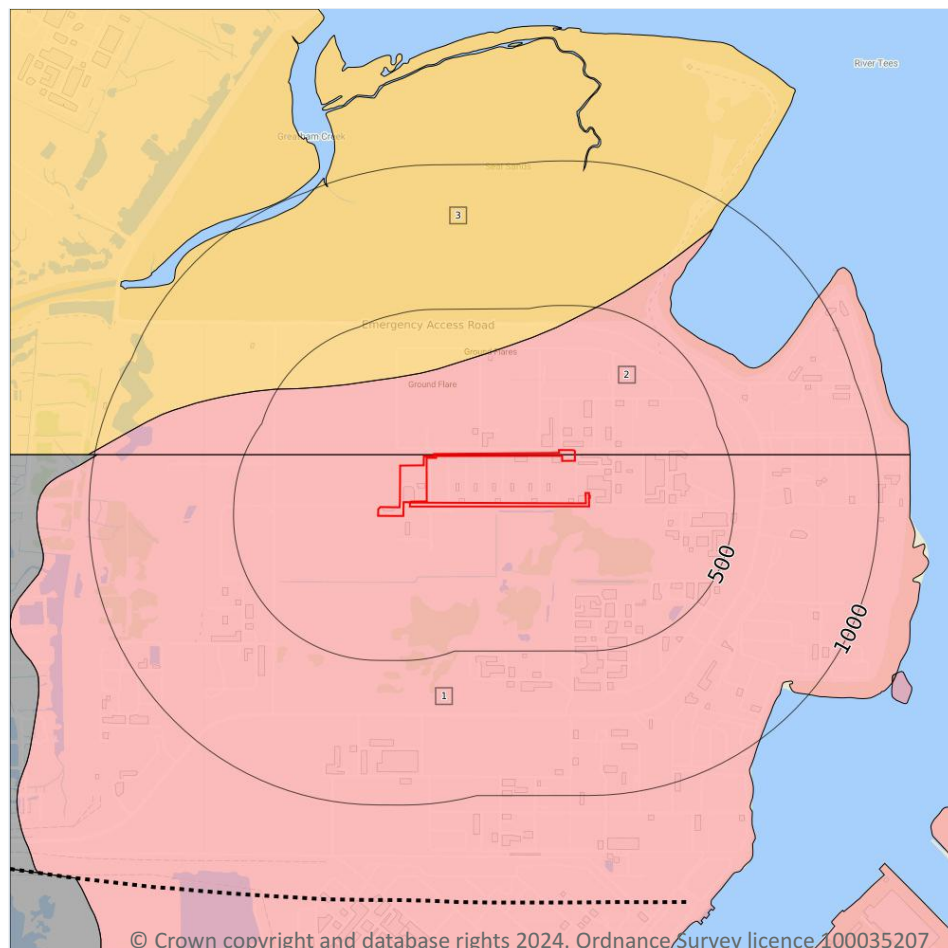
0

Mass movement deposits on BGS geological maps at 1:10,000 scale. Primarily superficial deposits that have moved down slope under gravity to form landslips. These affect bedrock, other superficial deposits and artificial ground.

This data is sourced from the British Geological Survey.



Geology 1:10,000 scale - Bedrock



Site Outline

Search buffers in metres (m)

..... Bedrock faults and other linear features (10k)

Bedrock geology (10k)
Please see table for more details.

14.5 Bedrock geology (10k)

Records within 500m

3

Bedrock geology at 1:10,000 scale. The main mass of rocks forming the Earth and present everywhere, whether exposed at the surface in outcrops or concealed beneath superficial deposits or water.

Features are displayed on the Geology 1:10,000 scale - Bedrock map on [page 163](#) >

ID	Location	LEX Code	Description	Rock age
1	On site	MMG-MDSS	Mercia Mudstone Group - Mudstone, Siltstone And Sandstone	Rhaetian Age - Early Triassic Epoch
2	On site	MMG-MDST	Mercia Mudstone Group - Mudstone	Rhaetian Age - Early Triassic Epoch



ID	Location	LEX Code	Description	Rock age
3	283m N	SSG-SDST	Sherwood Sandstone Group - Sandstone	Ladinian Age - Late Permian Epoch [Obsolete name]

This data is sourced from the British Geological Survey.

14.6 Bedrock faults and other linear features (10k)

Records within 500m

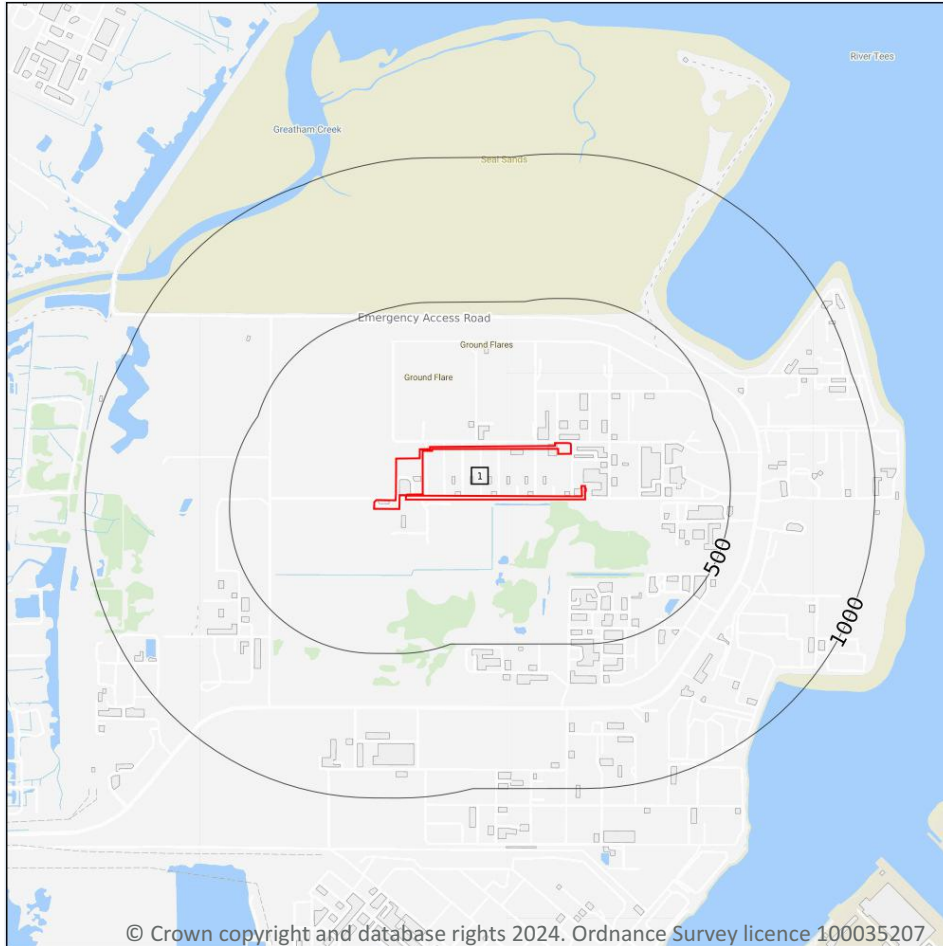
0

Linear features at the ground or bedrock surface at 1:10,000 scale of six main types; rock, fault, fold axis, mineral vein, alteration area or landform. Features are either observed or inferred, and relate primarily to bedrock.

This data is sourced from the British Geological Survey.



15 Geology 1:50,000 scale - Availability



— Site Outline
Search buffers in metres (m)

☐ Geological map tile

15.1 50k Availability

Records within 500m

1

An indication on the coverage of 1:50,000 scale geology data for the site. Either 'Full' or 'No coverage' for each geological theme.

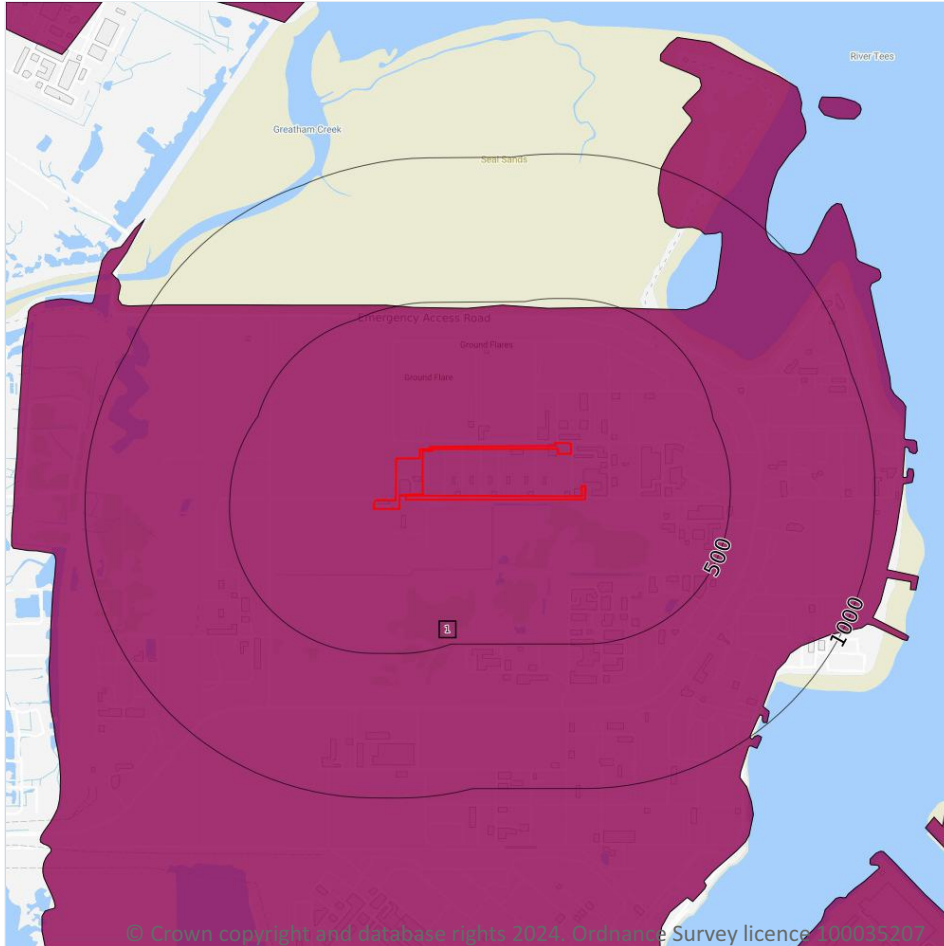
Features are displayed on the Geology 1:50,000 scale - Availability map on [page 165](#) >

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	On site	Full	Full	Full	Full	EW033_stockton_v4

This data is sourced from the British Geological Survey.



Geology 1:50,000 scale - Artificial and made ground



— Site Outline
Search buffers in metres (m)

- Made ground
- Worked ground
- Infilled ground
- Disturbed ground
- Landscaped ground

15.2 Artificial and made ground (50k)

Records within 500m

1

Details of made, worked, infilled, disturbed and landscaped ground at 1:50,000 scale. Artificial ground can be associated with potentially contaminated material, unpredictable engineering conditions and instability.

Features are displayed on the Geology 1:50,000 scale - Artificial and made ground map on [page 166 >](#)

ID	Location	LEX Code	Description	Rock description
1	On site	MGR-ARTDP	MADE GROUND (UNDIVIDED)	ARTIFICIAL DEPOSIT

This data is sourced from the British Geological Survey.



15.3 Artificial ground permeability (50k)

Records within 50m**2**

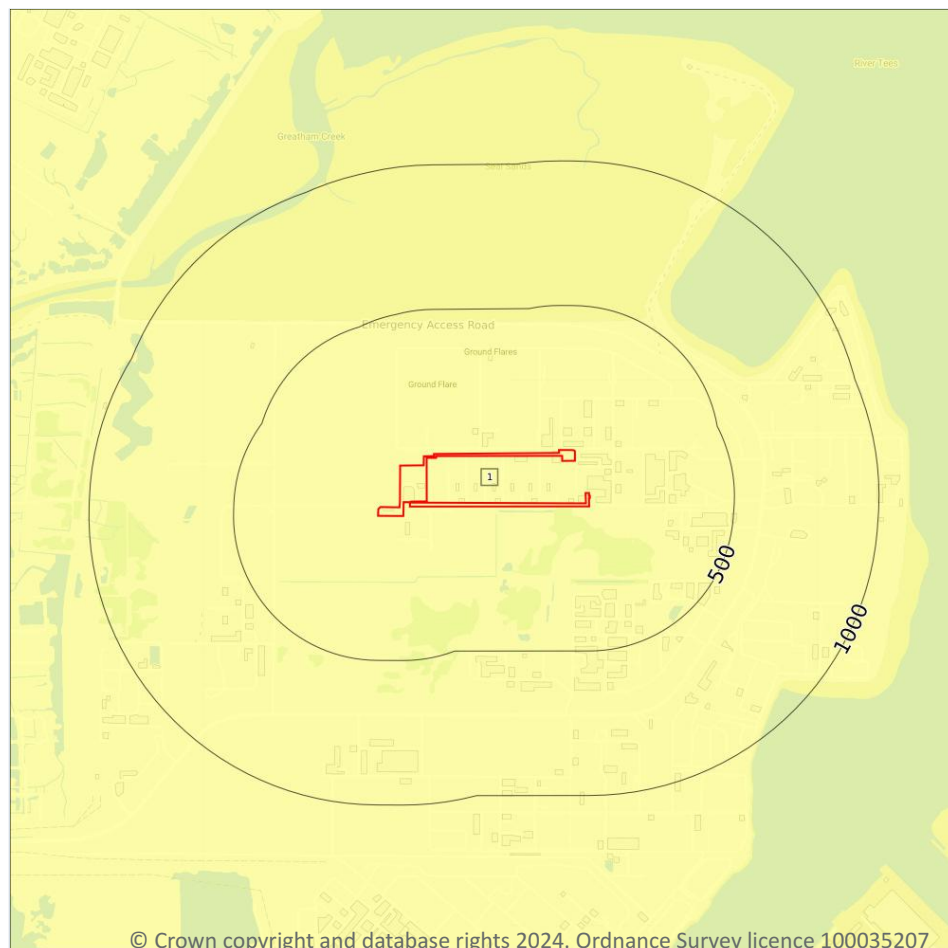
A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of any artificial deposits (the zone between the land surface and the water table).

Location	Flow type	Maximum permeability	Minimum permeability
On site	Mixed	Very High	Low
On site	Mixed	Very High	Low

This data is sourced from the British Geological Survey.



Geology 1:50,000 scale - Superficial



— Site Outline

Search buffers in metres (m)

 Landslip (50k)

Superficial geology (50k)
Please see table for more details.

15.4 Superficial geology (50k)

Records within 500m

1

Superficial geological deposits at 1:50,000 scale. Also known as 'drift', these are the youngest geological deposits, formed during the Quaternary. They rest on older deposits or rocks referred to as bedrock.

Features are displayed on the Geology 1:50,000 scale - Superficial map on [page 168](#) >

ID	Location	LEX Code	Description	Rock description
1	On site	TFD-XSZC	TIDAL FLAT DEPOSITS	SAND, SILT AND CLAY

This data is sourced from the British Geological Survey.



15.5 Superficial permeability (50k)

Records within 50m**2**

A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of any superficial deposits (the zone between the land surface and the water table).

Location	Flow type	Maximum permeability	Minimum permeability
On site	Intergranular	High	Low
On site	Intergranular	High	Low

This data is sourced from the British Geological Survey.

15.6 Landslip (50k)

Records within 500m**0**

Mass movement deposits on BGS geological maps at 1:50,000 scale. Primarily superficial deposits that have moved down slope under gravity to form landslips. These affect bedrock, other superficial deposits and artificial ground.

This data is sourced from the British Geological Survey.

15.7 Landslip permeability (50k)

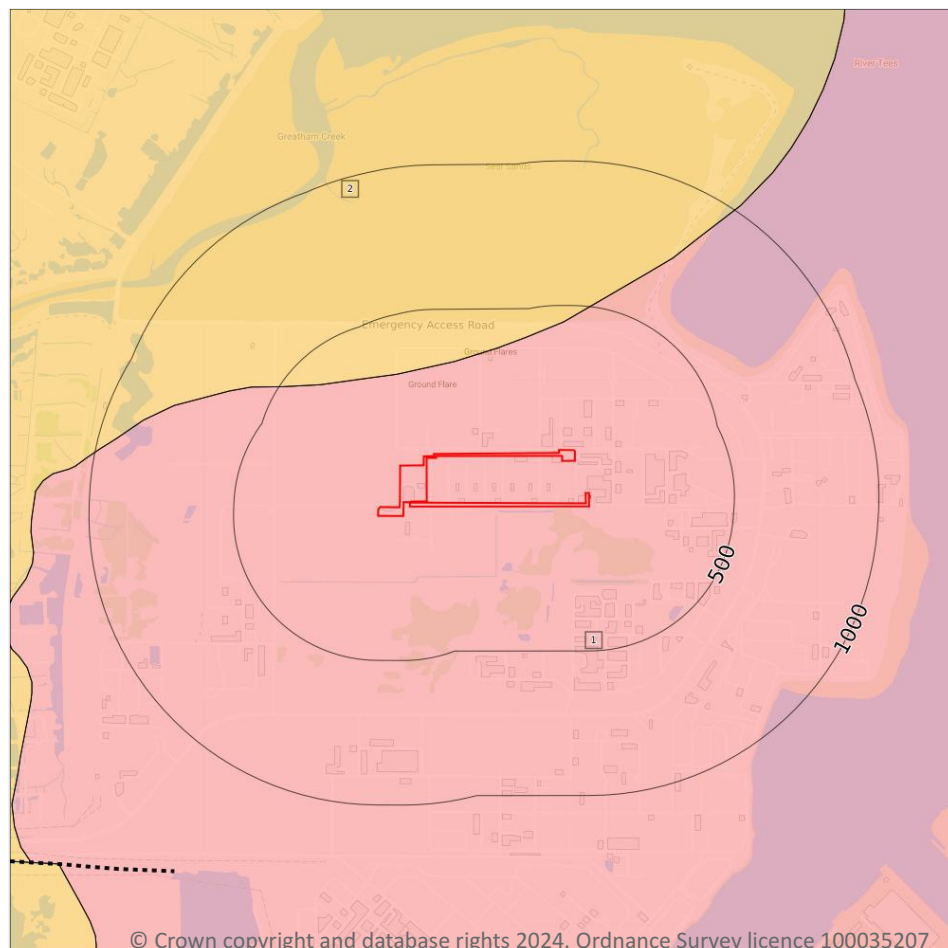
Records within 50m**0**

A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of any landslip deposits (the zone between the land surface and the water table).

This data is sourced from the British Geological Survey.



Geology 1:50,000 scale - Bedrock



— Site Outline

Search buffers in metres (m)

.... Bedrock faults and other linear features (50k)

Bedrock geology (50k)
Please see table for more details.

15.8 Bedrock geology (50k)

Records within 500m

2

Bedrock geology at 1:50,000 scale. The main mass of rocks forming the Earth and present everywhere, whether exposed at the surface in outcrops or concealed beneath superficial deposits or water.

Features are displayed on the Geology 1:50,000 scale - Bedrock map on [page 170](#) >

ID	Location	LEX Code	Description	Rock age
1	On site	MMG-MDST	MERCIA MUDSTONE GROUP - MUDSTONE	-
2	297m N	SSG-SDST	SHERWOOD SANDSTONE GROUP - SANDSTONE	-

This data is sourced from the British Geological Survey.



15.9 Bedrock permeability (50k)

Records within 50m**2**

A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of bedrock (the zone between the land surface and the water table).

Location	Flow type	Maximum permeability	Minimum permeability
On site	Fracture	Low	Low
On site	Fracture	Low	Low

This data is sourced from the British Geological Survey.

15.10 Bedrock faults and other linear features (50k)

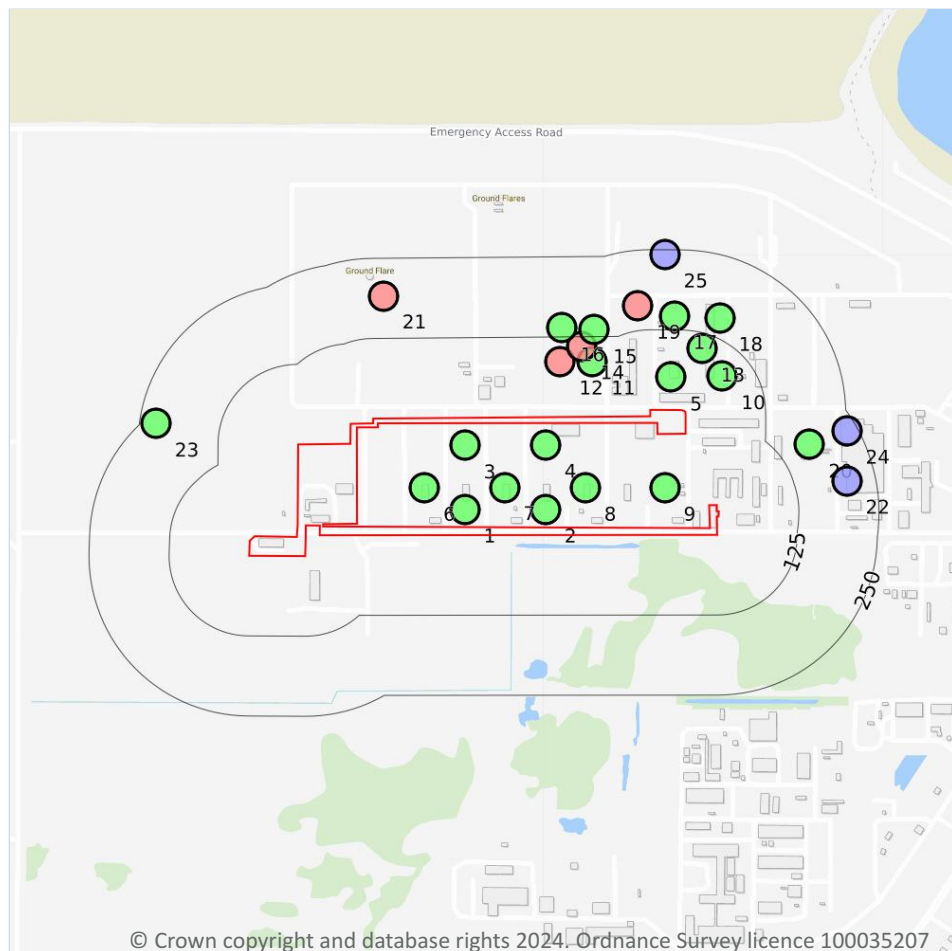
Records within 500m**0**

Linear features at the ground or bedrock surface at 1:50,000 scale of six main types; rock, fault, fold axis, mineral vein, alteration area or landform. Features are either observed or inferred, and relate primarily to bedrock.

This data is sourced from the British Geological Survey.



16 Boreholes



— Site Outline

Search buffers in metres (m)

- Confidential
- 0 - 10m
- 10 - 30m
- 30m+
- Unknown

16.1 BGS Boreholes

Records within 250m

25

The Single Onshore Boreholes Index (SOBI); an index of over one million records of boreholes, shafts and wells from all forms of drilling and site investigation work held by the British Geological Survey. Covering onshore and nearshore boreholes dating back to at least 1790 and ranging from one to several thousand metres deep.

Features are displayed on the Boreholes map on [page 172 >](#)

ID	Location	Grid reference	Name	Length	Confidential	Web link
1	27m SE	452928 524860	SEAL SANDS TEESIDE P12B	17.2	N	917714 ↗
2	27m E	453054 524860	SEAL SANDS TEESIDE P11B	19.5	N	917711 ↗
3	34m NE	452928 524961	SEAL SANDS TEESIDE P12A	18.0	N	917713 ↗

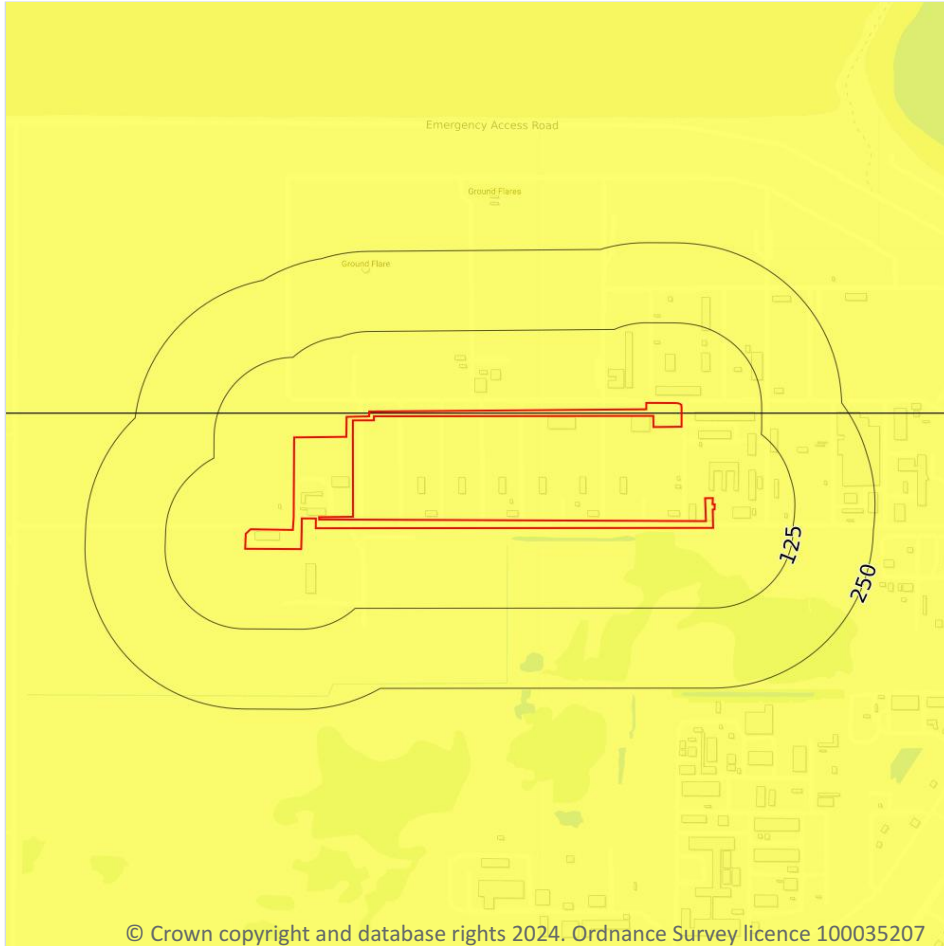


ID	Location	Grid reference	Name	Length	Confidential	Web link
4	35m E	453054 524961	SEAL SANDS TEESIDE P11A	28.0	N	917710 ↗
5	51m NE	453250 525067	SEAL SANDS TEESSIDE P8	26.45	N	839884 ↗
6	62m N	452865 524895	SEAL SANDS TEESIDE P13	20.7	N	917715 ↗
7	62m E	452990 524895	SEAL SANDS TEESIDE P12	28.0	N	917712 ↗
8	63m E	453116 524895	SEAL SANDS TEESIDE P11	23.0	N	917709 ↗
9	63m E	453240 524895	SEAL SANDS TEESIDE P10	20.0	N	917708 ↗
10	81m E	453330 525069	SEAL SANDS TEESSIDE P9	30.0	N	839885 ↗
11	86m NE	453127 525091	SEAL SANDS TEESIDE P5C	25.95	N	839879 ↗
12	86m NE	453077 525091	SEAL SANDS TEESIDE P5D	30.5	N	839880 ↗
13	101m NE	453298 525112	SEAL SANDS TEESIDE P6A	19.6	N	839882 ↗
14	110m NE	453110 525115	SEAL SANDS TEESIDE P5A	40.1	N	839877 ↗
15	136m NE	453130 525141	SEAL SANDS TEESIDE P5B	25.55	N	839878 ↗
16	139m NE	453079 525144	SEAL SANDS TEESIDE P5	30.0	N	839876 ↗
17	146m NE	453255 525162	SEAL SANDS TEESIDE P6	27.7	N	839881 ↗
18	156m NE	453326 525160	SEAL SANDS TEESIDE P7	22.0	N	839883 ↗
19	164m NE	453198 525179	SEAL SANDS, TEESIDE 3	31.4	N	839723 ↗
20	173m E	453466 524962	SEAL SANDS TEESIDE P15	26.5	N	917716 ↗
21	191m N	452801 525194	SEAL SANDS TEESSIDE P14	36.9	N	839886 ↗
22	205m E	453524 524905	SEAL SANDS TEESIDE P19	5.9	N	917720 ↗
23	225m W	452446 524995	SEAL SANDS, TEESIDE 6	27.75	N	839724 ↗
24	233m E	453524 524983	SEAL SANDS TEESIDE P16	5.0	N	917717 ↗
25	243m NE	453240 525259	SEAL SANDS TEESIDE P4C	8.53	N	839875 ↗

This data is sourced from the British Geological Survey.



17 Natural ground subsidence - Shrink swell clays



— Site Outline

Search buffers in metres (m)

- ☐ No data
- ☐ Negligible
- ☐ Very low
- ☐ Low
- ☐ Moderate
- ☐ High

17.1 Shrink swell clays

Records within 50m

1

The potential hazard presented by soils that absorb water when wet (making them swell), and lose water as they dry (making them shrink). This shrink-swell behaviour is controlled by the type and amount of clay in the soil, and by seasonal changes in the soil moisture content (related to rainfall and local drainage).

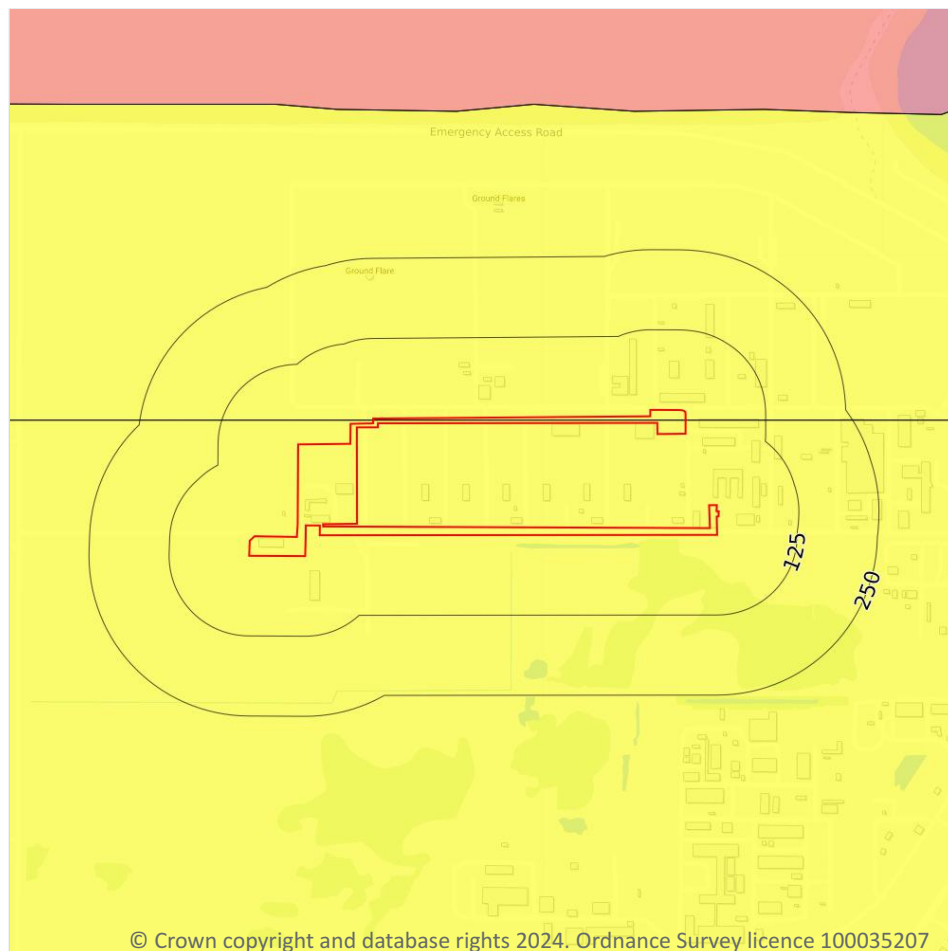
Features are displayed on the Natural ground subsidence - Shrink swell clays map on [page 174 >](#)

Location	Hazard rating	Details
On site	Very low	Ground conditions predominantly low plasticity.

This data is sourced from the British Geological Survey.



Natural ground subsidence - Running sands



- Site Outline
- Search buffers in metres (m)
- ☐ No data
 - ☐ Negligible
 - ☐ Very low
 - ☐ Low
 - ☐ Moderate
 - ☐ High

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17.2 Running sands

Records within 50m

1

The potential hazard presented by rocks that can contain loosely-packed sandy layers that can become fluidised by water flowing through them. Such sands can 'run', removing support from overlying buildings and causing potential damage.

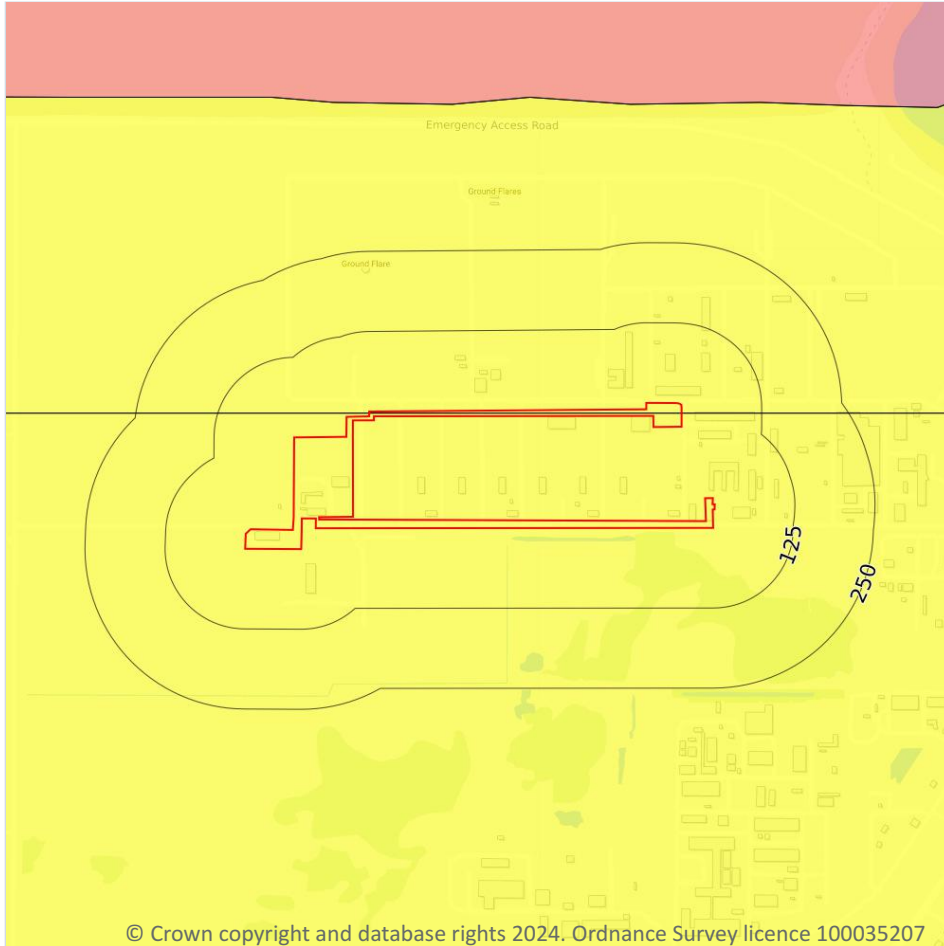
Features are displayed on the Natural ground subsidence - Running sands map on [page 175 >](#)

Location	Hazard rating	Details
On site	Very low	Running sand conditions are unlikely. No identified constraints on land use due to running conditions unless water table rises rapidly.

This data is sourced from the British Geological Survey.



Natural ground subsidence - Compressible deposits



- Site Outline
- Search buffers in metres (m)
- ☐ No data
 - ☐ Negligible
 - ☐ Very low
 - ☐ Low
 - ☐ Moderate
 - ☐ High

17.3 Compressible deposits

Records within 50m

1

The potential hazard presented by types of ground that may contain layers of very soft materials like clay or peat and may compress if loaded by overlying structures, or if the groundwater level changes, potentially resulting in depression of the ground and disturbance of foundations.

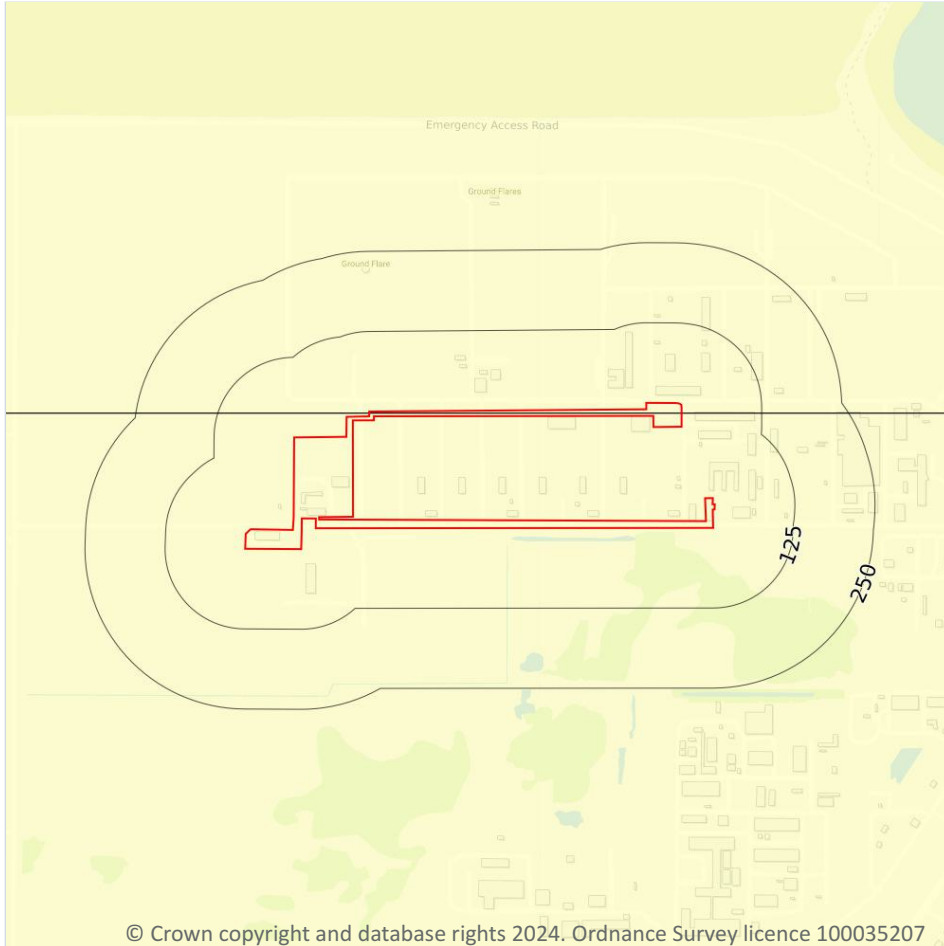
Features are displayed on the Natural ground subsidence - Compressible deposits map on [page 176 >](#)

Location	Hazard rating	Details
On site	Very low	Compressibility and uneven settlement problems are not likely to be significant on the site for most land uses.

This data is sourced from the British Geological Survey.



Natural ground subsidence - Collapsible deposits



— Site Outline
Search buffers in metres (m)

- ☐ No data
- ☐ Negligible
- ☐ Very low
- ☐ Low
- ☐ Moderate
- ☐ High

17.4 Collapsible deposits

Records within 50m

1

The potential hazard presented by natural deposits that could collapse when a load (such as a building) is placed on them or they become saturated with water.

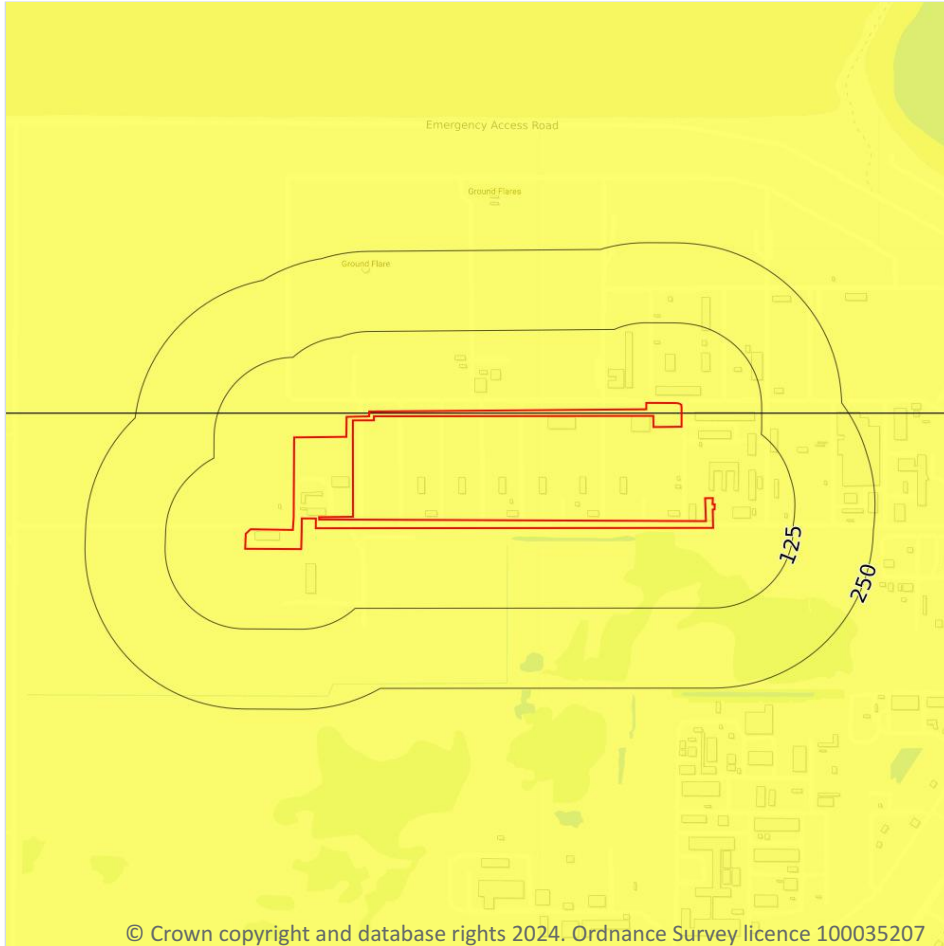
Features are displayed on the Natural ground subsidence - Collapsible deposits map on [page 177 >](#)

Location	Hazard rating	Details
On site	Negligible	Deposits with potential to collapse when loaded and saturated are believed not to be present.

This data is sourced from the British Geological Survey.



Natural ground subsidence - Landslides



— Site Outline

Search buffers in metres (m)

- ☐ No data
- ☐ Negligible
- ☐ Very low
- ☐ Low
- ☐ Moderate
- ☐ High

17.5 Landslides

Records within 50m

1

The potential for landsliding (slope instability) to be a hazard assessed using 1:50,000 scale digital maps of superficial and bedrock deposits, combined with information from the BGS National Landslide Database and scientific and engineering reports.

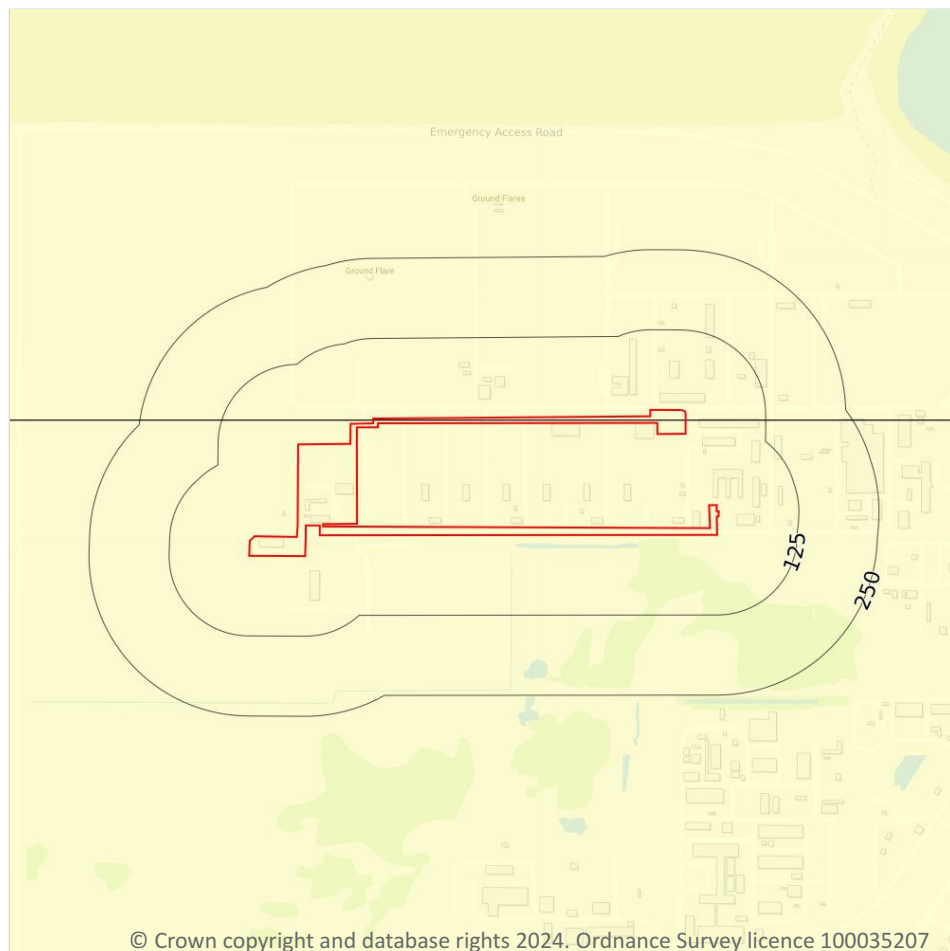
Features are displayed on the Natural ground subsidence - Landslides map on [page 178 >](#)

Location	Hazard rating	Details
On site	Very low	Slope instability problems are not likely to occur but consideration to potential problems of adjacent areas impacting on the site should always be considered.

This data is sourced from the British Geological Survey.



Natural ground subsidence - Ground dissolution of soluble rocks



- Site Outline
- Search buffers in metres (m)
- ☐ No data
 - ☐ Negligible
 - ☐ Very low
 - ☐ Low
 - ☐ Moderate
 - ☐ High

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17.6 Ground dissolution of soluble rocks

Records within 50m

1

The potential hazard presented by ground dissolution, which occurs when water passing through soluble rocks produces underground cavities and cave systems. These cavities reduce support to the ground above and can cause localised collapse of the overlying rocks and deposits.

Features are displayed on the Natural ground subsidence - Ground dissolution of soluble rocks map on [page 179](#) >

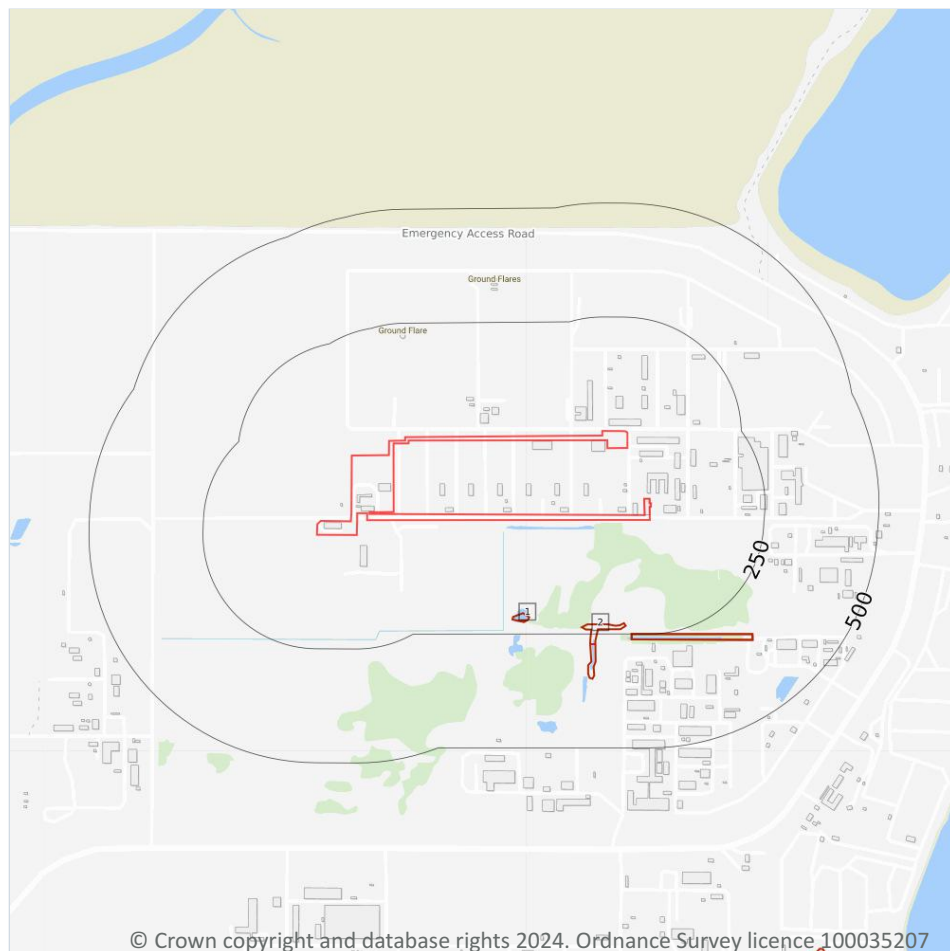
Location	Hazard rating	Details
On site	Negligible	Soluble rocks are either not thought to be present within the ground, or not prone to dissolution. Dissolution features are unlikely to be present.



This data is sourced from the British Geological Survey.



18 Mining and ground workings



- Site Outline
- Search buffers in metres (m)
- BritPits
- Surface ground workings
- Underground workings
- Underground mining extents
- Historical mineral planning areas
- TCA non-coal mining
- Non Coal Mining
 - Sporadic underground mining of restricted extent possible
 - Localised small scale underground mining possible
 - Small scale mining possible
 - Underground mining known or likely within or in close proximity
 - Underground mining known within or in very close proximity

18.1 BritPits

Records within 500m

0

BritPits (an abbreviation of British Pits) is a database maintained by the British Geological Survey of currently active and closed surface and underground mineral workings. Details of major mineral handling sites, such as wharfs and rail depots are also held in the database.

This data is sourced from the British Geological Survey.



18.2 Surface ground workings

Records within 250m**2**

Historical land uses identified from Ordnance Survey mapping that involved ground excavation at the surface. These features may or may not have been subsequently backfilled.

Features are displayed on the Mining and ground workings map on [page 181](#) >

ID	Location	Land Use	Year of mapping	Mapping scale
1	204m SE	Pond	1992	1:10000
2	226m SE	Ponds	1992	1:10000

This is data is sourced from Ordnance Survey/Groundsure.

18.3 Underground workings

Records within 1000m**0**

Historical land uses identified from Ordnance Survey mapping that indicate the presence of underground workings e.g. mine shafts.

This is data is sourced from Ordnance Survey/Groundsure.

18.4 Underground mining extents

Records within 500m**0**

This data identifies underground mine workings that could present a potential risk, including adits and seam workings. These features have been identified from BGS Geological mapping and mine plans sourced from the BGS and various collections and sources.

This data is sourced from Groundsure.

18.5 Historical Mineral Planning Areas

Records within 500m**0**

Boundaries of mineral planning permissions for England and Wales. This data was collated between the 1940s (and retrospectively to the 1930s) and the mid 1980s. The data includes permitted, withdrawn and refused permissions.

This data is sourced from the British Geological Survey.



18.6 Non-coal mining

Records within 1000m

2

The potential for historical non-coal mining to have affected an area. The assessment is drawn from expert knowledge and literature in addition to the digital geological map of Britain. Mineral commodities may be divided into seven general categories - vein minerals, chalk, oil shale, building stone, bedded ores, evaporites and 'other' commodities (including ball clay, jet, black marble, graphite and chert).

Features are displayed on the Mining and ground workings map on [page 181](#) >

ID	Location	Name	Commodity	Class	Likelihood
-	750m W	Saltholme Brinefield	Salt - brine	C	Underground mine workings may have occurred in the past, or current mines may be operating to modern engineering standards. Potential for difficult ground conditions should be considered.
-	779m W	Saltholme Brinefield	Salt - brine	C	Underground mine workings may have occurred in the past, or current mines may be operating to modern engineering standards. Potential for difficult ground conditions should be considered.

This data is sourced from the British Geological Survey.

18.7 JPB mining areas

Records on site

0

Areas which could be affected by former coal and other mining. This data includes some mine plans unavailable to the Coal Authority.

This data is sourced from Johnson Poole and Bloomer.

18.8 The Coal Authority non-coal mining

Records within 500m

0

This data provides an indication of the potential zone of influence of recorded underground non-coal mining workings. Any and all analysis and interpretation of Coal Authority Data in this report is made by Groundsure, and is in no way supported, endorsed or authorised by the Coal Authority. The use of the data is restricted to the terms and provisions contained in this report. Data reproduced in this report may be the copyright of the Coal Authority and permission should be sought from Groundsure prior to any re-use.

This data is sourced from The Coal Authority.



18.9 Researched mining

Records within 500m

0

This data indicates areas of potential mining identified from alternative or archival sources, including; BGS Geological paper maps, Lidar data, aerial photographs (from World War II onwards), archaeological data services, websites, Tithe maps, and various text/plans from collected books and reports. Some of this data is approximate and Groundsure have interpreted the resultant risk area and, where possible, specific areas of risk have been captured.

This data is sourced from Groundsure.

18.10 Mining record office plans

Records within 500m

0

This dataset is representative of Mining Record Office and/or plan extents held by Groundsure and should be considered approximate. Where possible, plans have been located and any specific areas of risk they depict have been captured.

This data is sourced from Groundsure.

18.11 BGS mine plans

Records within 500m

0

This dataset is representative of BGS mine plans held by Groundsure and should be considered approximate. Where possible, plans have been located and any specific areas of risk they depict have been captured.

This data is sourced from Groundsure.

18.12 Coal mining

Records on site

0

Areas which could be affected by past, current or future coal mining.

This data is sourced from the Coal Authority.

18.13 Brine areas

Records on site

0

The Cheshire Brine Compensation District indicates areas that may be affected by salt and brine extraction in Cheshire and where compensation would be available where damage from this mining has occurred. Damage from salt and brine mining can still occur outside this district, but no compensation will be available.

This data is sourced from the Cheshire Brine Subsidence Compensation Board.



18.14 Gypsum areas

Records on site	0
-----------------	---

Generalised areas that may be affected by gypsum extraction.

This data is sourced from British Gypsum.

18.15 Tin mining

Records on site	0
-----------------	---

Generalised areas that may be affected by historical tin mining.

This data is sourced from Groundsure.

18.16 Clay mining

Records on site	0
-----------------	---

Generalised areas that may be affected by kaolin and ball clay extraction.

This data is sourced from the Kaolin and Ball Clay Association (UK).



19 Ground cavities and sinkholes

19.1 Natural cavities

Records within 500m

0

Industry recognised national database of natural cavities. Sinkholes and caves are formed by the dissolution of soluble rock, such as chalk and limestone, gulls and fissures by cambering. Ground instability can result from movement of loose material contained within these cavities, often triggered by water.

This data is sourced from Stantec UK Ltd.

19.2 Mining cavities

Records within 1000m

0

Industry recognised national database of mining cavities. Degraded mines may result in hazardous subsidence (crown holes). Climatic conditions and water escape can also trigger subsidence over mine entrances and workings.

This data is sourced from Stantec UK Ltd.

19.3 Reported recent incidents

Records within 500m

0

This data identifies sinkhole information gathered from media reports and Groundsure's own records. This data goes back to 2014 and includes relative accuracy ratings for each event and links to the original data sources. The data is updated on a regular basis and should not be considered a comprehensive catalogue of all sinkhole events. The absence of data in this database does not mean a sinkhole definitely has not occurred during this time.

This data is sourced from Groundsure.

19.4 Historical incidents

Records within 500m

0

This dataset comprises an extract of 1:10,560, 1:10,000, 1:2,500 and 1:1,250 scale historical Ordnance Survey maps held by Groundsure, dating back to the 1840s. It shows shakeholes, deneholes and other 'holes' as noted on these maps. Dene holes are medieval chalk extraction pits, usually comprising a narrow shaft with a number of chambers at the base of the shaft. Shakeholes are an alternative name for suffusion sinkholes, most commonly found in the limestone landscapes of North Yorkshire but also extensively noted around the Brecon Beacons National Park.

Not all 'holes' noted on Ordnance Survey mapping will necessarily be present within this dataset.



This data is sourced from Groundsure.

19.5 National karst database

Records within 500m

0

This is a comprehensive database of national karst information gathered from a wide range of sources. BGS have collected data on five main types of karst feature: Sinkholes, stream links, caves, springs, and incidences of associated damage to buildings, roads, bridges and other engineered works.

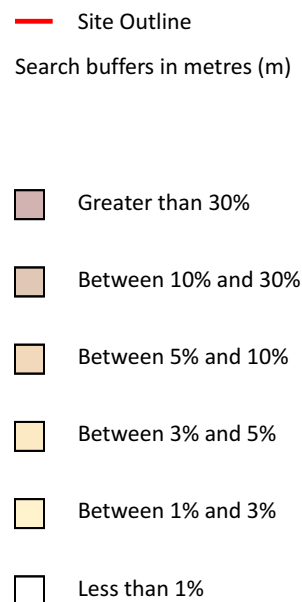
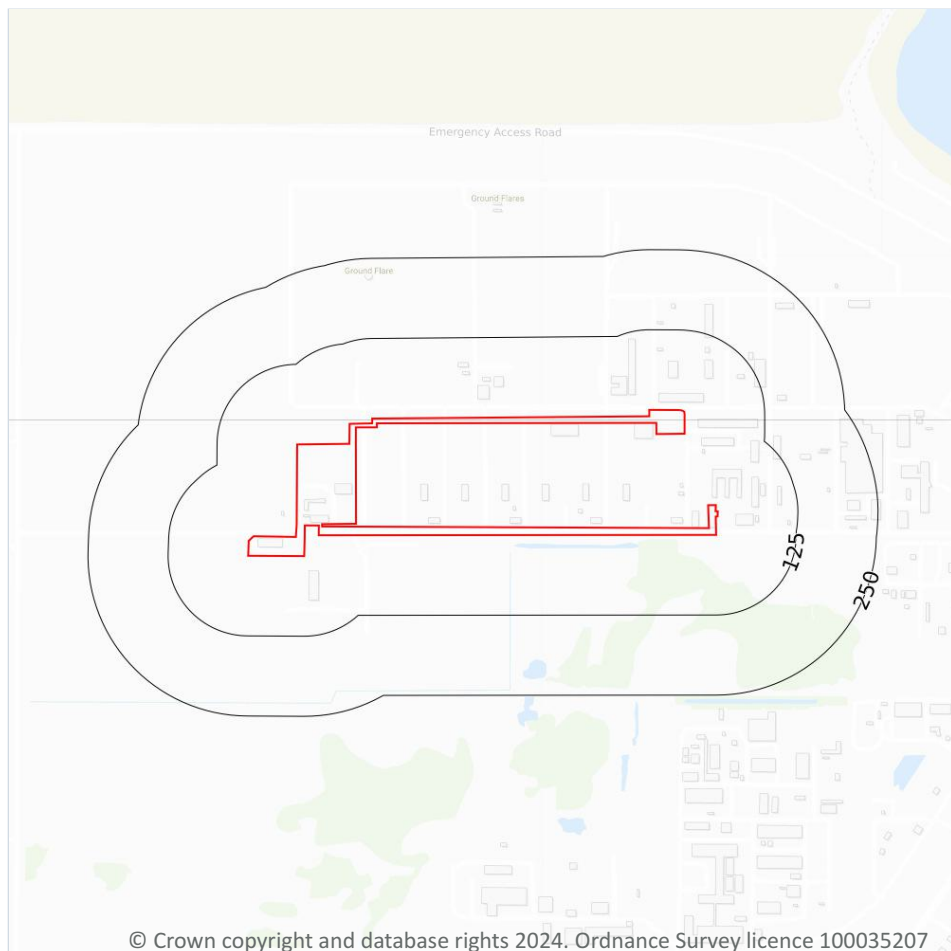
Since the database was set up in 2002 data covering most of the evaporite karst areas of the UK have now been added, along with data covering about 60% of the Chalk, and 35% of the Carboniferous Limestone outcrops. Many of the classic upland karst areas have yet to be included. Recorded so far are: Over 800 caves, 1300 stream sinks, 5600 springs, 10,000 sinkholes.

The database is not yet complete, and not all records have been verified. The absence of data does not mean that karst features are not present at a site. A reliability rating is included with each record.

This data is sourced from the British Geological Survey.



20 Radon



20.1 Radon

Records on site

1

The Radon Potential data classifies areas based on their likelihood of a property having a radon level at or above the Action Level in Great Britain. The dataset is intended for use at 1:50,000 scale and was derived from both geological assessments and indoor radon measurements (more than 560,000 records). A minimum 50m buffer should be considered when searching the maps, as the smallest detectable feature at this scale is 50m. The findings of this section should supersede any estimations derived from the Indicative Atlas of Radon in Great Britain (1:100,000 scale).

Features are displayed on the Radon map on [page 188](#) >

Location	Estimated properties affected	Radon Protection Measures required
On site	Less than 1%	None



This data is sourced from the British Geological Survey and UK Health Security Agency.



21 Soil chemistry

21.1 BGS Estimated Background Soil Chemistry

Records within 50m

9

The estimated values provide the likely background concentration of the potentially harmful elements Arsenic, Cadmium, Chromium, Lead and Nickel in topsoil. The values are estimated primarily from rural topsoil data collected at a sample density of approximately 1 per 2 km². In areas where rural soil samples are not available, estimation is based on stream sediment data collected from small streams at a sampling density of 1 per 2.5 km²; this is the case for most of Scotland, Wales and southern England. The stream sediment data are converted to soil-equivalent concentrations prior to the estimation.

Location	Arsenic	Bioaccessible Arsenic	Lead	Bioaccessible Lead	Cadmium	Chromium	Nickel
On site	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	No data	100 - 200 mg/kg	60 - 120 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	No data	100 - 200 mg/kg	60 - 120 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	No data	100 - 200 mg/kg	60 - 120 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg

This data is sourced from the British Geological Survey.



21.2 BGS Estimated Urban Soil Chemistry

Records within 50m

0

Estimated topsoil chemistry of Arsenic, Cadmium, Chromium, Copper, Nickel, Lead, Tin and Zinc and bioaccessible Arsenic and Lead in 23 urban centres across Great Britain. These estimates are derived from interpolation of the measured urban topsoil data referred to above and provide information across each city between the measured sample locations (4 per km²).

This data is sourced from the British Geological Survey.

21.3 BGS Measured Urban Soil Chemistry

Records within 50m

0

The locations and measured total concentrations (mg/kg) of Arsenic, Cadmium, Chromium, Copper, Nickel, Lead, Tin and Zinc in urban topsoil samples from 23 urban centres across Great Britain. These are collected at a sample density of 4 per km².

This data is sourced from the British Geological Survey.



22 Railway infrastructure and projects

22.1 Underground railways (London)

Records within 250m**0**

Details of all active London Underground lines, including approximate tunnel roof depth and operational hours.

This data is sourced from publicly available information by Groundsure.

22.2 Underground railways (Non-London)

Records within 250m**0**

Details of the Merseyrail system, the Tyne and Wear Metro and the Glasgow Subway. Not all parts of all systems are located underground. The data contains location information only and does not include a depth assessment.

This data is sourced from publicly available information by Groundsure.

22.3 Railway tunnels

Records within 250m**0**

Railway tunnels taken from contemporary Ordnance Survey mapping.

This data is sourced from the Ordnance Survey.

22.4 Historical railway and tunnel features

Records within 250m**0**

Railways and tunnels digitised from historical Ordnance Survey mapping as scales of 1:1,250, 1:2,500, 1:10,000 and 1:10,560.

This data is sourced from Ordnance Survey/Groundsure.

22.5 Royal Mail tunnels

Records within 250m**0**

The Post Office Railway, otherwise known as the Mail Rail, is an underground railway running through Central London from Paddington Head District Sorting Office to Whitechapel Eastern Head Sorting Office. The line is 10.5km long. The data includes details of the full extent of the tunnels, the depth of the tunnel, and the depth to track level.



This data is sourced from Groundsure/the Postal Museum.

22.6 Historical railways

Records within 250m

0

Former railway lines, including dismantled lines, abandoned lines, disused lines, historic railways and razed lines.

This data is sourced from OpenStreetMap.

22.7 Railways

Records within 250m

0

Currently existing railway lines, including standard railways, narrow gauge, funicular, trams and light railways.

This data is sourced from Ordnance Survey and OpenStreetMap.

22.8 Crossrail 2

Records within 500m

0

Crossrail 2 is a proposed railway linking the national rail networks in Surrey and Hertfordshire via an underground tunnel through London.

This data is sourced from publicly available information by Groundsure.

22.9 HS2

Records within 500m

0

HS2 is a proposed high speed rail network running from London to Manchester and Leeds via Birmingham. Main civils construction on Phase 1 (London to Birmingham) of the project began in 2019, and it is currently anticipated that this phase will be fully operational by 2026. Construction on Phase 2a (Birmingham to Crewe) is anticipated to commence in 2021, with the service fully operational by 2027. Construction on Phase 2b (Crewe to Manchester and Birmingham to Leeds) is scheduled to begin in 2023 and be operational by 2033.

This data is sourced from HS2 Ltd.



Data providers

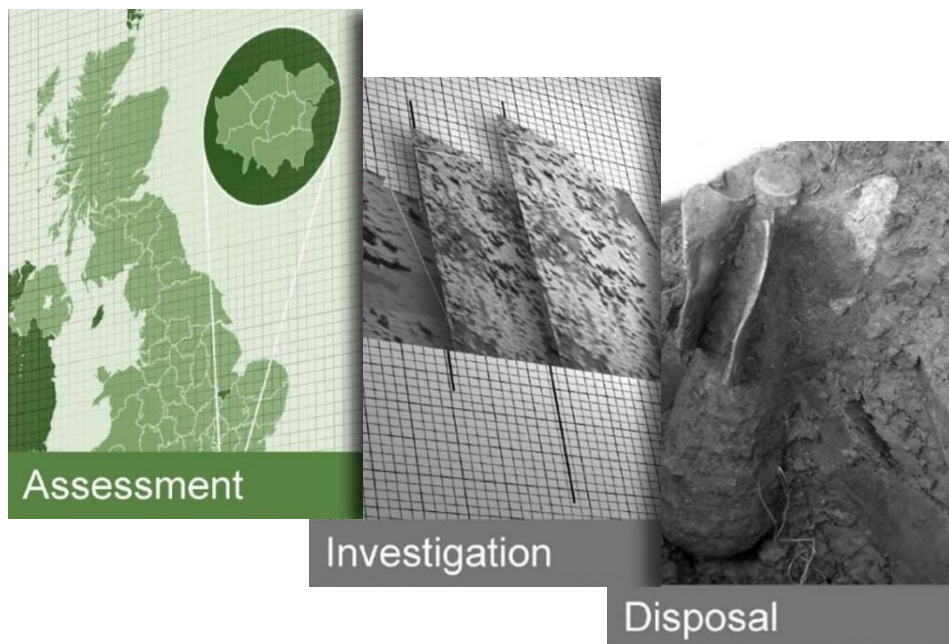
Groundsure works with respected data providers to bring you the most relevant and accurate information. To find out who they are and their areas of expertise see <https://www.groundsure.com/sources-reference> ↗.

Terms and conditions

Groundsure's Terms and Conditions can be accessed at this link: www.groundsure.com/terms-and-conditions-april-2023/ ↗.



A.2 Zetica UXO - UXO desk study and risk assessment



UXO Desk Study & Risk Assessment

Document Ref. P14872-24-R1
Revision A
Project Title Ethane 2 Power Project
Client ConocoPhillips
Date 7th October 2024

Drafted by Harry Clayton
Checked by Matthew Eatough
Authorised by Stefan Lang

UXO DESK STUDY & RISK ASSESSMENT

EXECUTIVE SUMMARY

Key findings: Potential hazard from Unexploded Bombs (UXB) and practice bombs on the Site.

Key actions: Deep UXB detection is required to clear borehole or pile locations.

Explosive Ordnance Clearance (EOC) engineer supervision is recommended for excavations below post-World War Two (WWII) Made Ground.

UXO hazard assessment

WWII German Bombing (M1)

Records have been found indicating that at least 10 No. High Explosive (HE) bombs fell on the Seal Sands mudflats during WWII, in the immediate vicinity of the Site.

Given the high localised bombing density and intensity of raids in the area, it is considered possible that an UXB may have fallen on the Site and gone unnoticed.

WWII Practice Bombing Range (M2)

During WWII the Site was also located within the danger area of the Seal Sands practice bombing range. Although this was designated as a practice bombing range, it is known that live bombs were often used on such ranges during wartime.

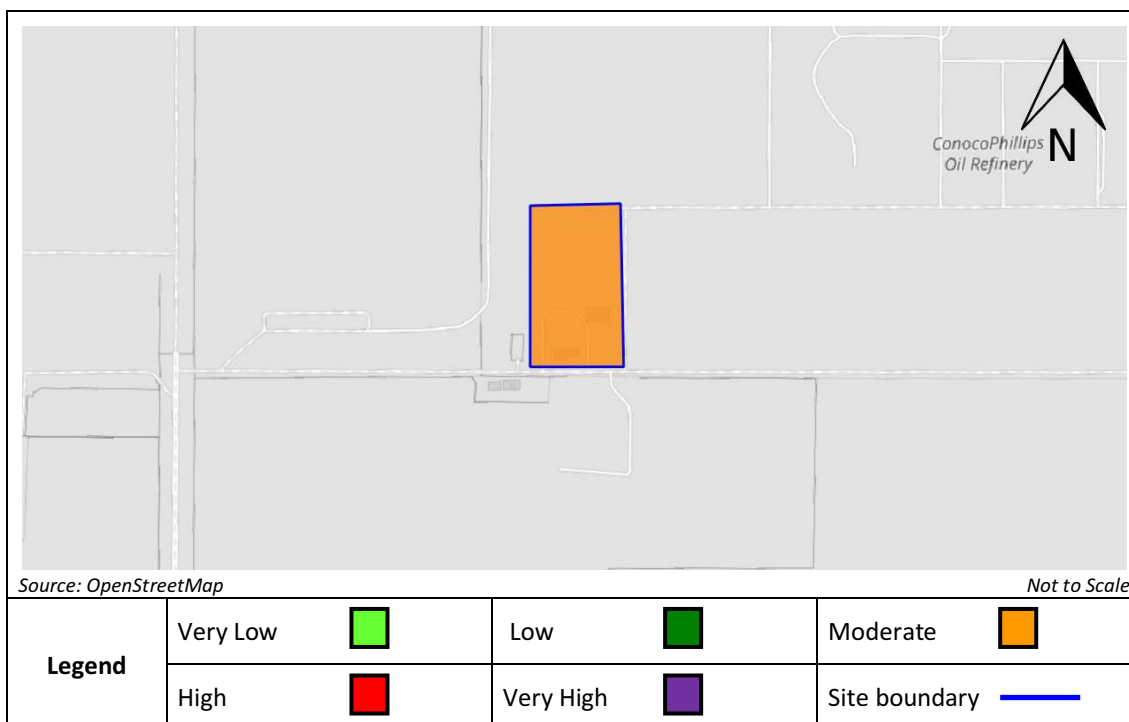
The range had a danger area radius of approximately 550yds, encompassing the Site.

There is the potential for practice and live bombs to have fallen on the Site during operations at the range.

Given this, it is considered that the Site has a moderate UXO hazard level, as shown in the following Figure, reproduced as Figure 5 in the main report.

The UXO hazard zone plan of the Site is also given in the accompanying P14872-24-R1-MAP01-A.

UXO hazard zone plan of the Site



It is understood that after WWII, the Site and surrounding area was reclaimed with pumped sediments and substantial amounts of Made Ground, which locally exceeded 4-5 metres (m) below ground level (bgl).

It is considered that within post-WWII Made Ground on the Site, the UXO hazard level can be reduced to low.

The main findings of the report are summarised below.

- During WWII the Seal Sands practice bombing range was established on land encompassing the Site. The range target area was located in close proximity to the Site. It was disused post-WWII.
- During WWII 1No. C Series bombing decoy was established at Seal Sands, within approximately 1km west of the Site. It was designed to deflect bombing from Middlesbrough. Records indicate that it was successfully bombed on at least 5No. occasions.
- Other targets in the vicinity of the Site included docks and shipyards along the River Tees, major transport infrastructure, metal, chemical and engineering works.
- Records have been found indicating that at least 10No. HE bombs fell on the Seal Sands mudflats during WWII, in the immediate vicinity of the Site. 4No. of these were recorded as UXBs.
- Estimated average maximum bomb penetration depths on the Site during WWII ranged from 7.5m to 20.0m depending on the weight of the bomb.
- There were 19No. Heavy Anti-Aircraft (HAA) and Rocket AA (ZAA) batteries within 10km of the Site during WWII. The potential for an Unexploded AA (UXAA) shell to have fallen on the Site cannot be discounted.

Proposed works

It is understood that works on the Site are associated with construction of a new plant to house 20No. gas conversion engines, with supporting buildings and infrastructure.

Initial ground investigations will include 6No. boreholes down to bedrock. Future works will include excavations and piling.

Risk assessment

The Table below, reproduced as Table 3 in the main report, provides a UXO risk assessment for the proposed works on the Site.

Further details on the risk assessment methodology are given in Section 7.2 of the main report.

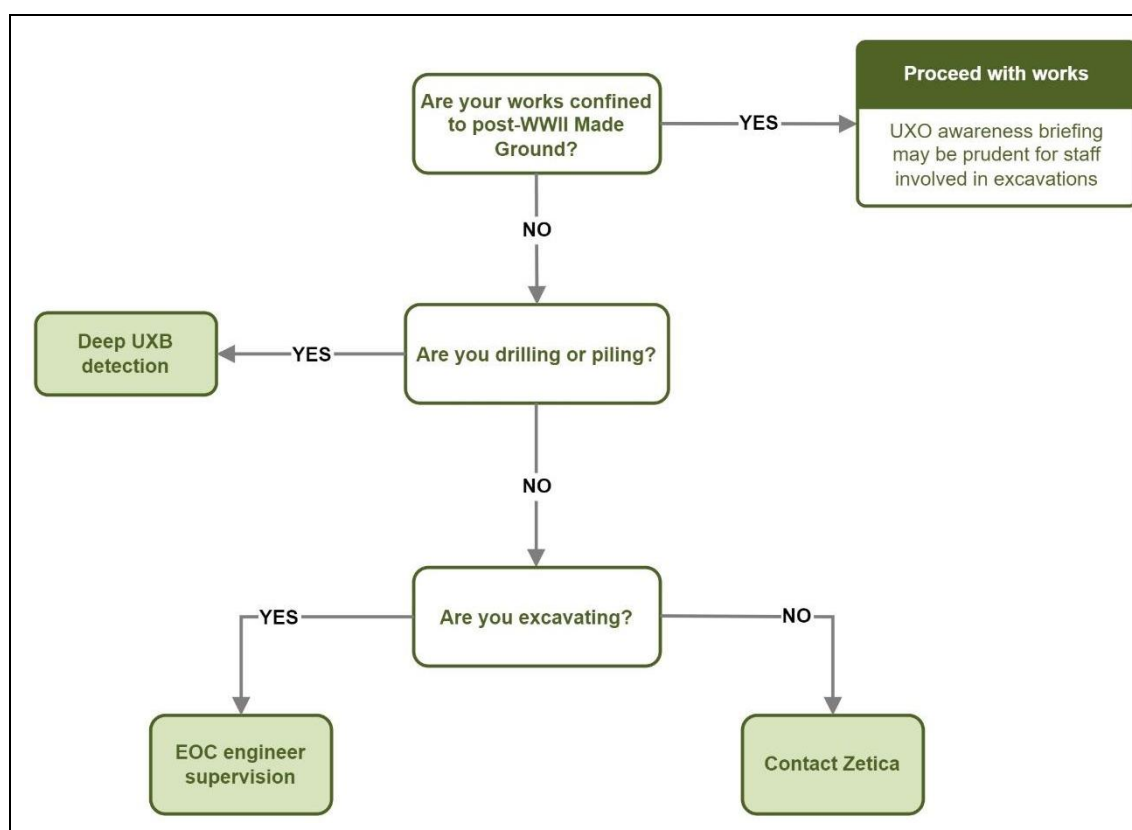
UXO risk assessment for the Site

Potential UXO Hazard	Anticipated Works	PE	PD	P = PE x PD	Likelihood	Severity	Risk Rating	UXO Risk
UXB	Excavations within post-WWII MG	1	1	1	1	5	5	Low
	Excavations beneath post-WWII MG	3	3	9	3	5	15	Moderate
	Boreholes/Piling	2	4	8	3	4	12	Moderate
Practice bombs	Excavations within post-WWII MG	1	1	1	1	4	4	Low
	Excavations beneath post-WWII MG	2	2	4	2	4	8	Moderate
	Boreholes/Piling	2	2	4	2	3	6	Moderate
Other UXO	Excavations within post-WWII MG	1	1	1	1	4	4	Low
	Excavations beneath post-WWII MG	1	1	1	1	4	4	Low
	Boreholes/Piling	1	1	1	1	3	3	Low
PE (Probability of Encounter), PD (Probability of Detonation), P (Overall Probability)								
MG – Made Ground								
Post-WWII Made Ground thickness on the Site understood to be >4.0m.								

Risk mitigation plan

The Figure below, reproduced as Figure 6 in the main report, provides a risk mitigation plan to ensure that the UXO risk for the proposed works is reduced to As Low As Reasonably Practicable (ALARP).

Recommended risk mitigation plan for the Site



Further details on the recommended risk mitigation techniques are given in Section 8.2 of this report.

The Table below, reproduced as Table 4 in the main report, summarises the UXO risk for proposed works on the Site and recommended actions.

Summary of UXO risk and mitigation recommendations

Proposed Works	UXO Risk	Recommended Mitigation
Works within post-WWII Made Ground		Proceed with works – a UXO awareness briefing is prudent for staff involved in excavations.
Excavations		EOC Engineer Supervision – to ensure safety and minimise delays, EOC Engineer supervision is recommended.
Boreholes/Piling		Deep UXB detection – to clear borehole and pile locations of potential UXB, an intrusive magnetometer survey should be undertaken until either the maximum bomb penetration or maximum drilling/piling depth is reached.

In summary, we recommend that deep UXB detection is undertaken as part of borehole or pile construction to ensure the safety of those working in the area.

For excavations below post-WWII Made Ground, EOC engineer supervision is recommended.

What do I do next?

If you wish to proceed with UXO risk mitigation, contact us and we can help.

	01993 886682		uxo@zetica.com		zeticauxo.com
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If you have requirements to identify other buried hazards (such as mapping utilities or obstructions) we can provide these surveys.

If proposed works on the Site change, or additional works are planned, contact Zetica for a re-assessment of the UXO risk and the risk mitigation requirements.

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Accompanying GIS data

P14872-24-R1-MAP01-A (UXO Desk Study)

ABBREVIATIONS

AA	Anti-Aircraft
ALARP	As Low As Reasonably Practicable
AM	Air Ministry
AP	Anti-Personnel
ARP	Air Raid Precaution
AXO	Abandoned Explosive Ordnance
BGS	British Geological Survey
CIRIA	Construction Industry Research and Information Association
DCLG	Department of Communities and Local Government
EO	Explosive Ordnance
EOC	Explosive Ordnance Clearance
EOR	Explosive Ordnance Reconnaissance
ERW	Explosive Remnants of War
ESA	Explosive Substances and Articles
HAA	Heavy Anti-Aircraft
HE	High Explosive
HER	Historic Environment Record
IB	Incendiary Bomb
IWM	Imperial War Museum
LAA	Light Anti-Aircraft
MoD	Ministry of Defence
NARA	National Archives & Records Administration
NCAP	National Collection of Aerial Photography
OB	Oil Bomb
OSNGR	Ordnance Survey National Grid Reference
OTU	Operational Training Unit
PM	Parachute Mine
RAF	Royal Air Force
RE	Royal Engineers
RLG	Relief Landing Ground
RNAS	Royal Naval Air Station
UD	Urban District
UXAA	Unexploded Anti-Aircraft
UXB	Unexploded Bomb
UXIB	Unexploded Incendiary Bombs
UXO	Unexploded Ordnance
WO	War Office
WWI	World War One
WWII	World War Two
ZAA	Rocket Anti-Aircraft

UXO DESK STUDY & RISK ASSESSMENT

Please read: Zetica has colour coded each paragraph. Paragraphs with black text on a white background provide site-specific information or information specifically researched as part of this project.

Boxed paragraphs in a dark green text with a green background provide general information and, where appropriate, links to online resources giving further detail. These are all available at www.zeticauxo.com. If you cannot gain access to these resources, Zetica can forward them on request.

1 INTRODUCTION

1.1 Project outline

Zetica Ltd was commissioned by Conoco Philips to carry out a detailed Unexploded Ordnance (UXO) Desk Study and Risk Assessment for an area of approximately 2.1 hectares (ha) at the Conoco Philips Teesside Works at Seal Sands, County Durham (the 'Site').

The aim of this report is to gain a fair and representative view of the potential UXO hazard on or affecting the Site in accordance with the Construction Industry Research and Information Association (CIRIA) C681 'Unexploded Ordnance (UXO), a Guide for the Construction Industry'.

Where appropriate, this hazard assessment includes:

- Likelihood of ordnance being present.
- Type of ordnance (size, filling, fuze mechanisms).
- Quantity of ordnance.
- Potential for live ordnance.
- Probable location.
- Ordnance condition.

It should be noted that some military activity providing a source of UXO hazard may not be recorded and therefore there cannot be any guarantee that all UXO hazards affecting the Site have been identified in this report.

1.2 Sources of information

Zetica Ltd researched the World War One (WWI)/World War Two (WWII) bombing and military history of the Site and its surrounding area using a range of information sources. The main sources of information are detailed in the following sections and referenced at the end of this report.

1.2.1 Zetica Ltd records

Zetica Ltd's in-house records were consulted, including the Zetica Ltd bomb risk maps (<https://zeticauxo.com/guidance/risk-maps/>), previous requests for information from government bodies, reference books, and archive materials from past work in the region.

Relevant documents have been cited in the bibliography of this report.

1.2.2 Historical records, maps, and drawings

Numerous reference documents including historical maps, aerial photographs and drawings have been consulted from sources such as the National Archives, the US National Archives & Records Administration (NARA), the Imperial War Museum (IWM), Historic England, National Collection of Aerial Photography (NCAP), the Defence of Britain Project, and relevant archaeological bodies.

The British Geological Survey (BGS) was consulted for borehole information.

1.2.3 Local records

Middlesborough Council, Durham County Council, North Yorkshire County Record Office, Durham County Record Office, Teesside Archives, Middlesborough Central Library, local historical groups, and the Middlesborough Historic Environment Record (HER) and County Durham HER were consulted for records.

1.3 Data confidence level

In general, there is a high level of confidence in the researched information sources used for this report. Further detail is given in the text of the report where appropriate.

It should be noted that some WWII Air raid Precaution (ARP) records for Billingham Urban District (UD) do not give detailed locations of where bombs fell, often only stating that 'bombs fell on Seal Sands'.

Other evidence (including bomb census maps and newspaper reports) have used to gain corroborative assessment of the potential UXO hazard on the Site.

Definitions of data confidence level		
Data Confidence Level		Definition
	Low	There are very few sources of information, and/or those available are lacking in detail.
	Moderate	There is a limited range of available sources of information, a key source of information is missing, and/or some sources may be contradictory or lacking in detail.
✓	High	There is a wide range of available sources of information, which are detailed and corroborate each other.

2 THE SITE

2.1 Site location

The Site is centred on Ordnance Survey National Grid Reference (OSNGR) NZ 527249. It is located approximately 5.6km northeast of central Middlesbrough.

The Site comprises open ground, hardstanding, and several industrial buildings at the Conoco Philips Teesside Works. It is bounded on all sides by the Conoco Philips Teesside Works.

Figure 1 is a Site location map and Plate 1 is a recent aerial photograph of the Site.

Figure 1 Site location map

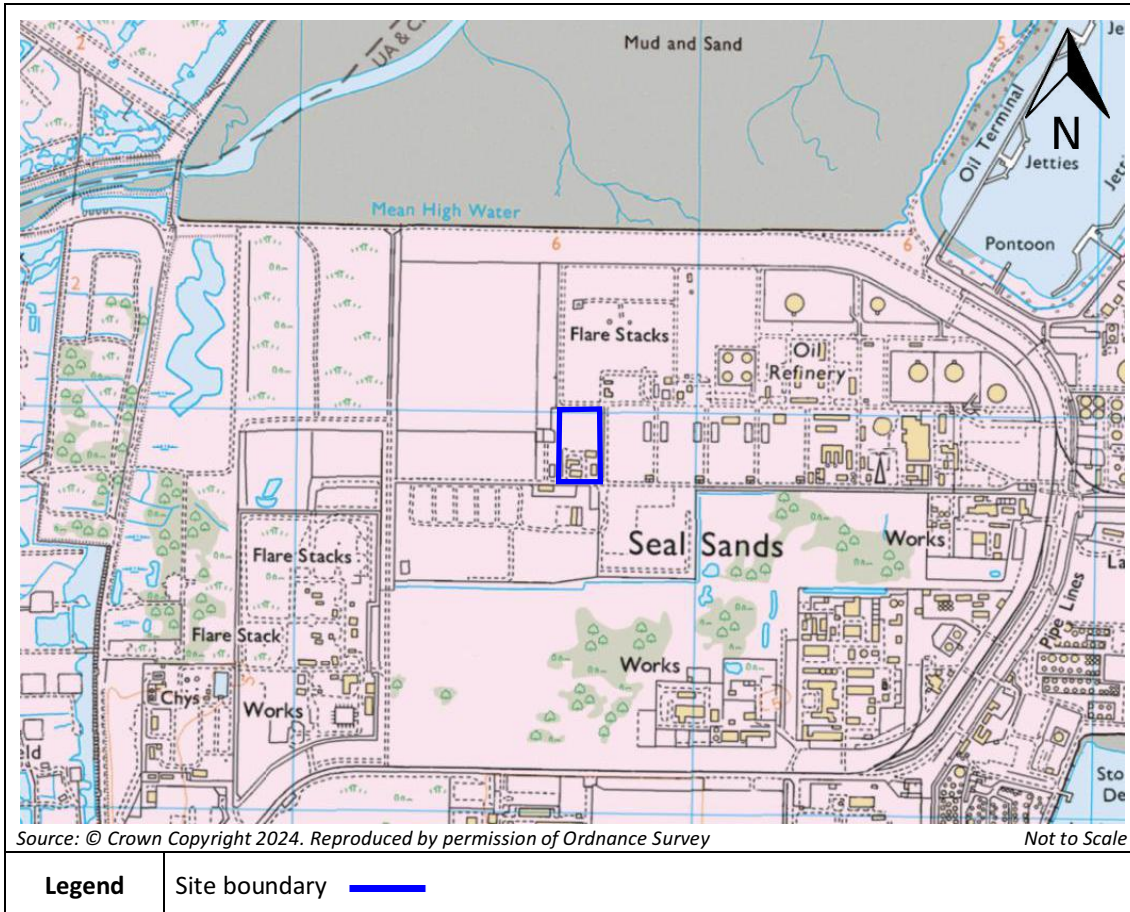
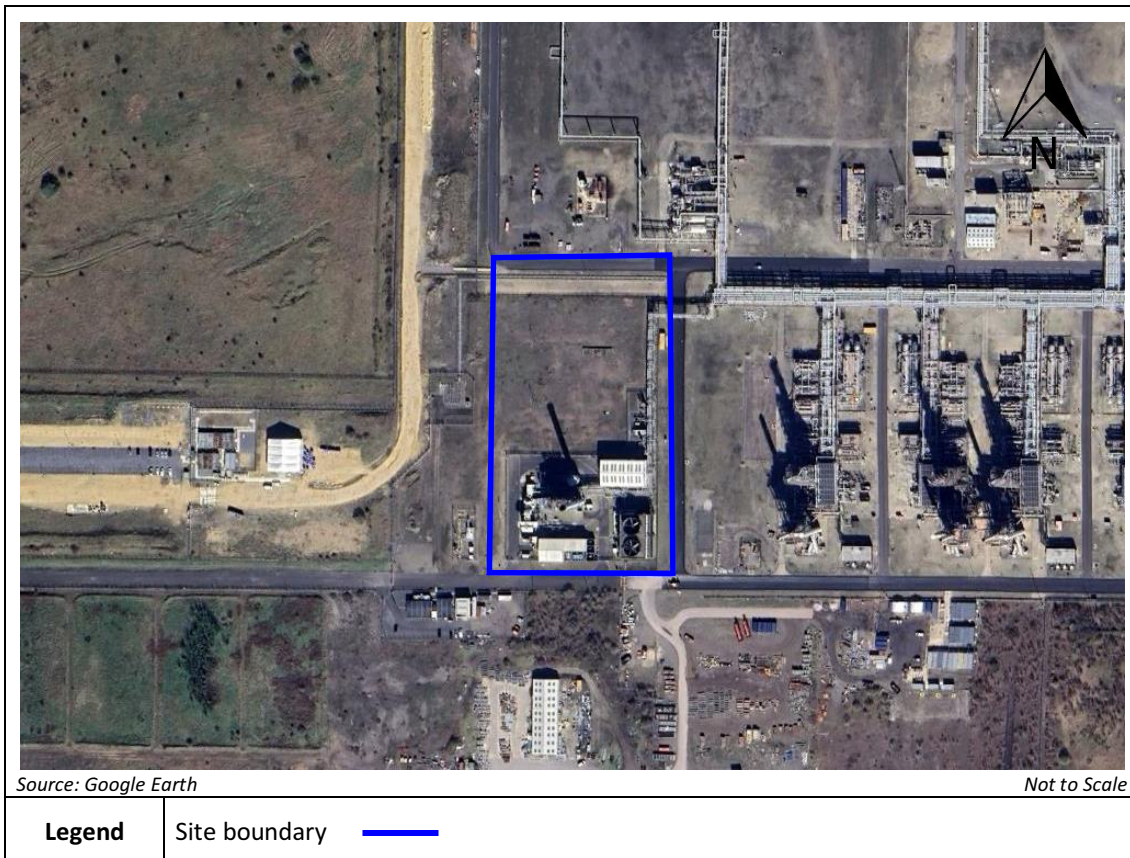


Plate 1 Recent aerial photograph of the Site

2.2 Site history

During World War Two (WWII) the Site comprised the Seal Sands mudflats as part of the River Tees Estuary.

It is understood that after WWII, the Site and surrounding area was reclaimed with pumped sediments and substantial amounts of Made Ground, which locally exceeded 4-5 metres (m) below ground level (bgl).

It should be noted that the origin of the fill material is unknown. The possibility that UXO was transported onto the Site during the post-war infilling process cannot be totally discounted.

3 MILITARY ACTIVITY

The following sections outline the recorded military activity on and in the vicinity of the Site. The potential UXO hazard from WWI and WWII bombing is detailed in Section 4.

3.1 Firing ranges and military training areas

For further information on firing ranges and military training areas, and the potential UXO hazards associated with them, follow the links below:

- [Artillery Ranges](#)
- [Bombing Ranges](#)
- [Military Training Areas](#)
- [Small Arms Ranges](#)

During WWII the Seal Sands Practice Bombing Range was established on land encompassing the Site. A brief operational history is given below.

3.1.1 Seal Sands Practice Bombing Range

Prior to the start of WWII, the Seal Sands mudflats, encompassing the Site, were requisitioned by the Air Ministry (AM) for use as a practice bombing range.

The range was designated for use by Royal Air Force (RAF) Coastal Command. Between 1941 and 1943 the Seal Sands Practice Bombing Range was used for target practice by aircraft of No. 6 (Coastal) Operational Training Unit (OTU), before being used by No. (Coastal) OTU from 1943. These units were based at RAF Thornaby, approximately 10.9km southwest of the Site.

The aircraft employed at Seal Sands were primarily light bomber aircraft, such as the Lockheed Hudson and maritime-equipped Avro Anson.

Figure 2 is an extract from a map showing the approximate location of the Seal Sands Practice Bombing Range, encompassing the Site, dating from WWII.

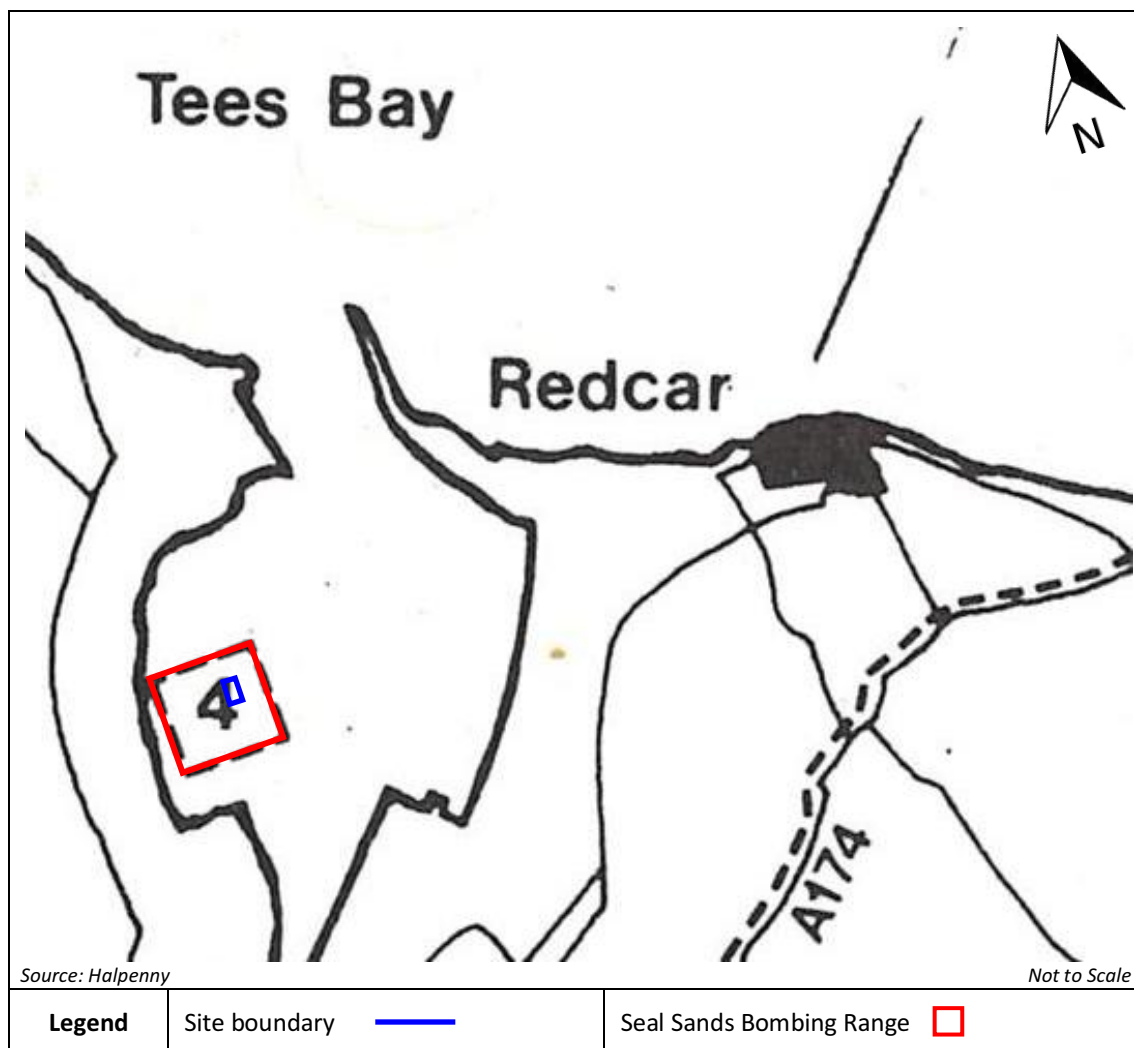
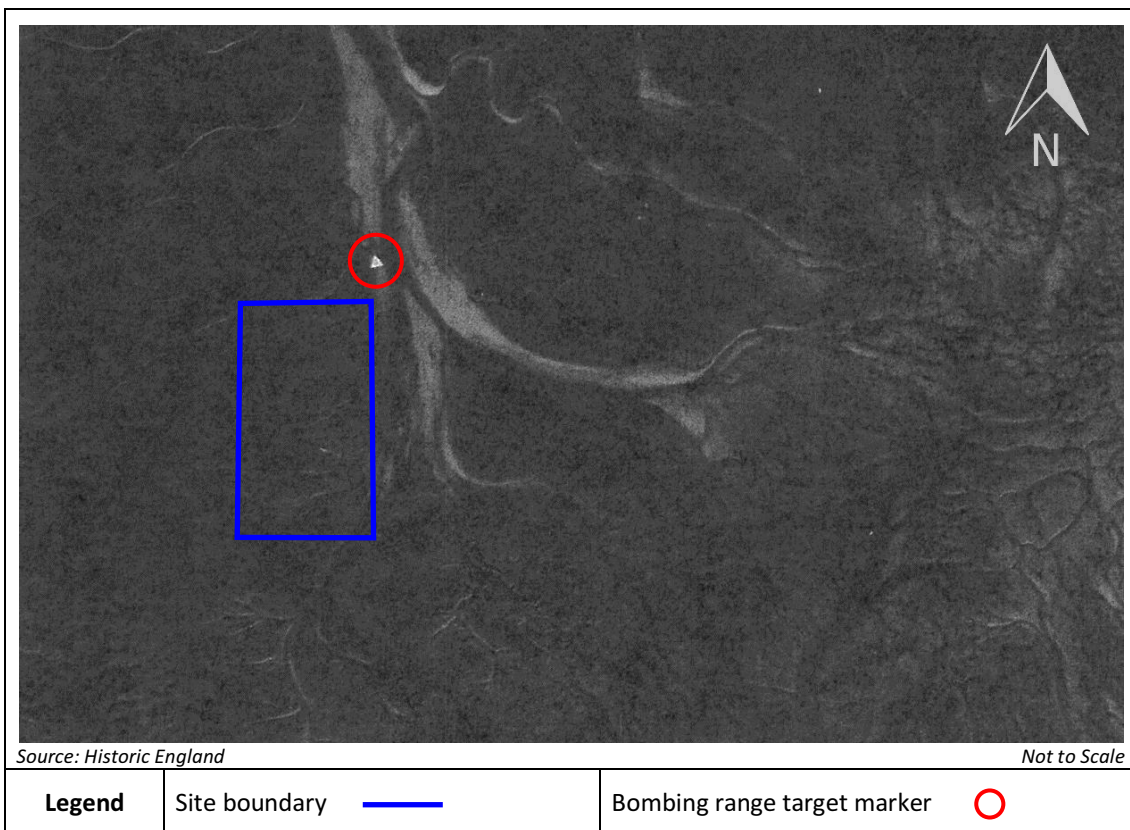
Figure 2 Map of the Seal Sands Practice Bombing Range, WWII

Plate 2 is an aerial photograph of Seal Sands, dated the 13th November 1946. This identifies a range target marker (NZ 527250), approximately 40m north-northwest of the Site.

Plate 2 Aerial photograph of the Seal Sands Practice Bombing Range, 13th November 1946

The range is likely to have had an approximately 500-yd danger area and the targets would have been moved around the range for operational purposes.

The operational duration of the Seal Sands practice bombing range is unknown.

Potential UXO Hazard

The Site was located in close proximity to the bombing range target area where the heaviest concentration of practice bombing would have occurred.

Given the inaccuracy of training pilots, it is also possible that some bombs fell outside of the designated danger zones or range boundary.

The most likely ordnance to remain on the Site is WWII practice bombs, in addition to associated target illumination devices for night practice. Such ordnance is likely to be shallow buried (<1.0m deep).

It should be noted that wartime ranges designated for practice bombing were sometimes used for live practice. Any live Unexploded Bombs (UXBs) are likely to be buried at greater depths than practice bombs.

It should be noted that the UXO hazard level is considered to be low within the post-WWII Made Ground on the Site, which locally exceeded 4-5m bgl (see Section 2.2).

3.2 Defences

For further information on military defences, and the potential UXO hazards associated with them, follow the links below:

- [Anti-Aircraft Guns](#)
- [Anti-Invasion Defences](#)
- [Barrage Balloons](#)
- [Bombing Decoys](#)
- [Home Guard](#)
- [Mined Locations](#)
- [Mortar & Gun Emplacements](#)
- [Pillboxes](#)

The nearest military defences to the Site are described below.

3.2.1 Bombing decoys

During WWII, 1No. Civil QL/QF (C2c) bombing decoy was located at Seal Sands, within approximately 1km west of the Site. The decoy was constructed on the landward side of the then existing seawall, with some elements encroaching on the adjacent mudflats, in the vicinity of the Site.

The Seal Sands bombing decoy was constructed to replicate the features of the iron and steel works at Cargo Fleet, Port Clarence and Cleveland, within approximately 3.1km southeast of the Site. It was active from after the first bombing raids in 1942 until the end of WWII.

2No. additional bombing decoys were also established in the vicinity of the Site to divert enemy bombing from strategic targets in the area. This included the Greenabella Decoy (NZ 514261), approximately 2.2km northwest of the Site, and the Bran Sands Decoy (NZ 559236), approximately 2.8km east of the Site.

Records indicate that these decoys were successful on at least 5No. occasions during several raids between 1942 and 1943 (see Section 4.2).

Post-WWII the Seal Sands Decoy was returned to salt marsh. By 1972 the land had been developed as a salt works.

Potential UXO Hazard

Bombs falling on the landward side of the Seal Sands Decoy are likely to have been recorded. Any UXB falling on the mudflats, encompassing the Site, are less likely to have been recorded or removed given the difficulty of reaching the bomb and the fact that it would not have provided any imminent danger to the population or industry.

Raids on the Seal Sands Decoy are considered to provide a potential source of UXO hazard to the Site (see Section 4.2).

3.2.2 Anti-Aircraft (AA) guns

Records indicate that during WWI there were 6No. Anti-Aircraft (AA) gun batteries within 10km of the Site. The nearest was located at Bran Sands (NZ 550261), approximately 2.5km northeast of the Site. It was armed with 1No. 3" gun.

Records indicate that during WWII there were at least 19 No. Heavy AA (HAA) and Rocket AA (ZAA) batteries within 10km of the Site. The nearest was located at Gratham (NZ 509265), approximately 2.3km northwest of the Site. Its armaments are unknown.

Potential UXO Hazard

Given the number of AA gun batteries in the surrounding area, the potential for an Unexploded AA (UXAA) shell to have fallen on the Site unnoticed, whilst unlikely, cannot be totally discounted.

3.3 Military airfields

For further information on military airfields, and the potential UXO hazards associated with them, follow the link below:

- [Military Airfields](#)

No records of any military airfields on or in close proximity to the Site have been found.

During WWI the nearest operational airfield was Royal Naval Air Station (RNAS) Seaton Carew II approximately 1.8km north of the Site. It was opened in October 1917 as a seaplane base for No. 252 Squadron, flying anti-submarine patrols over the North Sea. It was closed in March 1919 and has since been redeveloped for industrial use.

During WWII the nearest operational airfield was RAF Greatham, approximately 3.3km northwest of the Site. Originally opened in 1933 as a training airfield, during WWII it served as a Relief Landing Ground (RLG) for RAF Thornaby, approximately 10.9km southwest of the Site. Post WWII, RAF Greatham was decommissioned. It was subsequently redeveloped as a factory complex.

Military airfields are not considered to provide a source of UXO hazard to the Site.

3.4 Aircraft crashes

For further information on military aircraft crashes, and the potential UXO hazards associated with them, follow the link below:

- [Aircraft Crashes](#)

No records of any aircraft crashes on or in close proximity to the Site have been found.

3.5 Explosives factories, munitions depots, and disposal areas

For further information on explosives factories, munitions depots and disposal areas, and the potential UXO hazards associated with them, follow the links below:

- [Explosives Factories](#)
- [Munitions Depots](#)
- [Munitions Disposal Areas](#)

No records of any explosives factories, munitions depots or munitions disposal areas on or in close proximity to the Site have been found.

4 BOMBING

4.1 WWI bombing

For further information on WWI bombing in the UK, and the potential UXO hazard associated with it, see Appendix 2.3 or use the following link.

- [WWI Bombing](#)

No records have been found indicating that the Site was bombed during WWI.

4.2 WWII bombing

For further information on WWII bombing in the UK, and the potential UXO hazard associated with it, see Appendix 2.4 or use the following link.

- [WWII Bombing](#)

Records indicate that Seal Sands, encompassing the Site, was bombed during WWII. Further details on bombing in the vicinity of the Site are given in the following sections.

4.2.1 Bombing in Middlesbrough

The first raid against an industrial target in Britain occurred in May 1940, when the Cargo Fleet Iron Works at South Bank, Middlesbrough was bombed.

The Teesside region was bombed on several occasions during WWII. Between 1939 and 1945 at least 473No. High Explosive (HE) bombs and many more Incendiary Bombs (IBs) were dropped in the area during 107No. air raids.

Bombing was most concentrated in Middlesbrough and Billingham, particularly the docks, metal works, and Imperial Chemical Industries (ICI) works.

Bombing in the vicinity of the Site was mostly due to the success of the Seal Sands bombing decoy (see Section 3.2.1) attracting enemy bombers.

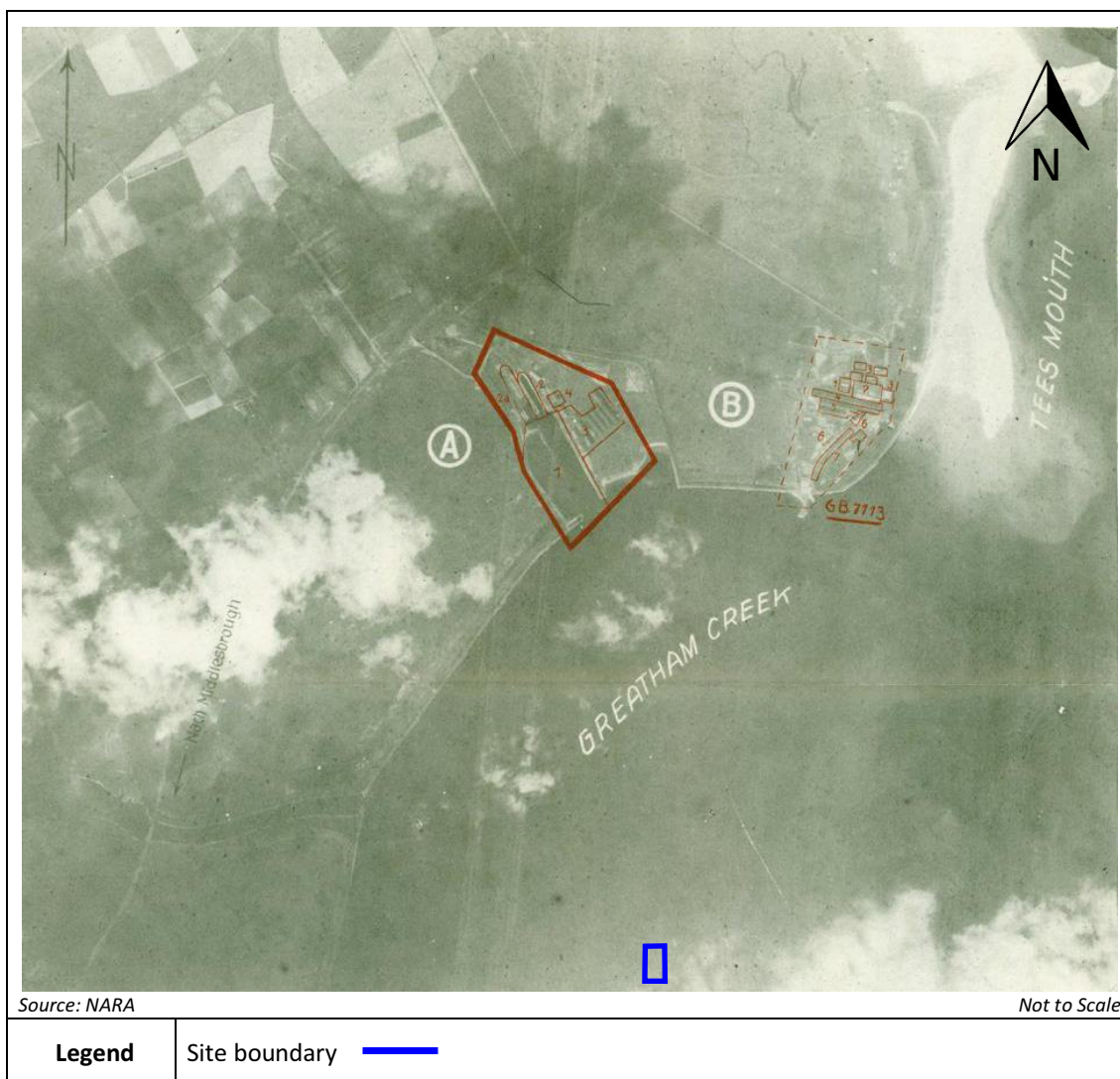
It should be noted that bombs falling in more remote areas, such as estuaries and marshland, were more likely to be missed. As a result, bombing records in those areas are likely to be under-recorded.

4.2.2 Strategic targets

From prior to the declaration of war in 1939, Britain was subjected to reconnaissance flights by the Luftwaffe which was building up a photographic record of potential targets.

The Site was located in an area which contained numerous strategic targets, including docks and shipyards along the River Tees, Redcar Iron Works, and RAF Greatham.

Plate 3 is a Luftwaffe target photograph of Greatham Creek, dating from WWII. This shows Graythorp Shipyard (Target A) and Central Zinc Works (Target B), approximately 1.9km north of the Site.

Plate 3 Luftwaffe target photograph of Greatham Creek, WWII

4.2.3 Bombing densities and incidents

Table 1 gives details of the overall bombing statistics recorded for the Local Authority Districts of the Site (highlighted by bold text) and surrounding districts. These were categorised as Rural Districts (RD), Urban Districts (UD), Municipal Boroughs (MB), Metropolitan Boroughs (MetB), and County Boroughs (CB). WWII bomb density levels are defined below:

<5 bombs per 405ha is a Very Low regional bombing density.

5-15 bombs per 405ha is Low.

15-50 bombs per 405ha is Moderate.

50-250 bombs per 405ha is High.

>250 bombs per 405ha is Very High.

Official UK bombing statistics have been compiled from both British and German sources. There were differences in the way the figures were originally reported and collated which has led to discrepancies in the summary data.

Note that Table 1 excludes the figures for IBs. Discrepancies between the below list and other records, such as bomb clearance records, demonstrate that this data is likely to under-represent actual bombing.

Table 1 Bombing statistics

Area	Bombs Recorded				Bombs per 405ha (1000 acres)
	High Explosive	Parachute Mines	Other	Total	
Billingham UD	218	3	0	221	28.1
Eston UD	120	1	0	121	24.1
Middlesborough CB	128	2	2	132	18.5
Redcar MB	71	2	0	73	14.5
Stockton-on-Tees MB	56	0	0	56	10.2
Stockton RD	145	7	0	152	3.7

It should be noted that during WWII, many Unexploded Bombs (UXBs) were mapped and subsequently removed as and when conditions and demands on Bomb Disposal teams allowed. Their removal was not always accurately recorded and sometimes records were later destroyed. In practice, most UXBs were probably removed and only a much smaller number were actually registered as officially abandoned bombs.

Details of the nearest recorded bombing incidents to the Site are given in the following section.

3rd September 1940

8No. HE bombs fell in the River Tees, north of Grangetown, within approximately 1.8km southeast of the Site.

24th October 1940

HE bombs (number unspecified) fell on open ground near the Grangetown HAA battery, approximately 2.4km southeast of the Site.

11th July 1941

2No. HE bombs fell on marsh land to the south of Redcar Wharf, approximately 2.2km east of the Site.

20th August 1941

5No. HE bombs fell on the Teesport foreshore, within approximately 2.3km south-southeast of the Site.

7th November 1941

3No. HE bombs fell in the River Tees, north of Grangetown, within approximately 1.5km southeast of the Site.

6th July 1942

3No. HE bombs fell on Seal Sands, near the Sea Wall, approximately 0.7km west of the Site.

16th October 1942

6No. IBs fell on Seal Sands, within approximately 1.2km west-southwest of the Site. 2No. of these were recorded as Unexploded IBs (UXIBs).

11th March 1943

2No. IBs fell on Seal Sands, within approximately 1.3km west of the Site.

3No. HE bombs fell on Seal Sands, within approximately 1.3km west of the Site. They were all recorded as UXBs.

22nd March 1943

2No. 1000kg HE bombs fell near Greatham Creek, approximately 1.3km west of the Site. 1No. was recorded as an UXB.

8th July 1943

2No. Parachute Mines (PM) fell on Seal Sands, within approximately 0.2km southeast of the Site.

Figure 3 is a map showing the approximate location of recorded bomb impacts in the immediate vicinity of the Site. IBs shown are indicative of larger numbers of similar devices that fell within the given area.

The map has been compiled from different sources, including air raid incident reports, historical aerial photographs, and bomb census maps.

The bomb map is also given in the accompanying P14872-24-R1-MAP01-A.

Figure 3 Compiled bomb impact map for the vicinity of the Site

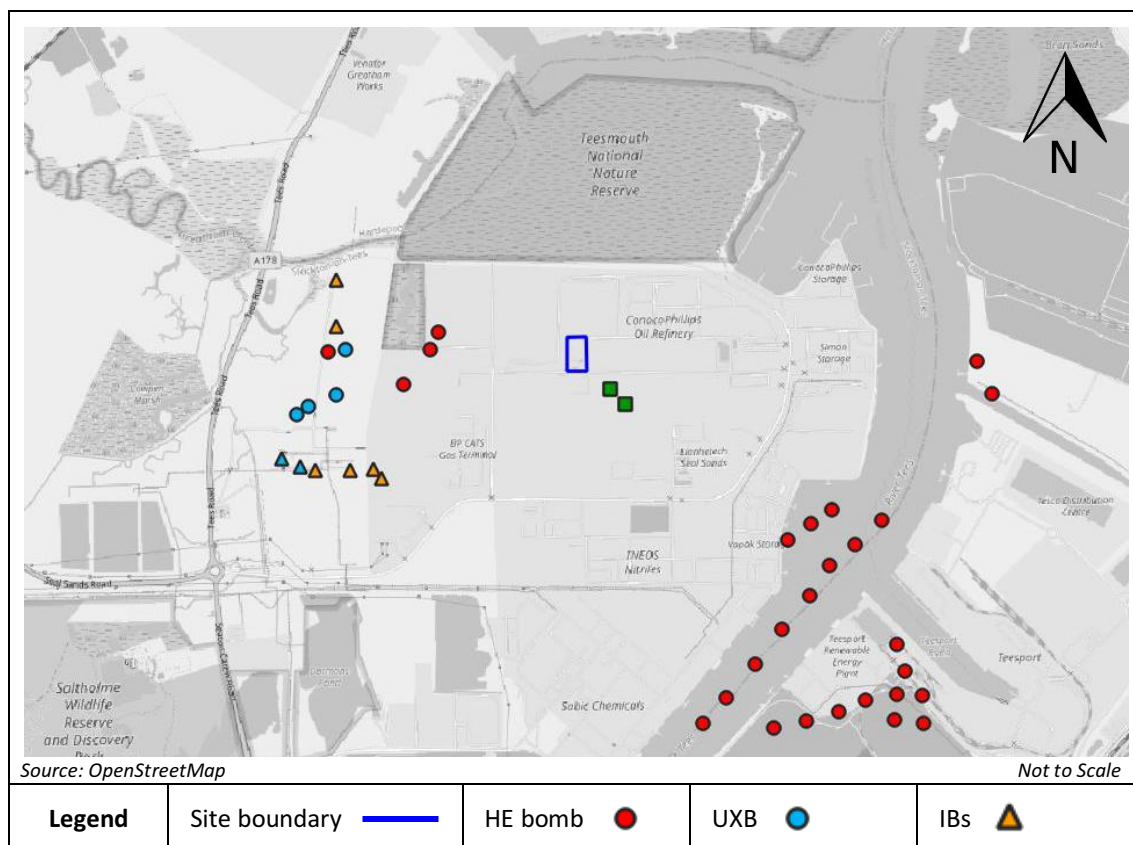
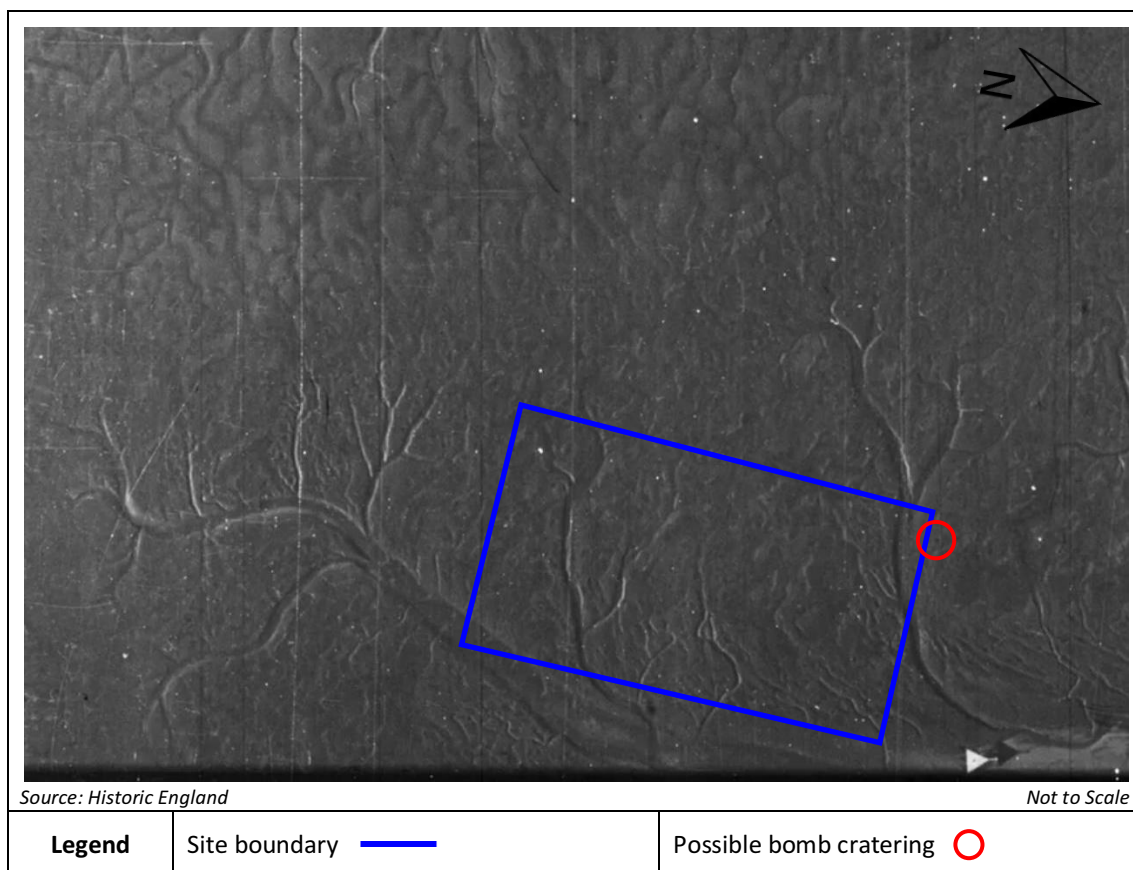


Plate 4 is an aerial photograph dated the 13th November 1946. No cratering has been identified on the Site. A possible crater has been identified adjacent to the north of the Site.

It should be noted that in marshland, bomb impact features are often difficult to distinguish due to deeper penetration and the development of camouflages.

The Seal Sands Practice Bombing Range target marker is also visible to the east of the Site (see Section 3.1.1).

Plate 4 Aerial photograph, 13th November 1946

Potential UXO hazard

During WWII the Site was encompassed by the Seal Sands mudflats, close to a successful bombing decoy (see Section 3.2.1). Records have been found indicating that at least 10No. bombs fell on the mudflats over several raids.

Aerial photographs indicate possible bomb cratering in the immediate vicinity of the Site, and the localised bombing density was high.

Given that the unoccupied mudflats would not have been subject to regular inspection, there is the potential for an UXB to have fallen unnoticed on the Site.

WWII bombing is considered to provide a possible source of UXO hazard to the Site.

4.2.4 Abandoned bombs

No records have been found indicating that any officially abandoned bombs are located on the Site.

4.2.5 Bomb penetration depths

At the time of writing, no Site-specific ground investigation data was provided.

BGS 1:50,000 Sheet 33 (Bedrock & Superficial) and BGS borehole records from nearby investigations have been consulted to get an indicative overview of the Site geology.

The WWII geology of the Site is understood to consist of Tidal Flats Deposits, over mudstone of the Mercia Mudstone Group.

Table 2 provides an estimate of average maximum bomb penetration depths for the Site assuming WWII ground conditions of 15m of saturated loose sand and soft clay, overlying 5m of stiff clay, overlying more than 20m of soft rock.

Table 2 Estimated average maximum bomb penetration depths

Estimated average bomb penetration depths for anticipated geology		
Bomb Weight	50kg	7.5m
	250kg	17.5m
	500kg	20.0m

These calculations can be refined on receipt of Site-specific information.

The estimated bomb penetration depths given in Table 2 are from the WWII ground level and are based on the following assumptions:

- a) High-level release of the bomb resulting in an impact velocity of 260m/s (>5,000m altitude).
- b) A strike angle of 10 to 15 ° to the vertical.
- c) That the bomb is stable, both in flight and on penetration.
- d) That no retarding units are fitted to the bomb.
- e) That the soil type is homogenous.

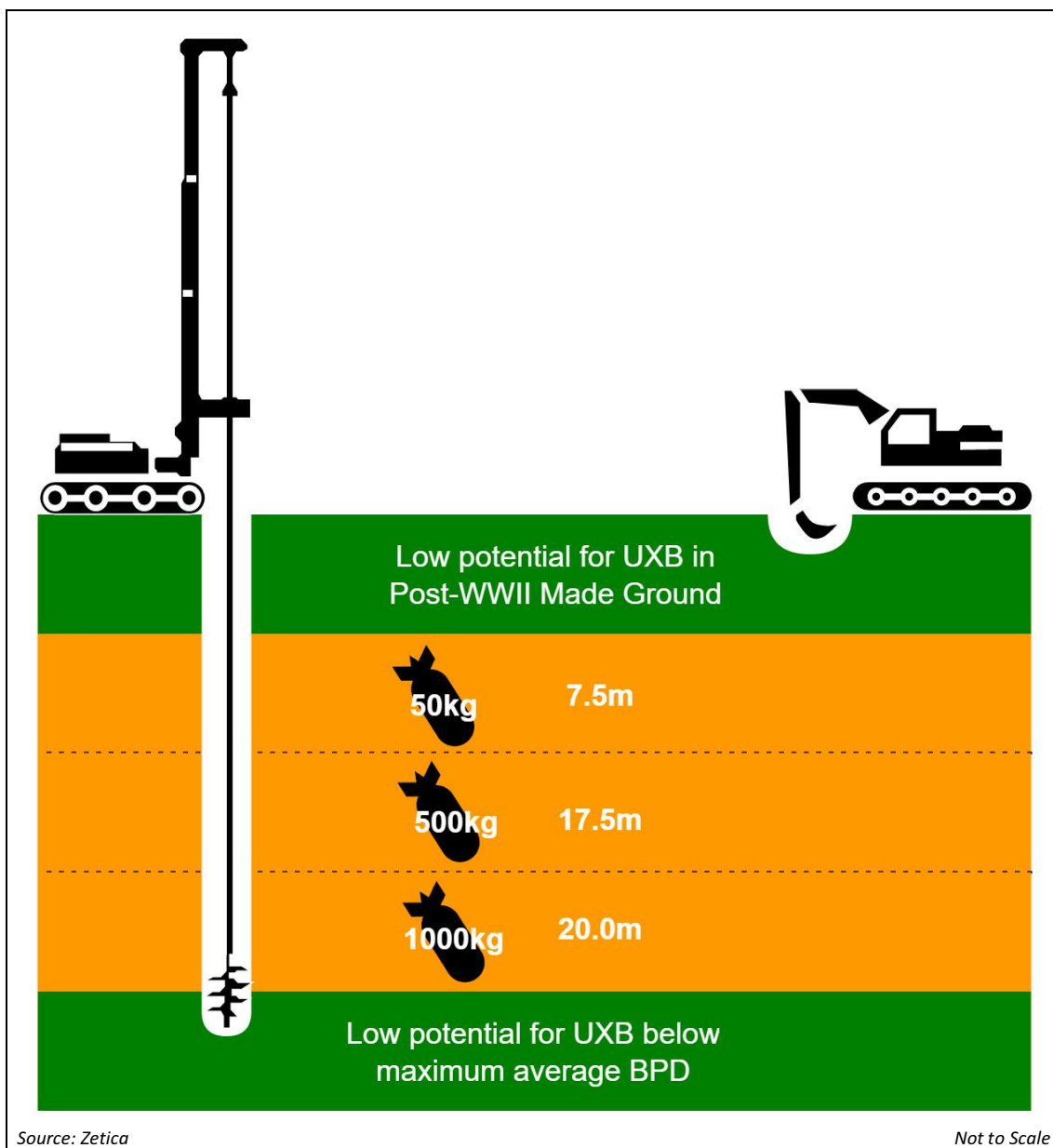
Assuming the above, a bomb will enter the ground and travel on the same trajectory until momentum is nearly lost. The bomb will then turn abruptly to the horizontal before coming to rest. The horizontal distance between the centre of the entry hole and the centre of the bomb at rest is known as the 'offset'. A marked horizontal movement from the original line of entry is common.

Low-level attacks may have an impact angle of 45° or more, which will frequently lead to a much greater amount of offset movement during soil penetration.

The average offset is one third of the penetration depth. If hardstanding or Made Ground were present during WWII, bomb penetration depths would have been significantly reduced but offset distances may have been up to four times greater.

Figure 4 demonstrates the potential burial setting for a UXB in the moderate hazard zone on the Site, based on the anticipated ground conditions and average maximum bomb penetration depth.

Figure 4 Potential burial setting of UXB on the Site



5 POST-WWII EXPLOSIVE ORDNANCE CLEARANCE (EOC) ACTIVITIES

Based on data from 1939 to 1945, War Office (WO) statistics indicate that 200,195No. HE bombs exploded within Great Britain. Additionally, 25,195No. HE bombs (approximately 11%) were recorded as UXBs. However, records from the Royal Engineers (RE) who were responsible for bomb disposal at the time indicate that by 27th February 1946, more than 45,000No. UXBs were disposed of.

On average, 8.5% of UXBs later self-exploded. In some cases, the bombs had delayed action fuzes or were never intended to explode, their purpose being to cause inconvenience and fear. Given the discrepancy in records and the fact that UXBs are still being found unexpectedly, it is clear that the original figures are understated and provide only an approximation of the number of potential UXBs in the UK.

WO statistics also show that between October 1940 and May 1941 most UXBs (93%) were either 50kg or 250kg. It should be noted that details of the recovery and size of the UXB were not always accurately reported.

The larger WWII UXBs are often difficult to recover due to both penetration depths and the presence of two or more fuzes, combined with more sensitive fillings of explosive mixtures including Amatol and Trialen.

5.1 EOC tasks

Zetica holds no records of post-WWII EOC tasks having taken place in the vicinity of the Site.

6 UXO HAZARD ASSESSMENT

6.1 UXO hazard level

Definitions of UXO Hazard Level for a Site	
Hazard Level	Definition
Very Low	There is positive evidence that UXO is not present, e.g. through physical constraints or removal.
Low	There is no positive evidence that UXO is present, but its occurrence cannot be totally discounted.
Moderate	There is positive evidence that ordnance was present or that other uncharted ordnance may be present as UXO.
High	There is positive evidence that UXO is present.
Very High	As high, but requires immediate or special attention due to the potential hazard.

WWII German Bombing (M1)

Records have been found indicating that at least 10 No. HE bombs fell on the Seal Sands mudflats during WWII, in the immediate vicinity of the Site.

Given the high localised bombing density and intensity of raids in the area, it is considered possible that an UXB may have fallen on the Site and gone unnoticed.

WWII Practice Bombing Range (M2)

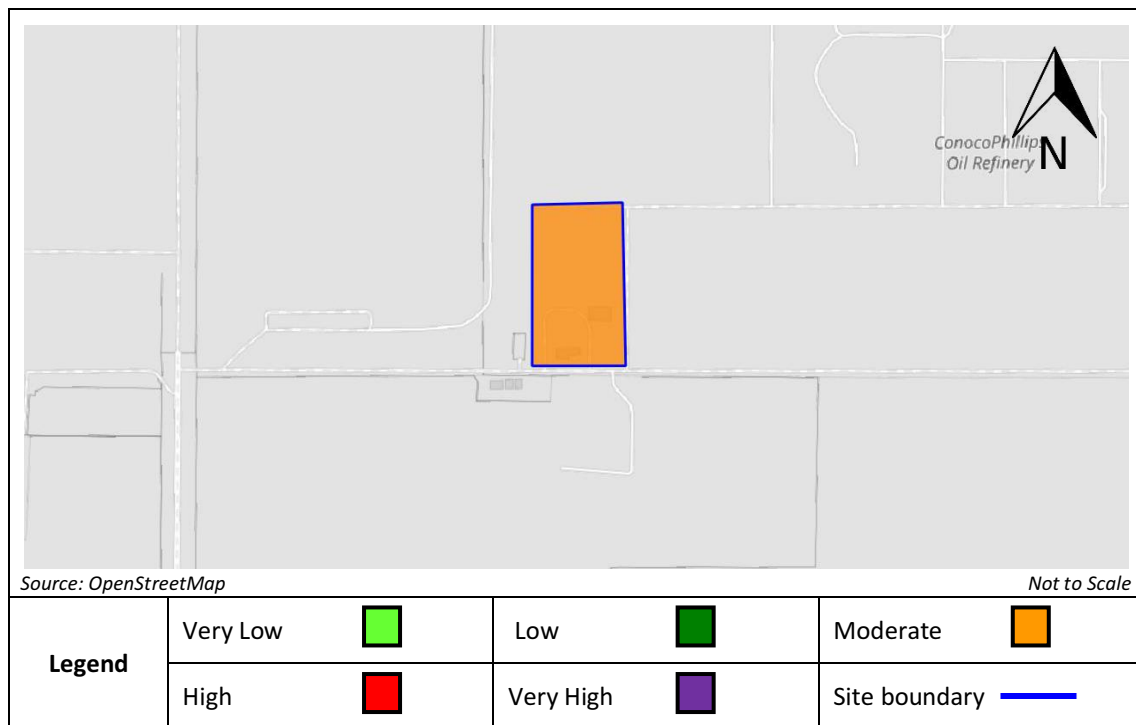
During WWII the Site was also located within the danger area of the Seal Sands practice bombing range. Although this was designated as a practice bombing range, it is known that live bombs were often used on such ranges during wartime.

The range had a danger area radius of approximately 550yds, encompassing the Site.

There is the potential for practice and live bombs to have fallen on the Site during operations at the range.

Given this, it is considered that the Site has a moderate UXO hazard level, as shown in Figure 5.

The UXO hazard zone plan of the Site is also given in the accompanying P14872-24-R1-MAP01-A.

Figure 5 UXO hazard zone plan of the Site

It is understood that after WWII, the Site and surrounding area was reclaimed with pumped sediments and substantial amounts of Made Ground, which locally exceeded 4-5m below ground level (bgl).

It is considered that within post-WWII Made Ground on the Site, the UXO hazard level can be reduced to low.

7 UXO RISK ASSESSMENT

7.1 Proposed works

It is understood that works on the Site are associated with construction of a new plant to house 20No. gas conversion engines, with supporting buildings and infrastructure.

Initial ground investigations will include 6No. boreholes down to bedrock. Future works will include excavations and piling.

7.2 Risk assessment methodology

A UXO risk assessment has been undertaken for the proposed works, taking into consideration the identified UXO hazard(s).

Firstly, the probability of encountering UXO (PE) has been considered and rated for the proposed construction techniques, as detailed below.

Probability of Encounter (PE)	Rating
Frequent, highly likely, almost certain.	5
Probable, more likely to happen than not.	4
Occasional, increased chance or probability.	3
Remote, unlikely to happen but could.	2
Improbable, highly unlikely.	1
Impossible	0

Secondly, the probability of detonating an item of UXO (PD) has been considered and rated for the proposed construction techniques, as detailed below.

Probability of Detonation (PD)	Rating
Frequent, highly likely, almost certain.	5
Probable, more likely to happen than not.	4
Occasional, increased chance or probability.	3
Remote, unlikely to happen but could.	2
Improbable, highly unlikely.	1
Impossible	0

Next, the probability of encountering and detonating the UXO (PE x PD) have been used to generate an overall likelihood rating (P).

P = PE x PD	LIKELIHOOD of Encounter and Detonation	Rating
21 to 25	Frequent, highly likely, almost certain.	5
16 to 20	Probable, more likely to happen than not.	4
6 to 15	Occasional, increased chance or probability.	3
2 to 5	Remote, unlikely to happen but could.	2
1	Improbable, highly unlikely.	1
0	Impossible	0
P ranges from 25, a certainty of UXO being encountered and detonated on the Site by engineering activity, to 0, a certainty that UXO does not occur on the Site and will not be detonated by engineering activity.		

The likelihood of encountering and detonating UXO during site works (P) is multiplied by the severity (S) of such an event occurring (P x S), to provide a risk level using the following matrix.

Severity (S)	Rating
Multiple fatalities	5
Major injury, long term health issues, single fatality.	4
Minor injury, short term health issues, no fatalities.	3
First aid case but no lost time or ill health.	2
Minor injuries, no first aid.	1
No injuries.	0

UXO Risk Matrix							
LIKELIHOOD (P)	SEVERITY (S)						
		5	4	3	2	1	0
	5	25	20	15	10	5	0
	4	20	16	12	8	4	0
	3	15	12	9	6	3	0
	2	10	8	6	4	2	0
	1	5	4	3	2	1	0
	0	0	0	0	0	0	0

7.3 UXO risk level

The UXO risk assessment for proposed works on the Site is given in Table 3.

Table 3 UXO risk assessment for the Site

Potential UXO Hazard	Anticipated Works	PE	PD	P = PE x PD	Likelihood	Severity	Risk Rating	UXO Risk
UXB	Excavations within post-WWII MG	1	1	1	1	5	5	Low
	Excavations beneath post-WWII MG	3	3	9	3	5	15	Moderate
	Boreholes/Piling	2	4	8	3	4	12	Moderate
Practice bombs	Excavations within post-WWII MG	1	1	1	1	4	4	Low
	Excavations beneath post-WWII MG	2	2	4	2	4	8	Moderate
	Boreholes/Piling	2	2	4	2	3	6	Moderate
Other UXO	Excavations within post-WWII MG	1	1	1	1	4	4	Low
	Excavations beneath post-WWII MG	1	1	1	1	4	4	Low
	Boreholes/Piling	1	1	1	1	3	3	Low
PE (Probability of Encounter), PD (Probability of Detonation), P (Overall Probability)								
MG – Made Ground								
Post-WWII Made Ground thickness on the Site understood to be >4.0m.								

8 RISK MITIGATION PLAN

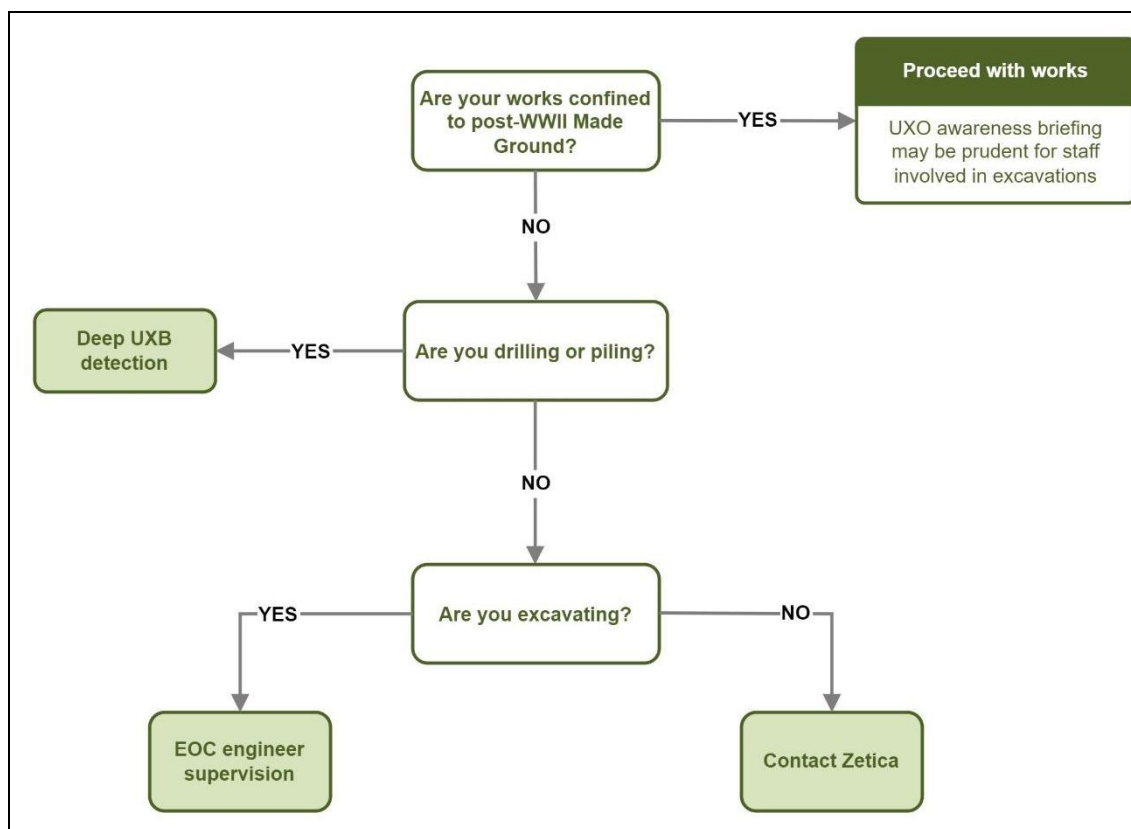
Key findings: Potential hazard from UXB and practice bombs on the Site.

Key actions: Deep UXB detection is required to clear borehole or pile locations.

EOC engineer supervision recommended for excavations below post-WWII Made Ground.

Figure 6 outlines the recommended steps to reduce the UXO risk to As Low As Reasonably Practicable (ALARP).

Figure 6 Recommended risk mitigation plan for the Site



8.1 UXO risk summary

Table 4 summarises the UXO risk for proposed works on the Site and recommended actions.

Table 4 Summary of UXO risk and mitigation recommendations

Proposed Works	UXO Risk	Recommended Mitigation
Works within post-WWII Made Ground		Proceed with works – a UXO awareness briefing is prudent for staff involved in excavations.
Excavations		EOC Engineer Supervision – to ensure safety and minimise delays, EOC Engineer supervision is recommended.
Boreholes/Piling		Deep UXB detection – to clear borehole and pile locations of potential UXB, an intrusive magnetometer survey should be undertaken until either the maximum bomb penetration or maximum drilling/piling depth is reached.

In summary, we recommend that deep UXB detection is undertaken as part of borehole or pile construction to ensure the safety of those working in the area.

For excavations below post-WWII Made Ground, EOC engineer supervision is recommended.

8.2 Risk mitigation techniques

The section below provides further details of the recommended techniques for mitigating the UXO risk on the Site.

8.2.1 Deep UXB Detection

To clear borehole or pile positions of potential UXB, an intrusive magnetometer survey should be undertaken.

The survey should be carried out to either the maximum bomb penetration depth or maximum drilling or piling depth, whichever is shallower.

There are two main systems available:-

MagDrill (Boreholes) – this is a system that is suitable for working with ground investigation drillers.

It allows a magnetometer to be lowered into the borehole to ensure the route is clear of potential UXB.

MagCone (Piles) – this is a CPT-based system that facilitates the pushing of a magnetometer into the ground at the proposed location of a pile.

MagCone is suitable for cohesive/loose soils and has a much higher speed of operation compared to MagDrill. It should be noted that where dense soils or buried obstructions are encountered, MagCone is unlikely to be able to penetrate to the required depth.

Detection - Typical radius of detection should be assumed as approximately 1.0m for a 50kg UXB until site conditions are confirmed.

Assuming no objects comparable to the UXB detection range are identified, then the borehole position can be considered clear of UXB.

If any ferrous anomalies are identified at the borehole or pile position, then it may need to be relocated or the anomaly investigated.

It should be noted that in Made Ground or close to buried/adjacent structures, effective UXB detection is compromised due to geophysical noise.

A clearance report should be issued on completion of the site works.

8.2.2 EOC Engineer Supervision

It is assumed that most excavation will be within the footprint of post-WWII Made Ground and will therefore be low risk.

If excavation is required beneath post-war Made Ground, it is recommended that an EOC engineer supervises. A non-intrusive survey is unlikely to be practical due to Site ground conditions.

The EOC engineer will carry out a visual assessment on any suspect items uncovered during the excavation works and classify them as potential UXO or other material.

If an item of UXO is uncovered, the EOC engineer will mobilise an EOD to make the item safe.

8.2.3 UXO awareness briefing

It is prudent that all staff involved in intrusive works are provided with a formal UXO awareness briefing.

The briefing should offer some recognition skills for typical UXO, and suitably sensitise staff to be vigilant during site works.

A UXO awareness briefing ensures that in the unlikely event that UXO is encountered:

- All site staff take appropriate action.
- A support mechanism and points of contact are established.
- The likelihood of harm to people or property is reduced.
- Significant delays to site work are prevented.

8.3 What do I do next?

If you have wish to proceed with UXO risk mitigation, contact us and we can help.

	01993 886682		<u>uxo@zetica.com</u>		<u>zeticauxo.com</u>
---	---------------------	---	---	---	---

If you have requirements to identify other buried hazards (such as mapping utilities or obstructions) we can provide these surveys.

If proposed works on the Site change, or additional works are planned, contact Zetica for a re-assessment of the UXO risk and the risk mitigation requirements.

APPENDICES

Appendix 1 Anticipated ordnance types

For a more comprehensive set of ordnance data sheets, see <https://zeticauxo.com/guidance/ordnance-data-sheets/>.

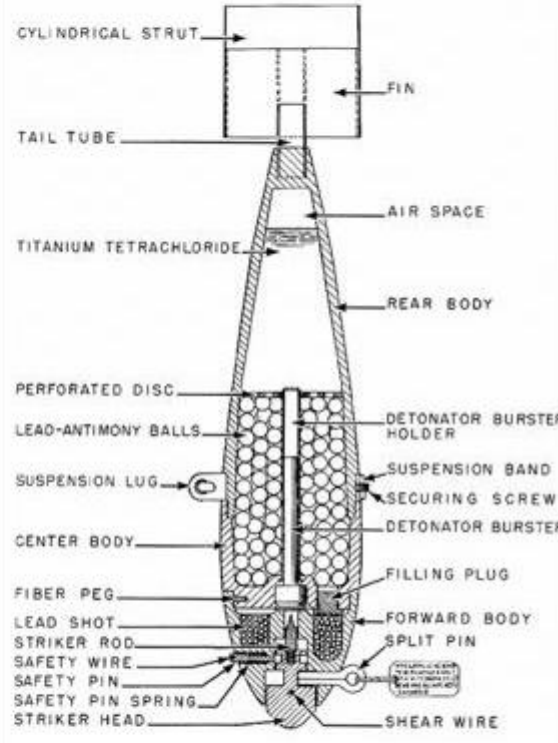
Information Data Sheet



8.5lb Practice Bomb







Specifications

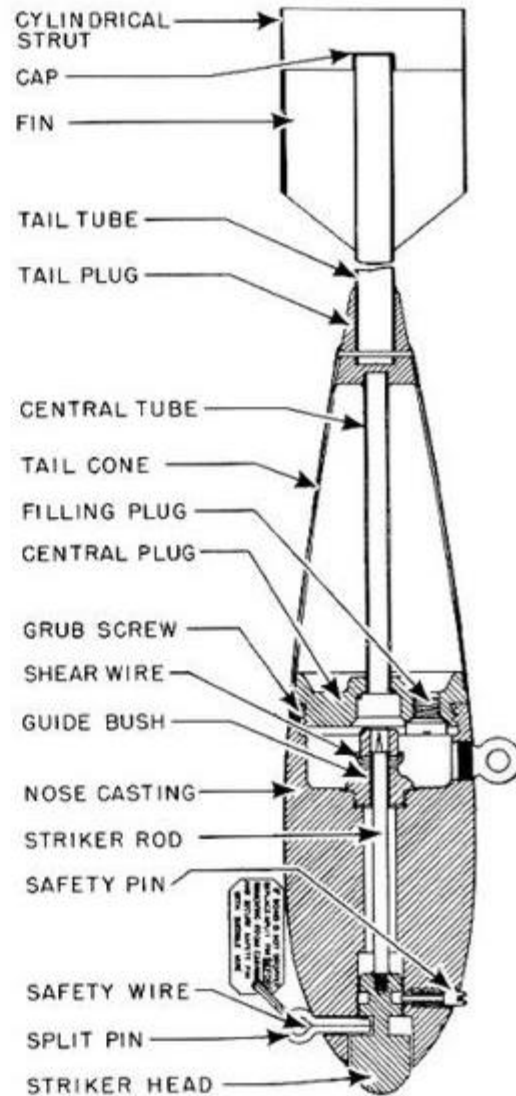
Description	Pear shaped with single suspension lug and ring-bound four-fin tail	Function	Training (Smoke or Flash)
Dimensions	Total 406mm x 76mm (16" x 3") Body 305mm x 76mm (12" x 3")	Activation by	Impact fuze
Material	Bakelite body, sheet metal tail	Variations	-

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Information Data Sheet

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10lb Practice Bomb



Specifications

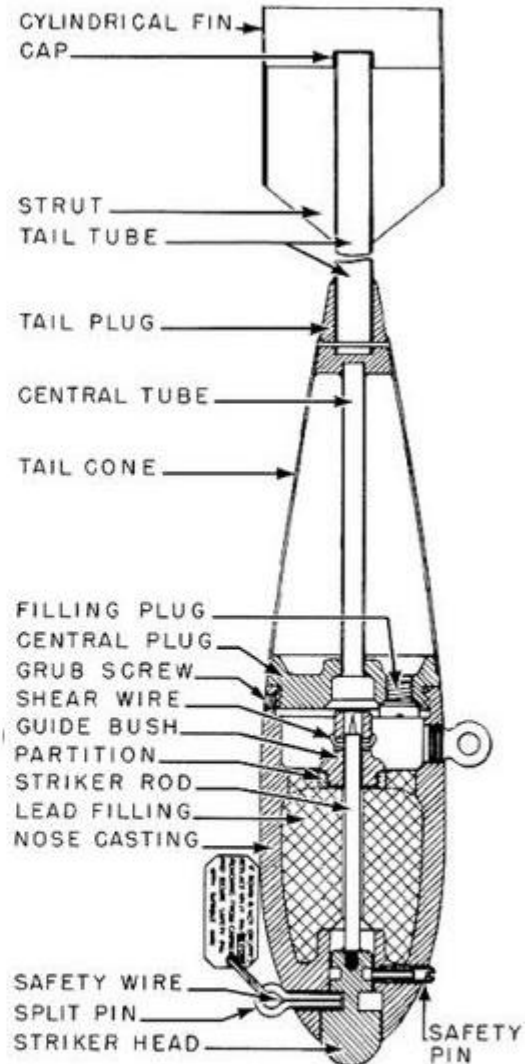
Description	Pear shaped with single suspension lug and ring-bound four-fin tail	Function	Training (Smoke or Flash)
Dimensions	Total 457mm x 76mm (18" x 3") Body 178mm x 76mm (7" x 3")	Activation by	Impact fuze
Material	Iron body, sheet metal tail	Variations	Variants with Bakelite tail

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Information Data Sheet

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11.5lb Practice Bomb



Specifications

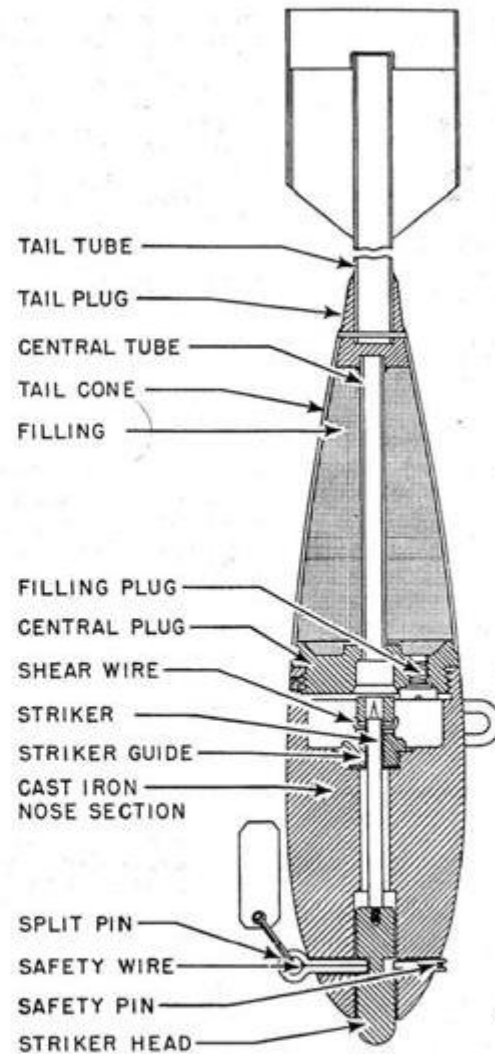
Description	Pear shaped with single suspension lug and ring-bound four-fin tail	Function	Training (Smoke or Flash)
Dimensions	Total 457mm x 76mm (18" x 3") Body 178mm x 76mm (7" x 3")	Activation by	Impact fuze
Material	Steel body, sheet metal tail	Variations	Variants with thicker tails or Bakelite construction

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Information Data Sheet

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25lb Practice Bomb



Specifications

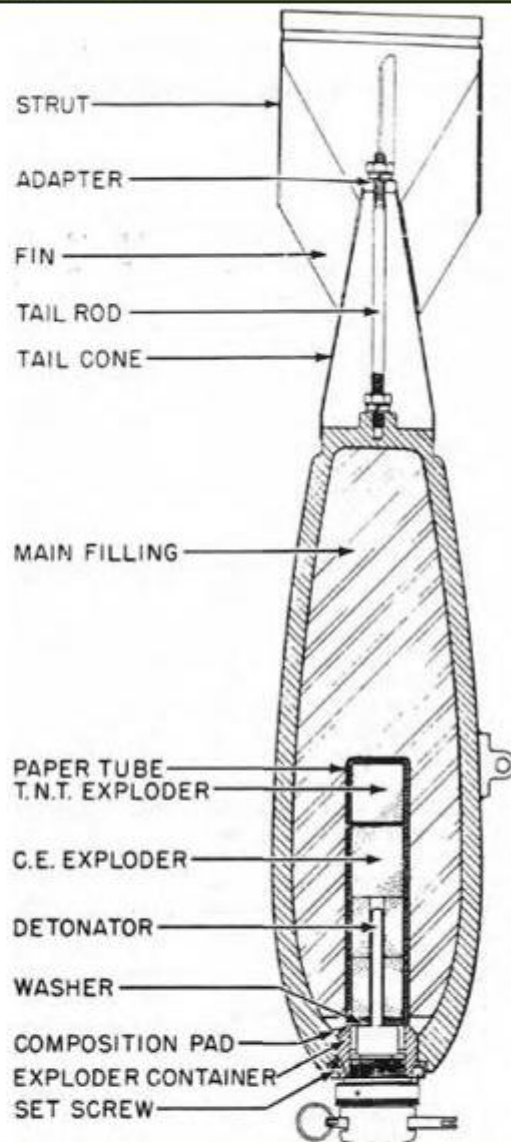
Description	Pear shaped with single suspension lug and ring-bound four-fin tail	Function	Training (Smoke or Flash)
Dimensions	Total 559mm x 102mm (22" x 4") Body 229mm x 102mm (9" x 4")	Activation by	Impact fuze
Material	Iron nose, sheet metal tail	Variations	-

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Information Data Sheet

zetica^{uxo}

40lb General Purpose Bomb



Specifications

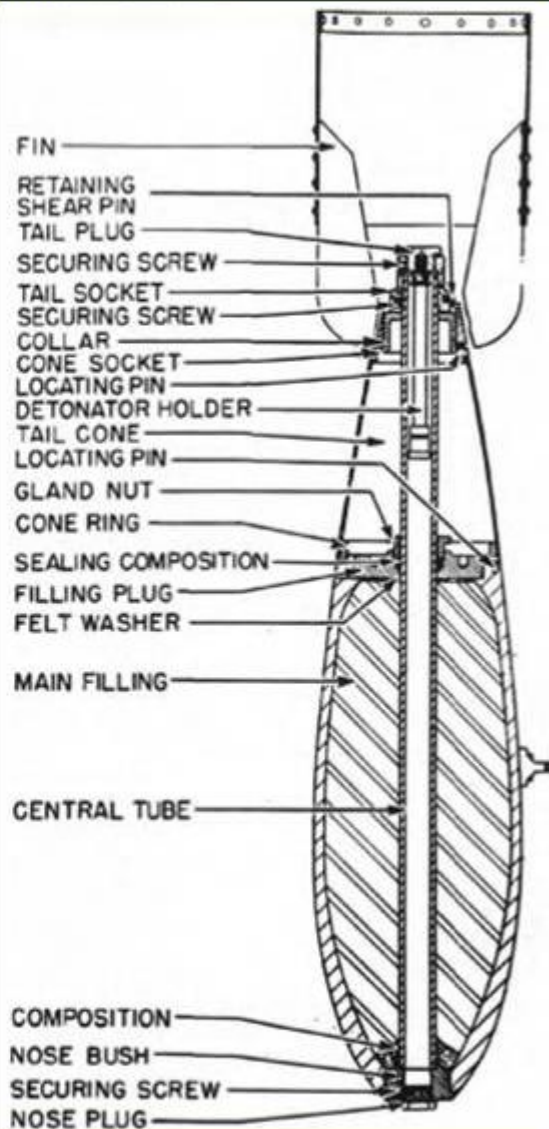
Description	Pear-shaped with ring-bound four-fin tail	Function	General Purpose (Fragmentation)
Dimensions	Total 693mm x 130mm (27.3" x 5.1") Body 404mm x 130mm (15.9" x 5.1")	Activation by	Impact or Pressure fuze
Material	Steel	Variations	Minor variations in size

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Information Data Sheet

zetica^{uxo}

250lb General Purpose Bomb



Specifications

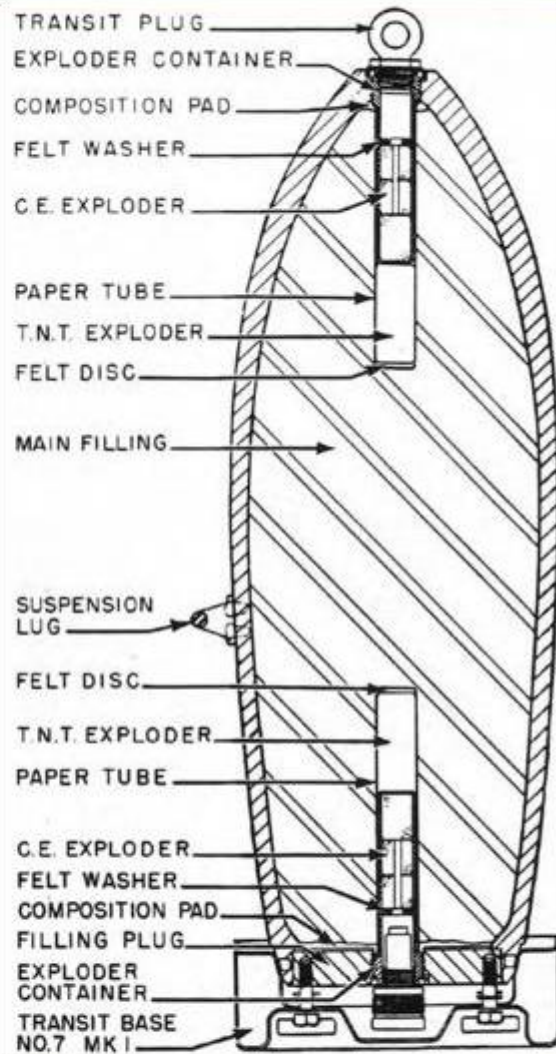
Description	Cylindrical with streamlined nose and ring-bound four-fin tail		Function	General Purpose (Blast and Fragmentation)
Dimensions	Total	1377mm x 262mm (54.2" x 10.3")	Activation by	Impact or Time fuze
	Body	711mm x 262mm (28" x 10.3")		
Material	Steel		Variations	Minor variations in size

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Information Data Sheet

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500lb General Purpose Bomb



Specifications

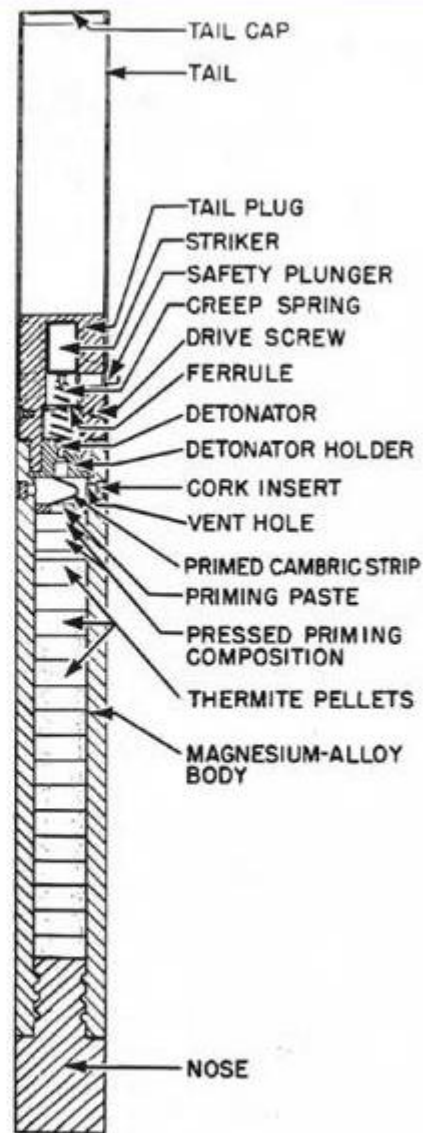
Description	Cylindrical with streamlined nose and ring-bound four-fin tail	Function	General Purpose (Blast and Fragmentation)
Dimensions	Total 1412mm x 328mm (55.6" x 12.9") Body 925mm x 328mm (36.4" x 12.9")	Activation by	Impact or Time fuze
Material	Steel	Variations	Significant variations in length

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Information Data Sheet



4lb Incendiary Bomb



Specifications

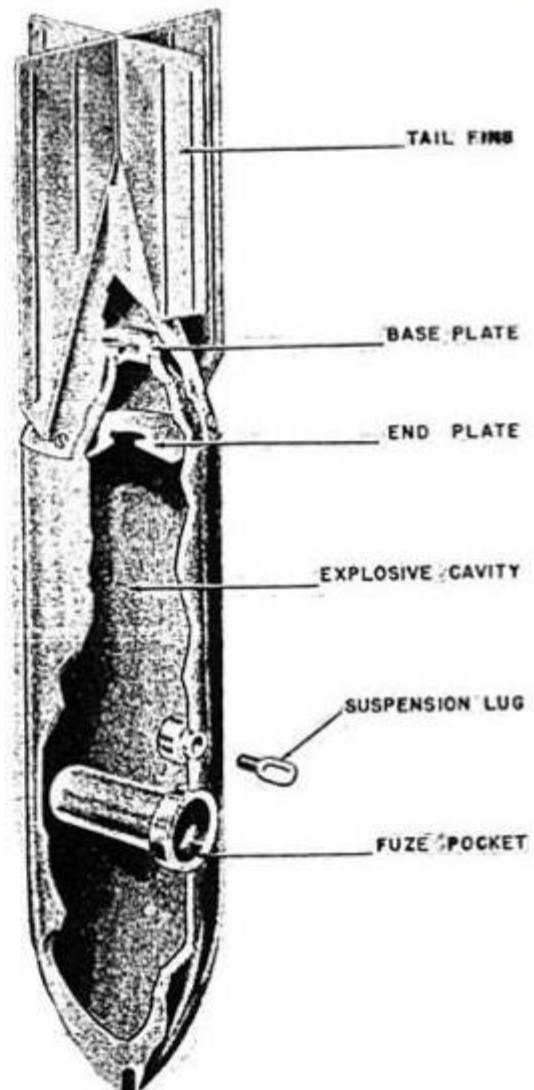
Description	Hexagonal rod	Function	Anti-Structure (Cluster Incendiary)
Dimensions	544mm x 41mm (21.4" x 1.6")	Activation by	Impact fuze
Material	Magnesium body, Iron or Steel nose, Magnesium or Tin tail	Variations	Variants with explosive charge

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Information Data Sheet

zetica^{uxo}

50kg High Explosive Bomb



Specifications

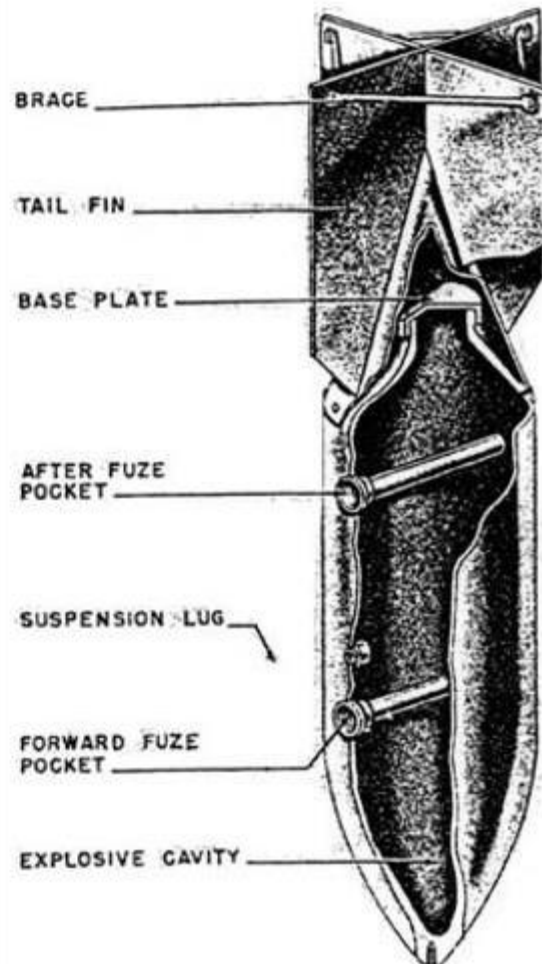
Description	Cylindrical with pointed nose and four-fin tail	Function	General Purpose (Blast and Fragmentation)
Dimensions	Total 1090mm x 280mm (42.9" x 11") Body 766mm x 200mm (30.2" x 7.9")	Activation by	Impact, Time, or Tamper fuze
Material	Steel	Variations	Minor variations in length

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Information Data Sheet

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250kg High Explosive Bomb



Specifications

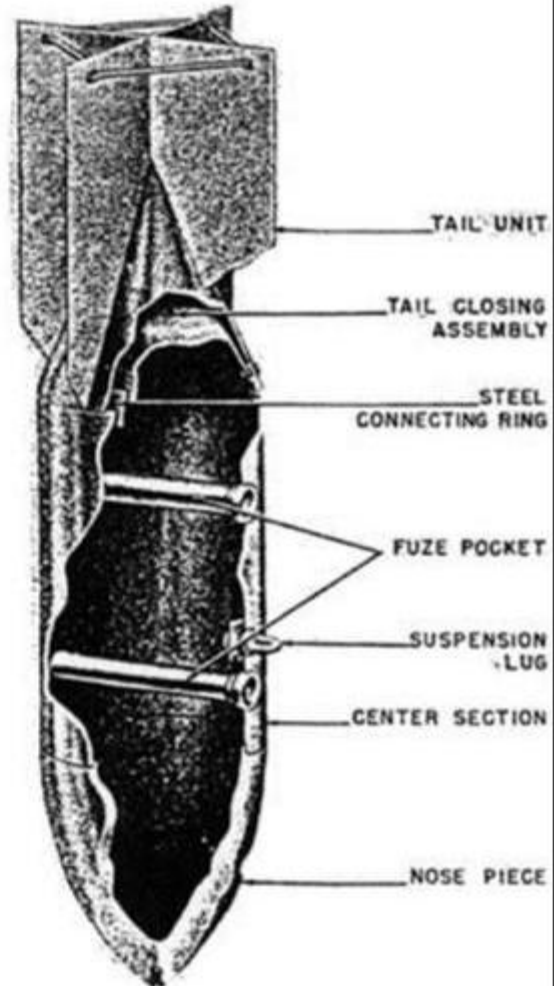
Description	Cylindrical with pointed nose and braced four-fin tail	Function	General Purpose (Blast and Fragmentation)
Dimensions	Total 1640mm x 512mm (64.6" x 20.2")	Activation by	Impact, Time, or Tamper fuze
	Body 1172mm x 368mm (46" x 14.5")		
Material	Steel	Variations	Minor variations in length

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Information Data Sheet

zeticauxo

500kg High Explosive Bomb



Specifications

Description	Cylindrical with pointed nose and braced or ring-bound four-fin tail	Function	General Purpose (Blast and Fragmentation)
Dimensions	Total 1957mm x 640mm (77" x 25.2") Body 1423mm x 470mm (56" x 18.5")	Activation by	Impact, Time, or Tamper fuze
Material	Steel body, Steel or Magnesium Alloy tail	Variations	Minor variations in length

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Information Data Sheet

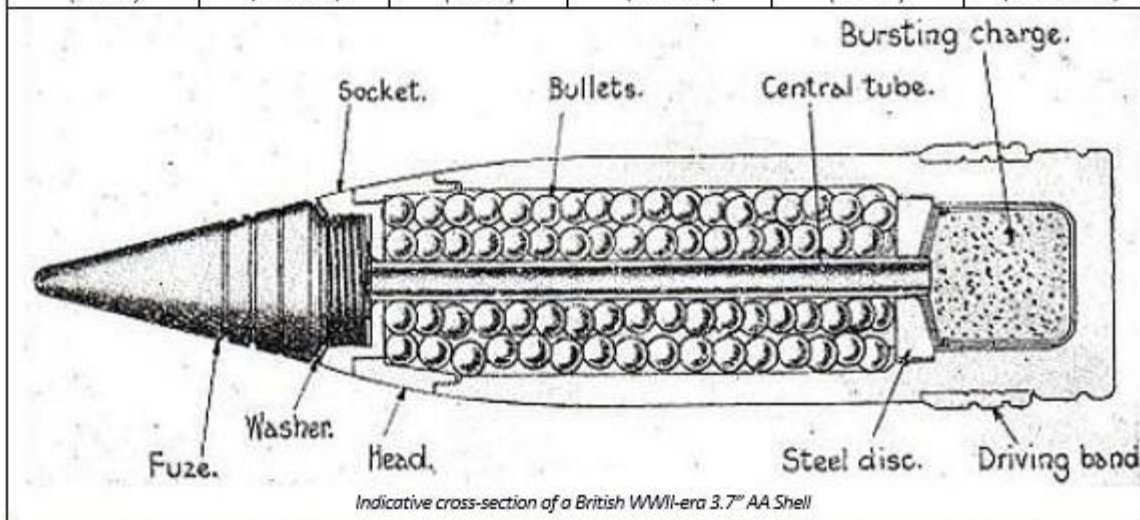
Anti-Aircraft Shells



Anti-Aircraft (AA) guns are artillery pieces designed to engage aircraft. They may be classed as Heavy AA (HAA) or Light AA (LAA). HAA shells are typically streamlined, made of steel, and equipped with driving bands. They usually carry a High Explosive (HE) or shrapnel filling and use time or proximity fuzes. LAA guns are often autocannons. Indicative specifications for common British HAA shells are given below.

Specifications

Shell	Dimensions	Shell	Dimensions	Shell	Dimensions
6-pdr (c. WWI)	307mm x 57mm (12.1" x 2.2")	13-pdr (c. WWI)	294mm x 76mm (11.6" x 3")	3.7" (c. WWI)	675mm x 94mm (26.6" x 3.7")
75mm (c. WWI)	350mm x 75mm (13.8" x 3")	3" (c. WWI)	420mm x 76mm (16.5" x 3")	4.5" (c. WWI)	695mm x 113mm (27.4" x 4.5")
12-pdr (c. WWI)	445mm x 102mm (17.5" x 4")	4" (c. WWI)	445mm x 102mm (17.5" x 4")	5.25" (c. WWI)	782mm x 133mm (30.8" x 5.25")



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Appendix 2 Sources of UXO hazard

The sections below provide background information on the potential sources of UXO hazard affecting the Site. For a more comprehensive set of UXO information sheets, see <https://zeticauxo.com/guidance/uxo-hazard-sources/>.

Appendix 2.1 Bombing ranges

Information Data Sheet

Category Bombing Ranges

Description Bombing ranges primarily use practice and live bombs, although other munitions such as shells and rocket projectiles are also commonly used.

Bombing ranges have been established since WWI, when aerial strategic bombing was first used. Many practice bombing targets were located at airfields, allowing resident squadrons to practice close to their base.

During WWII, a significant number of new bombing ranges were established. This included live ranges (often along the coast), practice ranges and air-to-ground ranges which also involved the firing of projectiles from aircraft.

Despite being designated for practice bombs, many ranges also used live bombs, particularly during wartime.



Retrieving practice bombs from a range in an estuary during WWII

Hazard Bombing ranges provide a potential UXO hazard from live and practice bombs, in addition to other projectiles that may have failed to detonate during training. In the marine environment, in particular, the removal of unexploded bombs is less likely to have taken place.

Practice bombs contain a small explosive charge and produce a coloured powder plume for daylight operations and a light flash for night operations.

Typically, the greatest concentration of ordnance at an artillery range will be around any target/impact area, which are often recorded on range templates or evident from aerial photographs.

The inherent inaccuracy of practice bombing means that bombs can be found in areas surrounding designated bombing ranges. Inexperienced RAF bombing squadrons and cavalier American bomb-aimers often missed the target by some distance.

Today, there is a much more rigid protocol for clearing bombing ranges of UXO and, with improved equipment and techniques, clearance is far more thorough than on wartime ranges.

Appendix 2.2 Bombing decoys

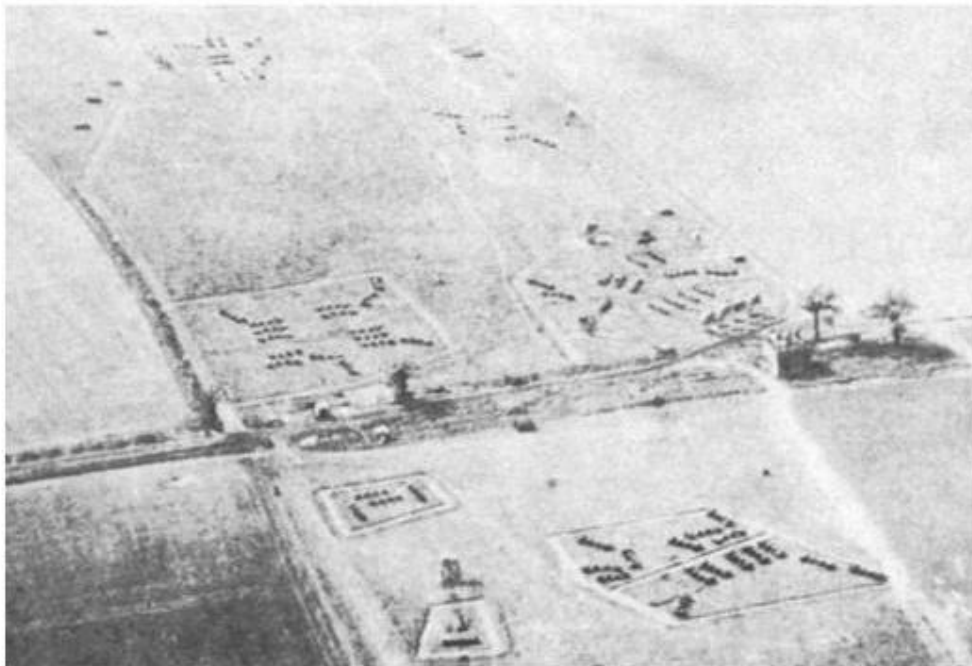
Information Data Sheet

Category Bombing Decoys**Description:**

Bombing decoys were developed between 1940 and 1941, designed to create false bombing targets realistic enough to divert enemy aircraft away from the authentic ones. The decoy system proved successful in many areas of the UK, with at least 5% of the total weight of bombs drawn away from their intended targets. Approximately 792No. static bombing decoys were built at 593No. locations across the UK.

Several different types of decoy existed:

- Dummy airfields for daytime ('K sites') and night-time ('Q sites'). These would include dummy aircraft, and landing lights and flare paths to simulate airfield lighting.
- Diversionary fires on airfields ('QF sites'), petroleum depots ('P sites'), and major towns and cities ('Starfish (SF) sites'). These would comprise frames of combustible material that would be lit to simulate successful bombing raids.
- Simulated urban lighting ('QL sites').
- Dummy Heavy Anti-Aircraft (HAA) batteries, factories, and buildings ('C series').
- Mobile decoys representing 'hards' for troops embarkation and tanks ('MQL sites')



SF decoy site

Hazard:

By their nature, bombing decoys provide a potential hazard from Unexploded Bombs (UXB), both within the decoy boundary and in the surrounding areas. Many decoys were established on greenfield sites, meaning seemingly innocuous fields may have a potential UXB hazard.

The most important thing to understand is if a bombing decoy was successful, as whilst many were attacked, some were not and therefore will not constitute an UXB hazard.

Appendix 2.3 WWI bombing**Information Data Sheet****Category** World War One (WWI) Bombing**Description:**

During WWI, significant bombing took place across some areas of the UK. An estimated 9,000No. German bombs were dropped on Britain during the course of 51No. airship and 52No. aircraft raids. It was the first time that strategic aerial bombardment had been used.

Nearly 100No. air raids were carried out on London and Southeast England, over 40No. of which were by Zeppelin airships. Areas along the East Coast was also targeted regularly due to their proximity to the European continent. Bombing raids further inland were rare and West England and Wales were out of reach for German aircraft of the time.

Aerial bombing during WWI initially relied on visual aiming, with bombsights not developed until later in the war. The inaccuracy inherent in this method meant that bombs often fell some way from their intended targets.

The first recorded raid against England occurred on the 21st December 1914 when 2No. High Explosive (HE) bombs fell near the Admiralty Pier at Dover. Zeppelin raids intensified during 1915 and 1916, with aircraft raids becoming more frequent after 1917. The last raid of WWI took place on the 19th May 1918, when 38 Gotha and 3 Giant aircraft bombed London and surrounding districts, dropping a total of more than 2,500lbs of bombs.



A variety of WWI German bombs

Hazard:

The potential of coming across an Unexploded Bomb (UXB) from WWI is far less likely than an UXB from World War Two (WWII), given the lower bombing densities during raids in WWI.

Some areas which were subjected to sustained bombing raids recorded a higher number of UXBs. In these areas, where there has been no significant development for the last century, the potential of a UXB remaining from WWI cannot be totally discounted.

Appendix 2.4 WWII bombing**Information Data Sheet****Category** World War Two (WWII) Bombing**Description:**

Bombing raids began in summer 1940 and continued until the end of WWII. Bombing densities generally increased towards major cities, such as London, Birmingham, Coventry, and Hull, or strategic targets such as docks, harbours, industrial areas, and airfields. Coastal towns, such as Eastbourne, and cathedral cities, such as Canterbury were also heavily targeted.

The German bombing campaign saw the extensive use of both High Explosive (HE) bombs and Incendiary Bombs (IBs). 50kg and 250kg HE bombs were most commonly used, although 500kg were also used to a lesser extent. More rarely 1,000kg, 1,400kg and 1,800kg bombs were dropped. HE bombs tended to contain about half of their weight in explosives and were fitted with one or two fuzes. Not all HE bombs were intended to explode on impact and some contained timing mechanisms where detonation could occur more than 70 hours after impact.

Incendiary devices ranged from small 1kg thermite filled, magnesium bodied IBs, to 250kg and 500kg Oil Bombs (OB). Occasionally IBs were fitted with a bursting charge which exploded after the bomb had been alight for a few minutes, causing burning debris to be scattered over a greater area. Large OBs were similar in appearance to HE bombs, although their design was sufficiently different to warrant a specially trained unit of the Royal Engineer (RE) to deal with their disposal.



Variety of WWII bombs

Anti-Personnel (AP) bombs and Parachute Mines (PMs) were also deployed. The most common AP bombs were 1kg and 2kg, which could inflict injury across an area up to 150m away from the impact. PMs could be up to 4m in length and were typically detonated either magnetically or by noise/vibration. Anti-shipping PMs were commonly dropped over navigable rivers, dockland areas, and coastlines. Whilst the Royal Navy (RN) was responsible for ensuring that anti-shipping PMs were made safe, their removal and disposal was still the responsibility of the RE.

In 1944, new offensive weapons were introduced. The Flying Bomb (V1), a pilotless guided missile, exploded on impact and could cause significant damage. The Long Range Rocket (V2), a ballistic missile rocket, travelled at such speed that no one could see or hear its approach.

WWII bomb targeting was inaccurate, especially in the first year of the war. A typical bomb load of 50kg HE bombs mixed with IBs aimed at a specific location might not just miss the intended target but could fall a considerable distance away.

Local Civil Defence authorities in urban areas typically had a comprehensive system for reporting bomb incidents and dealing with Unexploded Bombs (UXB). In more rural and coastal areas where fewer bombing raids occurred, it is known that Air Raid Precaution (ARP) records under-represent the number and frequency of bombs falling. Bombs could be released as part of 'tip and run' raids where bomber crews would drop their bombs to avoid Anti-Aircraft (AA) fire or Allied fighter aircraft, on route to and from other strategic targets. Bombs dropped as a result of poor targeting or 'tip and run' raids often went unrecorded or were recorded as 'fell in open country' or 'fell in the sea'. The Luftwaffe are thought to have dropped approximately 75,000 tons of bombs on Britain throughout WWII and an estimated 11% of all bombs dropped during the war failed to detonate.



Removal of an UXB

Hazard:

The potential for a UXB hazard to exist on a site depends on a variety of factors:

- Were their strategic targets in the surrounding area?
- Was the site bombed and how heavy were the raids?
- Could an UXB impact have been missed, masked by rubble or debris?

Even in rural areas, the potential for UXBs cannot be totally discounted and therefore it is essential that detailed local bombing records are obtained when assessing the UXB hazard on any site.

Appendix 2.3 Anti-Aircraft defences**Information Data Sheet****Category** Anti-Aircraft (AA) Defences**Description:**

As aerial bombardment first began during World War One (WWI), AA gun batteries were gradually established throughout much of England to counter German bombing raids. By June 1916, there were approximately 271No. AA guns and 258No. searchlight installations defending London alone.

Common WWI AA defences included 3", 75mm, 6-pounder (pdr), and 1pdr guns. Many of these guns were mobile and would follow the course of an airship, firing from areas of open land.

During WWI, Unexploded AA (UXAA) shells, could land up to 13km from the firing point, although they more typically fell within 10km.



WWI 3-pdr mobile Vickers AA gun



WWII 3.7" static AA gun

During World War Two (WWII), AA gun batteries were used extensively to counter the threat posed by enemy aircraft. AA shells could be distributed over a wide area and could land up to 27km from the firing point, although they more typically fell within 15km.

3No. types of AA batteries existed:

- Heavy AA (HAA) – typically 3.7", 4.5", and 5.25" calibre guns designed to engage high flying bomber aircraft. These tended to be permanent gun emplacements.
- Light AA (LAA) – typically used 40mm shells and machine gun ammunition and designed to counter low flying aircraft. These were often mobile and were moved periodically.
- Rocket AA (ZAA) – fired 3" or 3.7" AA rockets with a maximum altitude of 5,800m and a ground range of 9km. These tended to be permanent gun emplacements.

Hazard:

AA batteries had munitions stores which stored shells for the batteries and Small Arms Ammunition (SAA) for troops manning the position. Such stores were typically removed at the end of WWII, although some disposal may have occurred in the immediate vicinity of the gun battery.

In areas heavily protected by AA batteries, it is prudent to consider the potential for UXAA shells in the area surrounding a battery, taking into consideration the likely extent within which shells would have fallen. Finding an UXAA shell immediately adjacent to a former gun battery is less likely.

Appendix 3 Recent UXO finds**Information Data Sheet****Category** Recent UXO Finds

UXO finds in the UK are a regular occurrence, although they almost never result in an accidental detonation.

Explosives rarely lose effectiveness with age. In some instances, mechanisms such as fuzes and gaines can become more sensitive and more prone to detonation, regardless of whether the device has been submersed in water or embedded in silt, clay, or similar materials.

Zetica Ltd, and other commercial EOD companies, uncover and make safe thousands of items of UXO each year, though details are rarely made public knowledge.

Publicly recorded discoveries also occur regularly, as shown by the list of recent significant UXO finds in the UK below. Click [here](#) to keep up to date with the latest UXO finds.

On the 2nd January 2022, 1No. heavily deteriorated 105mm artillery shell was discovered by dogwalkers on a beach in Cumbria. This may have originated on one of the several offshore ranges which have been operational along the nearby coastline since WWII.

On the 14th July 2022, 1No. 2" mortar bomb and several Small Arms Ammunition rounds were discovered on a beach near Ardnamurchan. An EOD team disposed of the items.

On the 28th November 2022, 45No. Self-Igniting Phosphorus grenades were discovered during construction works at a school in Swindon. They were disposed of by an EOD team.

On the 5th December 2022, 1No. UXB was discovered during construction at Biggin Hill Airport. An EOD team removed the UXB for safe disposal.

On the 7th February 2023 1No. 250kg bomb was found during dredging works in the River Yare, Great Yarmouth. An exclusion zone was put in place as the EOD team put in blast. On the 10th February the UXB detonated unplanned whilst being disarmed by an Army EOD team.



250kg German UXB discovered at Great Yarmouth and the resulting detonation, 2023

On the 16th March 2023, 1No. unexploded grenade was discovered by magnet fishers in the Worcester & Birmingham Canal. This was the second item of UXO discovered in this stretch of canal after an initial item was discovered on the 7th March. Both items were removed and made safe by EOD teams.

On the 17th April 2023, 1No. unexploded mortar bomb was discovered at Cavenham Heath Nature Reserve. It was destroyed in a controlled explosion by an EOD team. This followed 2No. other similar discoveries on the 7th March and 12th March in the same stretch of canal.

On the 27th July 2023, 1No. 250kg WWII bomb was discovered off the coast of Guernsey by a recreational diver. It was detonated in situ by a Royal Navy EOD diver team.

On the 18th August 2023, 1No. unexploded grenade was discovered at a property in Little Clacton. An EOD assessed the grenade was safe to move to a nearby location, where it was rendered safe.

On the 3rd September 2023, 2No. artillery shell fuzes were destroyed in a controlled explosion in Wigan. The fuzes were discovered earlier in the year through metal detecting on Rivington Pike.

On the 15th October 2023, 1No. WWI shell was discovered near Folly Bridge, Oxford. An EOD team removed the shell for safe disposal.

On the 11th January 2024 1No. 500kg-1000kg WWII mine was discovered in fishing nets at East Looe quayside. A Royal Navy EOD team relocated the mine for controlled detonation.

On the 20th February 2024, 1No. 500kg UXB was discovered in a garden in Plymouth (see below). An exclusion zone was put in place, evacuating approximately 3,250No. people over a course of 4No. days. On the 24th February the UXB was moved and detonated at sea by EOD teams.



500kg German UXB discovered in Plymouth, 2024

On the 20th March 2024, 1No. unexploded Incendiary Bomb (IB) was discovered at Joyden's Wood, Bexley. The IB was removed by an EOD team for controlled detonation.

On the 4th April 2024, several items of UXO including practice bomb heads and 20mm rounds, were discovered on Medmerry Beach, West Sussex. An EOD team detonated the items in situ. These are the latest in a series of UXO finds at Medmerry Beach, which was a bombing and air-to-ground firing range in WWII.

On the 9th May 2024, 1No. item of UXO was discovered at Ashdown House, Hastings. An MoD EOD team attended and identified the device as a 105mm shell. The device was detonated in situ.

Appendix 4 Glossary and definitions

Abandoned Explosive Ordnance (AXO)	Explosive ordnance that has not been used during an armed conflict, that has been left behind or disposed of by a party to an armed conflict, and which is no longer under control of that party. Abandoned explosive ordnance may or may not have been primed, fuzed, armed or otherwise prepared for use.
Demil	Derived from the term 'Demilitarisation', demil refers to the break down and the recycling or disposal of ordnance components.
Detonation	The high-speed chemical breakdown of an energetic material producing heat, pressure, flame, and a shock wave.
Device	Any component, sub-assembly or completed ordnance, which may or may not have an explosive risk. It can apply to detonators, primers, gaines, fuzes, shells, or bombs.
Explosive	Compounds forming energetic materials that under certain conditions chemically react, rapidly producing gas, heat, and pressure. These are extremely dangerous and should only be handled by qualified professionals.
Explosive Ordnance (EO)	All munitions containing explosives, nuclear fission or fusion materials, and biological and chemical agents. This includes bombs and warheads, missiles, artillery, mortar, rocket, Small Arms Ammunition, mines, torpedoes, depth charges, pyrotechnics, cluster bombs and dispensers, cartridge and propellant devices, electro-explosive devices, clandestine and improvised explosive devices, and all related items/components which are explosive in nature.
Explosive Ordnance Clearance (EOC)	The operation of ordnance detection, investigation, identification, and removal, with Explosive Ordnance Disposal being a separate operation.
Explosive Ordnance Disposal (EOD)	The detection, identification, on-site evaluation, rendering safe, recovery, and final disposal of Unexploded Ordnance.
Explosive Ordnance Reconnaissance (EOR)	The detection, identification, and on-site evaluation of Unexploded Ordnance before Explosive Ordnance Disposal.
Explosive Remnants of War (ERW)	Unexploded Ordnance and Abandoned Explosive Ordnance, excluding landmines.
Explosive Substances & Articles (ESA)	Explosive substances are solid or liquid substances (or a mixture) which are either: capable by a chemical reaction of producing gas at a speed, temperature, and pressure to cause damage to the surroundings; or designed to produce an effect by heat, light, sound, gas, or smoke (or a combination) as a result of a non-detonative, self-sustaining, exothermic reaction. One or more explosive substances form an explosive article.

Fuze	The part of an explosive device that initiates the main explosive charge to function. In common usage, the word fuze is used indiscriminately, but when being specific (and especially in a military context), fuze is used to mean a more complicated device, such as a device within military ordnance.
Gaine	Small explosive charge that is sometimes placed between the detonator and the main charge to ensure ignition.
Geophysical survey	A range of methods that can be used to detect objects or identify ground conditions without the need for intrusive methods (such as excavation or drilling). This is particularly suited to ordnance, as disturbance of ordnance is to be avoided where possible.
High Explosive (HE)	Secondary explosives (commonly known as HE) make up the main charge or filling of an ordnance device. They are usually less sensitive than primary explosives. Examples of secondary explosives are Nitro-glycerine (NG), Trinitrotoluene (TNT), Amatol (Ammonium nitrate and TNT), gunpowder, and Cyclotrimethylenetrinitramine (RDX).
Land Service Ammunition (LSA)	Items of ordnance thrown, propelled, or placed during land warfare, to include grenades, mortar bombs, projectiles, rockets, and landmines.
Munition	The complete device charged with explosives, propellants, pyrotechnics, initiating composition, or nuclear, biological, or chemical material for use in military operations, including demolitions. This includes those munitions that have been modified for use in training, ceremonial, or non-operational purposes. These fall into three distinct categories: inert (contain no explosives), live (contain explosives and have not been fired), and blind (have fired but failed to function as intended.)
Primary Explosive	Explosives used to initiate less sensitive explosives and usually extremely sensitive to friction, heat, and pressure. Primary explosives are commonly found in detonators. Examples of primary explosives are lead azide, lead styphnate, and mercury fulminate.
Propellants	Provide ordnance with the ability to travel in a controlled manner and deliver the ordnance to a predetermined target. Propellants burn rapidly producing gas, pressure, and flame. Although usually in solid form they can be produced in liquid form. Examples of propellants are ballistite, often in flake form, and cordite, often in string form.
Pyrotechnic	An explosive article or substance designed to produce an effect by heat, light, sound, gas, or smoke (or a combination), as a result of non-detonative, self-sustaining, exothermic chemical reactions.
Small Arms Ammunition (SAA)	Projectiles around 12mm or less in calibre and no longer than approximately 100mm. They are fired from a variety of weapons, including rifles, pistols, shotguns, and machine guns.

Unexploded Anti-Aircraft (UXAA) Shell	Ordnance containing High Explosives, although they can also contain pyrotechnic compounds that produce smoke. They ranged from 2" to 5.25" calibre, although most common were 3.7" and 4.5" HE shells.
Unexploded Bomb (UXB)	A common term for unexploded air-dropped munitions.
Unexploded Ordnance (UXO)	Explosive ordnance that has been primed, fuzed, armed, or prepared for use and subsequently fired, dropped, launched, projected, or placed in such a manner as to present a hazard to operations, persons, or objects, and remains unexploded either by malfunction or design.
V1	The Vergeltungswaffe-1, also designated Fieseler Fi 103/FZG-76, known colloquially in English as the Flying Bomb, Pilotless Aircraft, Buzz Bomb, or Doodlebug, was the first guided missile used in WWII and the forerunner of today's cruise missile.
V2	The Vergeltungswaffe 2 ('Reprisal Weapon 2') was the first ballistic missile. It was used primarily against Belgian and British targets during the later stages of WWII. It was also the first man-made object launched into space, during test flights in 1944.

Appendix 5 Bibliography

Bulloch G, Steeds J E, Green K, Sainsbury M G, Brockwell J S & Slade N J, Land Contamination: Technical Guidance on Special Sites: MoD Land

Bulloch G, Steeds J E, Green K, Sainsbury M G, Brockwell J S & Slade N J, R&D Technical Report P5-042/TR/03, Land Contamination: Technical Guidance on Special Sites: Explosives Manufacturing & Processing Sites

CIRIA, Unexploded Ordnance (UXO), a Guide for the Construction Industry, 2009

Clarke N J, Luftwaffe Target Reconnaissance, German Aerial Photography 1939-1942, 1996

Cocroft W D, Dangerous Energy, 2000

Cocroft W D, Thomas R J, Cold War, 2003

Department of the Environment, Sampling Strategies for Contaminated Land, Department of the Environment: Contaminated Land Research Report, CLR Report No. 4, 1994

Dobinson C S, Twentieth Century Fortifications in England, Vols I – XI, Council for British Archaeology, 1996

Dobinson C S, Fields of Deception, Britain's Bombing Decoys of World War II, 2000

Dobinson C S, AA Command, 2001

Halpenny B, Action Stations 4: Military Airfields of Yorkshire, 1982

Morris J, German Air Raids on Britain 1914-1918, 1993

Norman B, Wartime Teesside, 1989

Norman B, Wartime Teesside Revisited, 2004

Norman B, Air Raid Diary: The Luftwaffe Attacks on Tees-side 1940-1943, 2010

Price A, Blitz on Britain 1939-45, 2000

Ramsey W, The Blitz Then and Now, Vol 1, 1987

Ramsey W, The Blitz Then and Now, Vol 2, 1988

Ramsey W, The Blitz Then and Now, Vol 3, 1990

Zetica, ZeticaUXO Handbook: a guide to dealing with UXO during construction, 2018

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Annex 3
Stage 1 – 3 Assessment

Project title	E2P Power Island Environmental Permit Variation Application
Job number	297973
File reference	Site Condition Report Annex 3
cc	
Prepared by	Izzy Mills
Date	30th June 2025
Subject	Stage 1-3 Assessment

Parkin House, 8 St. Thomas Street Winchester Hampshire SO23 9HE United Kingdom
t +44 1962 829900 d +44 1962 720040
arup.com

1. Introduction

This report has been prepared by Ove Arup and Partners Ltd (Arup) on behalf of ConocoPhillips (UK) Teesside Operator Limited to facilitate the resubmission of the Environmental Permit Variation Application. The proposed project involves the construction of an Ethane to Power ('E2P') Power Island at the Installation, comprising up to 16 engines, each capable of generating 2 MWe. The total installed generation capacity will not exceed 50 MWe.

The initial submission of the Environmental Permit Variation application was made to the Environment Agency on 26th March 2025. In an email dated 28/05/2025, the application was returned as Not Duly Made. The correspondence outlined specific items that required resolution for a successful resubmission, this included the production of a Stage 1 to 3 assessment as outlined in the European Commission Guidance concerning baseline reporting (2014/C 136/03) to support the Site Condition Report. The European Commission Guidance under Article 22(2) of Directive 2010/75/EU specifies criteria for baseline reports, covering aspects such as the necessity of the report, investigation design, and report development. Consequently, the Environment Agency has requested that the Stage 1 to 3 assessment include the following components:

- Specification of primary containment, including the volume of any relevant hazardous substances (RHS) proposed for storage or use within the scope of this variation and their Material Safety Data Sheets (MSDS).
- Description of secondary containment measures and their volumes, alongside a compliance evaluation in accordance with CIRIA Report C736—Containment systems for the prevention of pollution.

To address this requirement the aim of this report is to conduct an assessment aligned with Stages 1-3 of the European Guidance concerning baseline reports as outlined in Article 22(2) of Directive 2010/75/EU on Industrial Emissions. The guidance describes the following stages:

- Stage 1: Identify the hazardous substances currently in use, produced or released at the installation.
- Stage 2: Identify relevant hazardous substances to evaluate pollution risks.

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- Stage 3: Assess the site-specific pollution possibility.

The outcome of the three stages will determine the pollution risk for the site.

Following the identification of the pollution risk and the information gathered from this assessment, the CIRIA Report C736—Containment systems for the prevention of pollution will be used to undertake a qualitative assessment to determine what level of classification of secondary containment is appropriate and the requirements of that level of classification. The report will then consider how the design of the secondary containment complies with the secondary containment classification requirements.

2. Stage 1 – 2

This assessment will focus only on the proposed activities at E2P Power Island rather than the wider Teesside Terminal.

Stage 1 requires the identification of hazardous materials that may be encountered within the facility including raw materials, products, intermediaries, by-products, emissions or waste. The materials that will be present at the Installation are detailed in Table 1.

Stage 2 requires the assessment of the potential pollution risk posed by the hazardous substances identified in Stage 1. This assessment requires a review of the chemical and physical properties of each material. To do this the information necessary for this evaluation has been gathered primarily from MSDS for the relevant substances. The MSDS for engine lubrication oil can be found in Appendix A – Lubrication Oil Material Safety Data Sheet and the MSDS for glycol can be found in Appendix B – Glycol Material Safety Data Sheet. These documents provide essential information, including the Chemical Abstracts Service (CAS) numbers for each substance, which serve as unique identifiers for chemical compounds. The assessment also considers the classification of the materials under the European Union's Regulation (EC) No. 1272/2008, which governs the classification, labelling, and packaging of substances and mixtures (CLP Regulation). A summary of the findings from both stages of this assessment is presented in Table 1. This includes not only the identified hazardous substances but also their corresponding classifications and any relevant safety considerations.

Table 1 Raw Materials to be Stored, used and Handled on-site and Waste Materials Produced and Stored

Stage 1	Stage 2					
Material	State S Solid L Liquid G Gas	CAS No.	CLP Classification	Hazardous substances under Stage 2 (Yes/No)	Environmental Fate and Behaviours Product (P) Water (W) Sewer (S) Air (A) Waste/ Land (L)	Potential Pollution Risk
Ethane (in fuel gas)	G	74-84-0	H220 Extremely flammable gas H280 Contains gas under pressure; may explode if heated	Yes	A	Fire hazard
Methane (in fuel gas)	G	74-82-8	H220 Extremely flammable gas H280 Contains gas under pressure; may explode if heated	Yes	A	Fire hazard
Lubrication oil	L	Mixture	None	Yes	L	Yes, if released to the environment
		125643-61-0	H413 May cause long lasting harmful effects to aquatic life			
		68855-45-8	H413 May cause long lasting harmful effects to aquatic life			
		722503-68-6	(1B) H317 May cause an allergic skin reaction			
		83846-43-9	(1) H317 May cause an allergic skin reaction			
Glycol	L	107-21-1	H302 Harmful if swallowed H373 May cause damage to organs	Yes	L	Yes, if released to the environment
		19766-89-3	H361 Suspected of damaging fertility or the unborn child			

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Stage 1	Stage 2					
Material	State S Solid L Liquid G Gas	CAS No.	CLP Classification	Hazardous substances under Stage 2 (Yes/No)	Environmental Fate and Behaviours Product (P) Water (W) Sewer (S) Air (A) Waste/ Land (L)	Potential Pollution Risk
Nitrogen (N)	G	7727-37-9	H280 Contains gas under pressure; may explode if heated	No	A	No
Instrument Air N (79%) O (21%)	G	7727-37-9	H280 Contains gas under pressure; may explode if heated	No	A	No
		7782-44-7	H280 Contains gas under pressure; may explode if heated			
Water (H ₂ O)	L	7732-18-5	None applicable. Not hazardous	No	S L	No

3. Stage 3

Stage 3 of the European Commission Guidance focuses on assessing the site-specific pollution possibility. The first requirement is to identify potential pollution risks by evaluating each relevant hazardous substance to determine if circumstances exist that may result in its release in sufficient quantities to pose a pollution risk. The guidance requires the consideration of the quantity of hazardous substances handled, produced, or emitted, as well as their location on the site, including delivery, storage, usage, and movement. Additionally, the guidance requires the assessment of the presence and integrity of containment, site surfacing, and drainage systems.

As outlined in Table 1, the following substances have been identified as not having a pollution risk and therefore will not be assessed as part of Stage 3:

- Nitrogen
- Instrument Air
- Water

The following materials will be further assessed in Stage 3:

- Fuel gas (ethane and methane)
- Lubrication oil (clean)
- Lubrication oil (waste)
- Glycol

Stage 3 of the assessment is presented in Table 2.

Table 2 Stage 3: Assessment of Site-specific Pollution Potential

Stage 3							
Material	Estimated volumes per annum	Location of storage	Delivery	Primary and secondary storage	Handling and use details	Additional containment measures and procedures	Pollution risk
Fuel gas (ethane & methane mix)	See Table 4-1 of Main Supporting Document (E2P-ARU-ZZ-ZZ-RP-YE-0018)	No storage	Will be delivered to the site in pipework which will be tied into the existing wider Teesside Terminal.	Primary containment: Contained within fully welded pipework. Secondary containment: Where pipework is located below ground, this will be placed within a concrete trench. No secondary containment for above ground pipework.	No handling.	Pressure sensing instrumentation will be installed in the gas supply system connected to alarms which would alert operators to a loss of pressure and also trip systems which would initiate appropriate emergency actions such as automatic isolation of the gas supply if the pressure reached a pre-defined limit. In-process monitoring will take place to identify pressure losses.	Low
Lubrication oil (clean)	Raw material: 950 litres of oil within each engine and a bulk storage tank is capable of holding 20,000 litres	Lubrication oil will be located in - Gas engine enclosures - One bulk clean lubrication oil tank, located on the south side of E2P Power Island on new hardstanding	Delivered to the site as required in tankers.	Primary Containment: A bulk clean lubrication oil tank of mild steel tank designed in accordance with BSEN/10025 2004 S275 JR. Secondary containment: Tank is integrally bundled and has	Lubrication oil will be brought to the site to the bulk storage tank. The filling will be observed by a trained, competent person. A drip tray will be present beneath the filling location. The tank will be fitted with measures to prevent overfill.	Spill kits will be present on the E2P Power Island area in the event of a spill. The tank will be placed on new hardstanding. Surface water from the area will drain towards an existing sump. The sump then pumps to the wider Teesside Terminal effluent system for the removal of any oils before being pumped to Ban Sand treatment works.	Low

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Stage 3							
Material	Estimated volumes per annum	Location of storage	Delivery	Primary and secondary storage	Handling and use details	Additional containment measures and procedures	Pollution risk
				110% spill containment capacity. The bund comprises the same material as the primary tank.		All storage areas will be fitted with high- and low-level alarms. Bunding will be fitted with an alarm connected to the control system. The containment systems will be subjected to regular inspections to identify degradation.	
Lubrication oil (waste)	Waste lubrication oil will be stored within a bulk storage tank (same specification and capacity as clean lubrication oil tank)	Bulk waste lubrication oil tank will be located on the south side of the E2P Power Island area on new hardstanding.	Produced onsite within the gas engines.	Primary Containment: A bulk waste lubrication oil tank will comprise mild steel tank designed in accordance with BSEN/10025 2004 S275 JR. Secondary containment: Tank is integrally banded and has	Waste lubrication oil will be collected and transported offsite to be disposed of via licensed 3rd party waste contractors, in line with regulatory requirements and existing Installation procedures.	Spill kits will be present at E2P Power Island area in the event of a spill. The tank will be placed on new hardstanding. Surface water from the area will drain towards an existing sump. The sump then pumps to the wider Teesside Terminal effluent system for the removal of any oils before being pumped to Bran Sand treatment works.	Low

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Date

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Stage 3							
Material	Estimated volumes per annum	Location of storage	Delivery	Primary and secondary storage	Handling and use details	Additional containment measures and procedures	Pollution risk
				110% spill containment capacity. The bund comprises the same material as the primary tank.		All storage areas will be fitted with high- and low-level alarms. Bunding will be fitted with an alarm connected to the control system. The containment systems will be subjected to regular inspections to identify degradation.	
Glycol	1.2m ³ per engine container. Glycol will be mixed with water within the cooling jacket (70% water, 30% glycol mix). The estimated annual consumption is <10m ³ .	Within gas engine units	Delivered to the site as required within tankers, when required.	Contained within the gas engine closed water-cooling jackets. Located within the gas engines.	Glycol will remain contained within the closed cooling system. The glycol and water mix will be replaced as required. The effluent will be collected and taken for off-site treatment by licenced 3rd party waste contractor.	None required	Low

4. Pollution Risk

4.1 Fuel Gas (Ethane & Methane)

Table 2 outlines the measures in place that contribute to the low risk of pollution to soil and groundwater associated with the use of fuel gas.

The composition of fuel gas as a gaseous material primarily in above ground pipework means that it remains above ground during normal operations. Consequently, any accidental release would be to the air rather than the soil or groundwater. Where there is an underground piping system, the pipes are encased within a concrete trench, which acts as a barrier to prevent gas from escaping into the surrounding ground environment.

The pipework will be welded pipes, ensuring structural integrity and minimising the possibility of leaks. Prior to the initiation of operations, all piping will undergo testing to confirm its safety and functionality. Continuous inspection protocols will be implemented throughout the operational phase to detect any wear or damage that may compromise the pipeline.

In-process monitoring systems will be deployed to identify any pressure loss within the system, which could indicate a potential leakage. In the event of a significant leak, the gas supply will be automatically isolated to mitigate any risk.

Given these comprehensive safety and monitoring measures, the potential for pollution to soil and groundwater is assessed to be low.

4.2 Lubrication Oil (clean and waste)

As outlined in Table 1 lubrication oil will be located within the gas engines themselves or within bulk storage tanks (one for clean and one for waste lubrication oil). The gas engine units and bulk storage tanks will be placed on new hardstanding with a closed drainage system. Surface water from the area will drain towards an existing sump. The sump then pumps to the wider Teesside Terminal effluent system for the removal of any oils before being pumped to Bran Sands treatment works.

950 litres of lubrication oil will be present within each engine enclosure. The engine enclosures will be fitted with secondary containment with a capacity of at least 110%. For the bulk storage tanks, both will have a capacity of 20,000 litres and will comprise a mild steel tank designed in accordance with BSEN/10025 2004 S275 JR. These tanks will be integrally bunded and have 110% spill containment capacity. As such in the event of a leak from the primary containment wall, the lubrication oil will be contained within the secondary containment system. The bund of the bulk tanks will also be fitted with appropriate leak detection and alarms. The containment systems will be subjected to regular inspections to identify degradation.

The secondary containment measures in addition to management methods and procedures will minimise the risk of lubrication oil pollution to soil and groundwater. As such the pollution risk to soil and groundwater is considered to be low.

4.3 Glycol

Table 2 summarises the factors considered to determine a low pollution risk to soil and groundwater from the use and storage of glycol within the closed water jacket gas engine cooling system. Each gas engine will require 1.2m³ of glycol. This glycol will be mixed with water to create a solution that consists of 70% water and 30% glycol. The closed loop water jacket cooling system will ensure that glycol remains contained, thereby significantly minimising the potential for spills or leaks during operation and handling.

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The consumption of glycol is estimated to be less than 10m³ annually, therefore limited quantities reduces the risk of environmental contamination. Additionally, any spent glycol and water mix will be collected and transported off-site for treatment by a licensed third-party waste contractor, ensuring that any waste generated is managed in accordance with environmental regulations.

The gas engine units are equipped with secondary containment measures, which provide an additional layer of security to mitigate potential risks. Overall, the combination of closed-loop systems, controlled handling, and proper waste management practices contributes to a low risk of pollution to soil and groundwater from glycol usage in these operational settings.

5. CIRIA C736 Assessment

5.1 Qualitative Site Risk Assessment

The CIRIA C736 guidance outlines three levels of secondary containment classification (Classification 1, 2 & 3). A qualitative assessment of the criteria for the CIRIA 736 risk assessment methodology has been conducted to provide a Class 1 Secondary Containment Rating for the substances listed in Table 2. Fuel gas has been excluded as the CIRIA C736 guidance primarily focusses on the storage of liquids. Under normal operation glycol will be mixed with water (70% water, 30% glycol), this dilution has been factored into the qualitative assessment.

A Class 1 containment system is suitable for low-risk scenarios involving non-flammable and low-toxicity substances. It typically includes simple structures like reinforced blockwork bunds, prefabricated units, or earth bunds with adequate impermeability. These systems are designed to contain spills from small volumes of relatively benign materials and must meet minimum capacity requirements — either 110% of the largest container or 25% of the total volume stored, whichever is greater. Class 1 systems do not require fire resistance, leak detection, or enhanced inspection regimes, making them appropriate where environmental sensitivity and the likelihood of containment failure are both low.

The determination of this classification rating is based on two scores, the Site Hazard Rating and the Site Risk Rating. The site hazard rating is defined in the CIRIA C736 guidance as a classification that reflects the potential environmental hazard posed by a combination of three key factors:

- Source – the nature and quantity of the hazardous inventory (e.g. chemicals, fuels, firewater, etc.).
- Pathway – the means by which a release could reach the environment (e.g. drains, soil, groundwater).
- Receptor – the sensitivity of the receiving environment (e.g. rivers, aquifers, protected habitats).

Each of these components is rated as High, Moderate, or Low, and the site hazard rating is determined by combining them. The highest individual rating among the combinations typically governs the overall site hazard rating. The site hazard rating is determined by using the Site Hazard Matrix outlined in Box 2.1 of CIRIA C736 an extract of which is shown in Figure 1.

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Figure 1 Box 2.1 of CIRIA C736 Guidance Displaying the Site Hazard Risk Matrix

Environmental hazard ratings		
H = High rating		
M = Moderate rating		
L = Low rating		
Source	Pathway	Receptor
(hazard rating)	(transport potential)	(damage potential)
May be H, M or L	May be H, M or L	May be H, M or L
Possible combination of ratings:		Suggested consequent overall site hazard rating:
HHH or HHM or HMM		HIGH
HHL or MMM or HML		MODERATE
MML or HLL or MILL or LLL		LOW

For the E2P Power Island Site Hazard Rating, it has been assumed that the lubrication oil (clean and waste) is identified as having ‘moderate to high’ and glycol ‘medium’ risk rating due to their composition and characteristics (see Table 1 for details). However, due to the proposed design, containment and management measures that will be in place (see Table 2 for details), the pathway is considered to have a ‘low’ hazard rating. It is highly unlikely that the substances will reach a soil and groundwater receptor and if in the event this does occur, they will likely be in low concentrations/quantities. Therefore, the consequent overall site hazard rating is considered to be ‘low’ based on the matrix detailed in Figure 1.

For the Site Risk Rating a qualitative approach was also adopted in which a ‘low’ risk of loss of containment has been assumed based on the design of the facility and proposed management methods. According to matrix presented in Figure 1 a combination on of a ‘low’ Site Hazard Rating and a ‘medium’ Site Risk Rating results in a Class 1 secondary containment classification. A summary of this qualitative assessment is outlined in Table 3.

Table 3 CIRIA C736 Qualitative Risk Assessment

Component	Risk Rating	Justification	Overall Site Hazard Rating	Likelihood of loss of containment	Final Site Risk Rating	CIRIA C736 Containment Classification
Lubrication oil (clean & waste)						
Source	Moderate to high	Due to volume and aquatic toxicity	Moderate	Low	Low to Moderate	Class 1
Pathway	Low	Robust containment and drainage				
Receptor	Low	Controlled discharge if spilled				
Glycol						
Source	Moderate	Diluted glycol, however, there is a risk of environmental hazards if released	Low to moderate	Low	Low	Class 1
Pathway	Low	Contained within a closed loop system within a gas engine enclosure				
Receptor	Low	Controlled discharge is spilled				

6. Conclusions

This Stage 1–3 assessment has been undertaken in accordance with the European Commission Guidance under Article 22(2) of Directive 2010/75/EU and the Environment Agency’s requirements for baseline reporting. The assessment focused on the proposed E2P Power Island development and considered the hazardous substances associated with the site, including fuel gas (ethane and methane), lubrication oil (clean and waste) and glycol. The findings of the Stage 1-3 assessment confirmed that the pollution risk to soil and groundwater is considered to be low.

Following the identification of the low pollution risk rating and the information gathered from this assessment, the CIRIA Report C736—Containment systems for the prevention of pollution was used to inform a qualitative risk assessment to determine what level of classification of secondary containment is appropriate and the requirements of that level of classification. Based on the site-specific assessment, both the overall site hazard rating and the site risk rating are considered to be low. This is because the findings indicated that all relevant substances will be managed within appropriate containment systems, including integrally bunded tanks, closed-loop cooling systems, and hardstanding with closed drainage connected to an effluent management system. These measures, combined with operational controls such as leak detection, alarms, and regular inspections, significantly reduce the likelihood of environmental release. Consequently, a Class 1 secondary containment classification is deemed appropriate for the substances assessed.

The proposed secondary containment design for the relevant substances on E2P Power Island comply with the requirements of a Class 1 containment system classification.

Appendix A – Lubrication Oil Material Safety Data Sheet

Safety Data Sheet



SECTION 1 IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier

HDAX 9300 SAE 40

Product Number(s): 804325

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified Uses: Stationary Gas Engine Oil

1.3 Details of the supplier of the safety data sheet

Chevron Products UK Limited
1 Westferry Circus
Canary Wharf
London E14 4HA
United Kingdom
email : eumsds@chevron.com

1.4 Emergency telephone number

Transportation Emergency Response

Europe: 0044/(0)18 65 407333 and CHEMTREC: +1 703 527 3887

Health Emergency

Chevron Emergency Information Center: Located in the USA, international calls accepted 24 hours: +1 510 231 0623

Europe: 0044/(0)18 65 407333

Product Information

Product Information: FAX number: 0044/20 77 19 5171

SECTION 2 HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

CLP CLASSIFICATION:

Not classified as dangerous according to EU regulatory guidelines.

2.2 Label elements

Under the criteria of Regulation (EC) No 1272/2008 (CLP):

Not classified

- contains: Benzenesulfonic acid, methyl-, mono-C20-24-branched alkyl derivs., calcium salts. May produce an allergic reaction.
Benzoic acid, 2-hydroxy-, mono-C>13-alkyl derivatives, calcium salts (2:1). May produce an allergic reaction.

2.3 Other hazards

This product is not, or does not contain, a substance that is a potential PBT or a vPvB. This product is not, or does not contain, a substance that potentially has endocrine disrupting properties.

SECTION 3 COMPOSITION/ INFORMATION ON INGREDIENTS

3.2 Mixtures

This material is a mixture.

COMPONENTS	CAS NUMBER	EC NUMBER	REGISTRATION NUMBER	CLP CLASSIFICATION	AMOUNT
Highly refined mineral oil (C15 - C50)	Mixture	*	***	None	70 - 99 %weight
Reaction mass of isomers of: C7-9-alkyl 3-(3,5-di-tert-butyl-4-hydroxyphenyl)propionate	125643-61-0	406-040-9	01-0000015551-76	Aquatic Chronic 4/H413	1 - 5 %weight
Phenol, paraalkylation products with C10-15 branched olefins (C12 rich) derived from propene oligomerization, calcium salts, sulfurized including distillates (petroleum), hydrotreated, solvent-refined/dewaxed, cat. dewaxed, light/heavy paraffinic C15-C50	68855-45-8	701-249-4	01-2119524018-47	Aquatic Chronic 4/H413	1 - 5 %weight
Benzenesulfonic acid, methyl-, mono-C20-24-branched alkyl derivs., calcium salts	722503-68-6	682-816-2	**	Skin Sens. 1B/H317	0.1 - < 1 %weight
Benzoic acid, 2-hydroxy-, mono-C>13-alkyl derivatives, calcium salts (2:1)	83846-43-9	281-018-8	**	Skin Sens. 1/H317 [C>=5.88]	0.1 - < 1 %weight

The full text of all CLP H-statements is shown in Section 16.

In accordance with the Regulation (EC)No 1272/2008, Nota L, reference IP 346/92: "DMSO Extraction Method", we have determined that the base oils used in this preparation are not carcinogenic.

*Contains one or more of the following EINECS numbers: 265-090-8, 265-091-3, 265-096-0, 265-097-6, 265-098-1, 265-101-6, 265-155-0, 265-156-6, 265-157-1, 265-158-7, 265-159-2, 265-160-8, 265-166-0, 265-169-7, 265-176-5, 276-736-3, 276-737-9, 276-738-4, 278-012-2.

**Not available or substance is not currently required for registration under REACH.

*** Contains one or more of the following REACH registration numbers: 01-2119488706-23, 01-2119487067-30, 01-2119487081-40, 01-2119483621-38, 01-2119480374-36, 01-2119488707-21, 01-2119467170-45, 01-2119480375-34, 01-2119484627-25, 01-2119480132-48, 01-2119487077-29, 01-2119489287-22, 01-2119480472-38, 01-2119471299-27, 01-2119485040-48, 01-2119555262-43, 01-2119495601-36, 01-2119474889-13, 01-2119474878-16.

SECTION 4 FIRST AID MEASURES

4.1 Description of first aid measures

Eye: No specific first aid measures are required. As a precaution, remove contact lenses, if worn, and flush eyes with water.

Skin: No specific first aid measures are required. As a precaution, remove clothing and shoes if contaminated. To remove the material from skin, use soap and water. Discard contaminated clothing and shoes or thoroughly clean before reuse.

Ingestion: No specific first aid measures are required. Do not induce vomiting. As a precaution, get medical advice.

Inhalation: No specific first aid measures are required. If exposed to excessive levels of material in the air, move the exposed person to fresh air. Get medical attention if coughing or respiratory discomfort occurs.

4.2 Most important symptoms and effects, both acute and delayed

IMMEDIATE SYMPTOMS AND HEALTH EFFECTS

Eye: Not expected to cause prolonged or significant eye irritation.

Skin: Contact with the skin is not expected to be harmful.

Ingestion: Not expected to be harmful if swallowed.

Inhalation: Not expected to be harmful if inhaled. Contains a petroleum-based mineral oil. May cause respiratory irritation or other pulmonary effects following prolonged or repeated inhalation of oil mist at airborne levels above the recommended mineral oil mist exposure limit. Symptoms of respiratory irritation may include coughing and difficulty breathing.

DELAYED OR OTHER SYMPTOMS AND HEALTH EFFECTS: Not classified.

4.3 Indication of any immediate medical attention and special treatment needed

Not applicable.

SECTION 5 FIRE FIGHTING MEASURES

5.1 Extinguishing media

Use water fog, foam, dry chemical or carbon dioxide (CO₂) to extinguish flames.

5.2 Special hazards arising from the substance or mixture

Combustion Products: Highly dependent on combustion conditions. A complex mixture of airborne solids, liquids, and gases including carbon monoxide, carbon dioxide, and unidentified organic compounds will be evolved when this material undergoes combustion. Combustion may form oxides of: Nitrogen, Sulfur, Calcium .

5.3 Advice for firefighters

This material will burn although it is not easily ignited. See Section 7 for proper handling and storage. For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment, including self-contained breathing apparatus.

SECTION 6 ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Eliminate all sources of ignition in vicinity of spilled material. Refer to Sections 5 and 8 for more information.

6.2 Environmental precautions

Stop the source of the release if you can do it without risk. Contain release to prevent further contamination of soil, surface water or groundwater.

6.3 Methods and material for containment and cleaning up

Clean up spill as soon as possible, observing precautions in Exposure Controls/Personal Protection. Use appropriate techniques such as applying non-combustible absorbent materials or pumping. Where

feasible and appropriate, remove contaminated soil and dispose of in a manner consistent with applicable requirements. Place other contaminated materials in disposable containers and dispose of in a manner consistent with applicable requirements. Report spills to local authorities as appropriate or required.

6.4 Reference to other sections

See sections 8 and 13.

SECTION 7 HANDLING AND STORAGE

7.1 Precautions for safe handling

General Handling Information: Avoid contaminating soil or releasing this material into sewage and drainage systems and bodies of water.

Precautionary Measures: Do not get in eyes, on skin, or on clothing. Do not taste or swallow. Wash thoroughly after handling.

Static Hazard: Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding may be necessary but may not, by themselves, be sufficient. Review all operations which have the potential of generating and accumulating an electrostatic charge and/or a flammable atmosphere (including tank and container filling, splash filling, tank cleaning, sampling, gauging, switch loading, filtering, mixing, agitation, and vacuum truck operations) and use appropriate mitigating procedures.

Container Warnings: Container is not designed to contain pressure. Do not use pressure to empty container or it may rupture with explosive force. Empty containers retain product residue (solid, liquid, and/or vapor) and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition. They may explode and cause injury or death. Empty containers should be completely drained, properly closed, and promptly returned to a drum reconditioner or disposed of properly.

7.2 Conditions for safe storage, including any incompatibilities

Not Applicable

7.3 Specific end use(s): Stationary Gas Engine Oil

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

GENERAL CONSIDERATIONS:

Consider the potential hazards of this material (see Section 2), applicable exposure limits, job activities, and other substances in the workplace when designing engineering controls and selecting personal protective equipment (PPE). If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, refer to PPE information below.

Factors that affect PPE include, but are not limited to: properties of the chemical, other chemicals which may contact the same PPE, physical requirements (fit & sizing, cut/puncture protection, dexterity, thermal protection, etc.), and potential allergic reactions to the PPE material. It is the responsibility of the user to read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances. Refer to appropriate CEN standards.

8.1 Control parameters

Occupational Exposure Limits:

Component	Country/ Agency	Form	TWA	STEL	Ceiling	Notation
Highly refined mineral oil (C15 - C50)	United Kingdom	--	5 mg/m ³	10 mg/m ³	--	--

Consult local authorities for appropriate values.

8.2 Exposure controls

ENGINEERING CONTROLS:

Use in a well-ventilated area.

PERSONAL PROTECTIVE EQUIPMENT

Eye/Face Protection: Wear protective equipment to prevent eye contact. Selection of protective equipment may include safety glasses, chemical goggles, face shields, or a combination depending on the work operations conducted.

Skin Protection: Wear chemical personal protective equipment (PPE) to prevent skin contact. Selection of chemical protective clothing should be performed by an Occupational Hygienist or Safety Professional and be based upon applicable standards (ASTM F739 or EN 374). Using chemical PPE depends upon operations conducted and may include chemical gloves, boots, chemical apron, chemical suit, and complete facial protection. Refer to PPE manufacturers to obtain breakthrough time information to determine how long PPE can be used before it needs to be replaced. Unless specific glove manufacturer data indicates otherwise, the below table is based upon available industry data to assist in the glove selection process and is intended to be used as reference only.

Chemical Glove Material	Thickness (mm)	Typical Breakthrough Time (minutes)
Butyl	0.7	120
Nitrile	0.8	240
Viton Butyl	0.3	240

Respiratory Protection: No respiratory protection is normally required. If user operations generate an oil mist, determine if airborne concentrations are below the occupational exposure limit for mineral oil mist. If not, wear an approved respirator that provides adequate protection from the measured concentrations of this material. For air-purifying respirators use a particulate cartridge.

ENVIRONMENTAL EXPOSURE CONTROLS:

See relevant Community environmental protection legislation or the Annex, as applicable.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Attention: the data below are typical values and do not constitute a specification.

9.1 Information on basic physical and chemical properties

Appearance

Color: Dark brown

Physical State: Liquid

Odor: Petroleum odor

Odor Threshold: No data available

pH: Not Applicable

Melting Point: Not Applicable

Freezing Point: Not Applicable

Initial Boiling Point: No data available

Flashpoint: (Cleveland Open Cup) 230 °C (446 °F) (Minimum)

Evaporation Rate: No data available

Flammability (solid, gas): Not Applicable

Flammability (Explosive) Limits (% by volume in air):

Lower: Not Applicable Upper: Not Applicable

Vapor Pressure: No data available

Vapor Density (Air = 1): No data available

Density: 0.88 kg/l - @ 15°C (59°F) (Typical)

Solubility: Soluble in hydrocarbons; insoluble in water

Partition coefficient: n-octanol/water: No data available

Auto-ignition temperature: No data available

Decomposition temperature: No data available

Viscosity: 119 mm²/s @ 40°C (104°F) (ASTM D445) (Typical)

Explosive Properties: No Data Available

Oxidising properties: No Data Available

9.2 Other Information: No Data Available

SECTION 10 STABILITY AND REACTIVITY

10.1 Reactivity: May react with strong acids or strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.

10.2 Chemical Stability: This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

10.3 Possibility of hazardous reactions: Hazardous polymerization will not occur.

10.4 Conditions to Avoid: Not applicable

10.5 Incompatible materials to avoid: Not applicable

10.6 Hazardous decomposition products: None known (None expected)

SECTION 11 TOXICOLOGICAL INFORMATION

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

Product Information:

Serious Eye Damage/Irritation: The material is not considered an eye irritant. The product has not been tested. The statement is based on evaluation of data for similar materials or product components.

Skin Corrosion/Irritation: The material is not considered a skin irritant. The product has not been tested. The statement is based on evaluation of data for similar materials or product components.

Skin Sensitization: The material is not considered a skin sensitizer. The product has not been tested. The statement is based on evaluation of data for similar materials or product components.

Acute Dermal Toxicity: The material is not considered a dermal toxicant. The product has not been tested. The statement is based on evaluation of data for similar materials or product components.

Acute Toxicity Estimate (dermal): Not Applicable

Acute Oral Toxicity: The material is not considered an oral toxicant. The product has not been tested. The statement is based on evaluation of data for similar materials or product components.

Acute Toxicity Estimate (oral): Not Applicable

Acute Inhalation Toxicity: The material is not considered an inhalation toxicant. The product has not been tested. The statement is based on evaluation of data for similar materials or product components.

Acute Toxicity Estimate (inhalation): Not Applicable

Germ Cell Mutagenicity: The material is not considered a mutagen. The product has not been tested. The statement is based on evaluation of data for similar materials or product components.

Carcinogenicity: The material is not considered a carcinogen. The product has not been tested. The statement is based on evaluation of data for similar materials or product components.

Reproductive Toxicity: The material is not considered a reproductive toxicant. The product has not been tested. The statement is based on evaluation of data for similar materials or product components.

Specific Target Organ Toxicity - Single Exposure: The material is not considered a target organ toxicant (single exposure). The product has not been tested. The statement is based on evaluation of data for similar materials or product components.

Specific Target Organ Toxicity - Repeated Exposure: The material is not considered a target organ toxicant (repeated exposure). The product has not been tested. The statement is based on evaluation of data for similar materials or product components.

Aspiration Hazard: The material is not considered an aspiration hazard.

Component Information:

Serious Eye Damage/Irritation:	
Highly refined mineral oil (C15 - C50)	Based on available data, the classification criteria are not met
Reaction mass of isomers of: C7-9-alkyl 3-(3,5-di-tert-butyl-4-hydroxyphenyl)propionate	Based on available data, the classification criteria are not met
Phenol, paraalkylation products with C10-15 branched olefins (C12 rich) derived from propene oligomerization, calcium salts, sulfurized including distillates (petroleum), hydrotreated, solvent-refined/dewaxed, cat. dewaxed, light/heavy paraffinic C15-C50	Based on available data, the classification criteria are not met
Benzenesulfonic acid, methyl-, mono-C20-24-branched alkyl derivs., calcium salts	Based on available data, the classification criteria are not met
Benzoic acid, 2-hydroxy-, mono-C>13-alkyl derivatives, calcium salts (2:1)	Based on available data, the classification criteria are not met

Skin Corrosion/Irritation:	
Highly refined mineral oil (C15 - C50)	Based on available data, the classification criteria are not met
Reaction mass of isomers of: C7-9-alkyl 3-(3,5-di-tert-butyl-4-hydroxyphenyl)propionate	Based on available data, the classification criteria are not met
Phenol, paraalkylation products with C10-15 branched olefins (C12 rich) derived from propene oligomerization, calcium salts, sulfurized including distillates (petroleum), hydrotreated, solvent-refined/dewaxed, cat. dewaxed, light/heavy paraffinic C15-C50	Based on available data, the classification criteria are not met
Benzenesulfonic acid, methyl-, mono-C20-24-branched alkyl derivs., calcium salts	Based on available data, the classification criteria are not met
Benzoic acid, 2-hydroxy-, mono-C>13-alkyl derivatives, calcium salts (2:1)	Based on available data, the classification criteria are not met

Skin Sensitization:	
Highly refined mineral oil (C15 - C50)	Based on available data, the classification criteria are not met
Reaction mass of isomers of: C7-9-alkyl 3-(3,5-di-tert-butyl-4-hydroxyphenyl)propionate	Based on available data, the classification criteria are not met
Phenol, paraalkylation products with C10-15 branched olefins (C12 rich) derived from propene oligomerization, calcium salts, sulfurized including distillates (petroleum), hydrotreated, solvent-refined/dewaxed, cat. dewaxed, light/heavy paraffinic C15-C50	Based on available data, the classification criteria are not met
Benzenesulfonic acid, methyl-, mono-C20-24-branched alkyl derivs., calcium salts	Test Result: May cause allergic skin reaction * read-across data from similar material
Benzoic acid, 2-hydroxy-, mono-C>13-alkyl derivatives, calcium salts (2:1)	Test Result: May cause allergic skin reaction

Acute Dermal Toxicity:	
Highly refined mineral oil (C15 - C50)	Based on available data, the classification criteria are not met

Reaction mass of isomers of: C7-9-alkyl 3-(3,5-di-tert-butyl-4-hydroxyphenyl)propionate	Based on available data, the classification criteria are not met
Phenol, paraalkylation products with C10-15 branched olefins (C12 rich) derived from propene oligomerization, calcium salts, sulfurized including distillates (petroleum), hydrotreated, solvent-refined/dewaxed,cat. dewaxed, light/heavy paraffinic C15-C50	Based on available data, the classification criteria are not met
Benzenesulfonic acid, methyl-, mono-C20-24-branched alkyl derivs., calcium salts	Based on available data, the classification criteria are not met
Benzoic acid, 2-hydroxy-, mono-C>13-alkyl derivatives, calcium salts (2:1)	Based on available data, the classification criteria are not met

Acute Oral Toxicity:

Highly refined mineral oil (C15 - C50)	Based on available data, the classification criteria are not met
Reaction mass of isomers of: C7-9-alkyl 3-(3,5-di-tert-butyl-4-hydroxyphenyl)propionate	Based on available data, the classification criteria are not met
Phenol, paraalkylation products with C10-15 branched olefins (C12 rich) derived from propene oligomerization, calcium salts, sulfurized including distillates (petroleum), hydrotreated, solvent-refined/dewaxed,cat. dewaxed, light/heavy paraffinic C15-C50	Based on available data, the classification criteria are not met
Benzenesulfonic acid, methyl-, mono-C20-24-branched alkyl derivs., calcium salts	Based on available data, the classification criteria are not met
Benzoic acid, 2-hydroxy-, mono-C>13-alkyl derivatives, calcium salts (2:1)	Based on available data, the classification criteria are not met

Acute Inhalation Toxicity:

Highly refined mineral oil (C15 - C50)	Based on available data, the classification criteria are not met
Reaction mass of isomers of: C7-9-alkyl 3-(3,5-di-tert-butyl-4-hydroxyphenyl)propionate	Based on available data, the classification criteria are not met
Phenol, paraalkylation products with C10-15 branched olefins (C12 rich) derived from propene oligomerization, calcium salts, sulfurized including distillates (petroleum), hydrotreated, solvent-refined/dewaxed,cat. dewaxed, light/heavy paraffinic C15-C50	Based on available data, the classification criteria are not met
Benzenesulfonic acid, methyl-, mono-C20-24-branched alkyl derivs., calcium salts	Based on available data, the classification criteria are not met
Benzoic acid, 2-hydroxy-, mono-C>13-alkyl derivatives, calcium salts (2:1)	Based on available data, the classification criteria are not met

Germ Cell Mutagenicity:

Highly refined mineral oil (C15 - C50)	Based on available data, the classification criteria are not met
Reaction mass of isomers of: C7-9-alkyl 3-(3,5-di-tert-butyl-4-hydroxyphenyl)propionate	Based on available data, the classification criteria are not met
Phenol, paraalkylation products with C10-15 branched olefins (C12 rich) derived from propene oligomerization, calcium salts, sulfurized including distillates (petroleum), hydrotreated, solvent-refined/dewaxed,cat. dewaxed, light/heavy paraffinic C15-C50	Based on available data, the classification criteria are not met
Benzenesulfonic acid, methyl-, mono-C20-24-branched alkyl derivs., calcium salts	Based on available data, the classification criteria are not met
Benzoic acid, 2-hydroxy-, mono-C>13-alkyl	Based on available data, the classification criteria are not met

derivatives, calcium salts (2:1)	
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Carcinogenicity:	
Highly refined mineral oil (C15 - C50)	Based on available data, the classification criteria are not met
Reaction mass of isomers of: C7-9-alkyl 3-(3,5-di-tert-butyl-4-hydroxyphenyl)propionate	Based on available data, the classification criteria are not met
Phenol, paraalkylation products with C10-15 branched olefins (C12 rich) derived from propene oligomerization, calcium salts, sulfurized including distillates (petroleum), hydrotreated, solvent-refined/dewaxed, cat. dewaxed, light/heavy paraffinic C15-C50	Based on available data, the classification criteria are not met
Benzenesulfonic acid, methyl-, mono-C20-24-branched alkyl derivs., calcium salts	Based on available data, the classification criteria are not met
Benzoic acid, 2-hydroxy-, mono-C>13-alkyl derivatives, calcium salts (2:1)	Based on available data, the classification criteria are not met

Reproductive Toxicity:	
Highly refined mineral oil (C15 - C50)	Based on available data, the classification criteria are not met
Reaction mass of isomers of: C7-9-alkyl 3-(3,5-di-tert-butyl-4-hydroxyphenyl)propionate	Based on available data, the classification criteria are not met
Phenol, paraalkylation products with C10-15 branched olefins (C12 rich) derived from propene oligomerization, calcium salts, sulfurized including distillates (petroleum), hydrotreated, solvent-refined/dewaxed, cat. dewaxed, light/heavy paraffinic C15-C50	Based on available data, the classification criteria are not met
Benzenesulfonic acid, methyl-, mono-C20-24-branched alkyl derivs., calcium salts	Based on available data, the classification criteria are not met
Benzoic acid, 2-hydroxy-, mono-C>13-alkyl derivatives, calcium salts (2:1)	Based on available data, the classification criteria are not met

Specific Target Organ Toxicity - Single Exposure:	
Highly refined mineral oil (C15 - C50)	Based on available data, the classification criteria are not met
Reaction mass of isomers of: C7-9-alkyl 3-(3,5-di-tert-butyl-4-hydroxyphenyl)propionate	Based on available data, the classification criteria are not met
Phenol, paraalkylation products with C10-15 branched olefins (C12 rich) derived from propene oligomerization, calcium salts, sulfurized including distillates (petroleum), hydrotreated, solvent-refined/dewaxed, cat. dewaxed, light/heavy paraffinic C15-C50	Based on available data, the classification criteria are not met
Benzenesulfonic acid, methyl-, mono-C20-24-branched alkyl derivs., calcium salts	Based on available data, the classification criteria are not met
Benzoic acid, 2-hydroxy-, mono-C>13-alkyl derivatives, calcium salts (2:1)	Based on available data, the classification criteria are not met

Specific Target Organ Toxicity - Repeated Exposure:	
Highly refined mineral oil (C15 - C50)	Based on available data, the classification criteria are not met
Reaction mass of isomers of: C7-9-alkyl 3-(3,5-di-tert-butyl-4-hydroxyphenyl)propionate	Based on available data, the classification criteria are not met
Phenol, paraalkylation products with C10-15 branched olefins (C12 rich) derived from propene oligomerization, calcium salts, sulfurized including distillates (petroleum), hydrotreated, solvent-refined/dewaxed, cat.	Based on available data, the classification criteria are not met

dewaxed, light/heavy paraffinic C15-C50	
Benzenesulfonic acid, methyl-, mono-C20-24-branched alkyl derivs., calcium salts	Based on available data, the classification criteria are not met
Benzoic acid, 2-hydroxy-, mono-C>13-alkyl derivatives, calcium salts (2:1)	Based on available data, the classification criteria are not met

ADDITIONAL TOXICOLOGY INFORMATION:

During use in engines, contamination of oil with low levels of cancer-causing combustion products occurs. Used motor oils have been shown to cause skin cancer in mice following repeated application and continuous exposure. Brief or intermittent skin contact with used motor oil is not expected to have serious effects in humans if the oil is thoroughly removed by washing with soap and water.

11.2 Information on other hazards

No other hazards identified.

SECTION 12 ECOLOGICAL INFORMATION

Product Information:

12.1 Toxicity

This material is not expected to be harmful to aquatic organisms. The product has not been tested. The statement has been derived from the properties of the individual components.

12.2 Persistence and degradability

This material is not expected to be readily biodegradable. The product has not been tested. The statement has been derived from the properties of the individual components.

12.3 Bioaccumulative potential

Bioconcentration Factor: No Data Available

Octanol/Water Partition Coefficient: No data available

12.4 Mobility in soil

No data available.

12.5 Results of PBT and vPvB assessment

This product is not, or does not contain, a substance that is a potential PBT or a vPvB.

12.6 Endocrine Disrupting Properties

This mixture does not contain any substances that are assessed as having endocrine disrupting properties.

12.7 Other adverse effects

No other adverse effects identified.

Component Information:

Acute Toxicity:	
Highly refined mineral oil (C15 - C50)	Based on available data, the classification criteria are not met
Reaction mass of isomers of: C7-9-alkyl 3-(3,5-di-tert-butyl-4-hydroxyphenyl)propionate	Protocol: OECD 202-Daphnia Immob/Repro Test Qualifier: EC50 Test Result: >100 mg/l Species: Invertebrate Duration:24 hour(s)
Phenol, paraalkylation products with C10-15 branched olefins (C12 rich) derived from propene oligomerization, calcium salts, sulfurized including distillates (petroleum), hydrotreated, solvent-	No test data available

refined/dewaxed, cat. dewaxed, light/heavy paraffinic C15-C50	
Benzenesulfonic acid, methyl-, mono-C20-24-branched alkyl derivs., calcium salts	Based on available data, the classification criteria are not met
Benzoic acid, 2-hydroxy-, mono-C>13-alkyl derivatives, calcium salts (2:1)	Based on available data, the classification criteria are not met

Long-term Toxicity:	
Highly refined mineral oil (C15 - C50)	Based on available data, the classification criteria are not met
Reaction mass of isomers of: C7-9-alkyl 3-(3,5-di-tert-butyl-4-hydroxyphenyl)propionate	No test data available
Phenol, paraalkylation products with C10-15 branched olefins (C12 rich) derived from propene oligomerization, calcium salts, sulfurized including distillates (petroleum), hydrotreated, solvent-refined/dewaxed, cat. dewaxed, light/heavy paraffinic C15-C50	No test data available
Benzenesulfonic acid, methyl-, mono-C20-24-branched alkyl derivs., calcium salts	Based on available data, the classification criteria are not met
Benzoic acid, 2-hydroxy-, mono-C>13-alkyl derivatives, calcium salts (2:1)	Based on available data, the classification criteria are not met

Biodegradation:	
Highly refined mineral oil (C15 - C50)	Based on available data, the classification criteria are not met
Reaction mass of isomers of: C7-9-alkyl 3-(3,5-di-tert-butyl-4-hydroxyphenyl)propionate	Protocol: OECD 301B-Modified Sturm Test Result: Not readily biodegradable Biodegradation: 2-4%
Phenol, paraalkylation products with C10-15 branched olefins (C12 rich) derived from propene oligomerization, calcium salts, sulfurized including distillates (petroleum), hydrotreated, solvent-refined/dewaxed, cat. dewaxed, light/heavy paraffinic C15-C50	Not applicable
Benzenesulfonic acid, methyl-, mono-C20-24-branched alkyl derivs., calcium salts	Based on available data, the classification criteria are not met
Benzoic acid, 2-hydroxy-, mono-C>13-alkyl derivatives, calcium salts (2:1)	Based on available data, the classification criteria are not met

Bioaccumulative Potential:	
Highly refined mineral oil (C15 - C50)	Based on available data, the classification criteria are not met
Reaction mass of isomers of: C7-9-alkyl 3-(3,5-di-tert-butyl-4-hydroxyphenyl)propionate	No test data available
Phenol, paraalkylation products with C10-15 branched olefins (C12 rich) derived from propene oligomerization, calcium salts, sulfurized including distillates (petroleum), hydrotreated, solvent-refined/dewaxed, cat. dewaxed, light/heavy paraffinic C15-C50	No test data available
Benzenesulfonic acid, methyl-, mono-C20-24-branched alkyl derivs., calcium salts	Based on available data, the classification criteria are not met

Benzoic acid, 2-hydroxy-, mono-C>13-alkyl derivatives, calcium salts (2:1)

Based on available data, the classification criteria are not met

SECTION 13 DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Use material for its intended purpose or recycle if possible. Oil collection services are available for used oil recycling or disposal. Place contaminated materials in containers and dispose of in a manner consistent with applicable regulations. Contact your sales representative or local environmental or health authorities for approved disposal or recycling methods.

In accordance with European Waste Catalogue (E.W.C.) the codification is the following:13 02 05

SECTION 14 TRANSPORT INFORMATION

The description shown may not apply to all shipping situations. Consult appropriate Dangerous Goods Regulations for additional description requirements (e.g., technical name) and mode-specific or quantity-specific shipping requirements.

ADR/RID

NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT

14.1 UN Number or ID Number: Not applicable

14.2 UN proper shipping name: Not applicable

14.3 Transport hazard class(es): Not applicable

14.4 Packing group: Not applicable

14.5 Environmental hazards: Not applicable

14.6 Special precautions for user: Not applicable

ICAO / IATA

NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT

14.1 UN Number or ID Number: Not applicable

14.2 UN proper shipping name: Not applicable

14.3 Transport hazard class(es): Not applicable

14.4 Packing group: Not applicable

14.5 Environmental hazards: Not applicable

14.6 Special precautions for user: Not applicable

IMO / IMDG

NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT

14.1 UN Number or ID Number: Not applicable

14.2 UN proper shipping name: Not applicable

14.3 Transport hazard class(es): Not applicable

14.4 Packing group: Not applicable

14.5 Environmental hazards: Not applicable

14.6 Special precautions for user: Not applicable

14.7 Maritime Transport in Bulk according to IMO Instruments: Not applicable

SECTION 15 REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture REGULATORY LISTS SEARCHED:

01=EU Directive 76/769/EEC: Restrictions on the marketing and use of certain dangerous substances.

02=EU Directive 90/394/EEC: Carcinogens at work.

03=EU Directive 92/85/EEC: Pregnant or breastfeeding workers.

04=EU Directive 2012/18/EU: Seveso III.
 05=EU Directive 98/24/EC: Chemical agents at work.
 06=EU Directive 2004/37/EC: On the protection of workers.
 07=EU Regulation EC No. 689/2008: Annex 1, Part 1.
 08=EU Regulation EC No. 689/2008: Annex 1, Part 2.
 09=EU Regulation EC No. 689/2008: Annex 1, Part 3.
 10=EU Regulation EC No. 850/2004: Prohibiting and restricting persistent organic pollutants (POPs).
 11=EU REACH, Annex XVII: Restrictions on manufacture, placing on the market and use of certain dangerous substances, mixture & article.
 12=EU REACH, Annex XIV: Authorization List or Candidate List of Substances of Very High Concern for Authorization (SVHC).

The following components of this material are found on the regulatory lists indicated.

Reaction mass of isomers of: C7-9-alkyl 3-(3,5-di- 05
 tert-butyl-4-hydroxyphenyl)propionate

CHEMICAL INVENTORIES:

All components comply with the following chemical inventory requirements: AIIIC (Australia), DSL (Canada), ENCS (Japan), NZIoC (New Zealand), PICCS (Philippines), TCSI (Taiwan), TSCA (United States).

One or more components is listed on ELINCS (European Union). All other components are listed or exempted from listing on EINECS.

15.2 Chemical safety assessment

No chemical safety assessment.

SECTION 16 OTHER INFORMATION

REVISION STATEMENT: SECTION 02 - Supplemental Hazard information was modified.

SECTION 08 - Eye/Face Protection information was modified.

SECTION 08 - General Considerations information was modified.

SECTION 08 - Personal Protective Equipment List information was deleted.

SECTION 08 - Personal Protective Equipment information was added.

SECTION 08 - Skin Protection information was modified.

SECTION 09 - Physical/Chemical Properties information was modified.

SECTION 15 - Chemical Inventories information was modified.

SECTION 15 - Regulatory Information information was modified.

SECTION 16 - Full Text of H-Statements information was modified.

Revision Date: January 24, 2023

Full text of CLP H-statements:

Aquatic Chronic 4/H413; May cause long lasting harmful effects to aquatic life

Skin Sens. 1/H317; May cause an allergic skin reaction

ABBREVIATIONS THAT MAY HAVE BEEN USED IN THIS DOCUMENT:

TLV - Threshold Limit Value	TWA - Time Weighted Average
STEL - Short-term Exposure Limit	PEL - Permissible Exposure Limit
CVX - Chevron	CAS - Chemical Abstract Service Number
NQ - Not Quantifiable	

Prepared according to the EU Regulation 1907/2006 (as amended) by Chevron Technical Center, 6001 Bollinger Canyon Road, San Ramon, CA 94583.

The above information is based on the data of which we are aware and is believed to be correct as of the date hereof. Since this information may be applied under conditions beyond our control and with which we may be unfamiliar and since data made available subsequent to the date hereof may suggest modifications of the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.

No Annex

Appendix B – Glycol Material Safety Data Sheet

Safety Data Sheet



SECTION 1 IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier

Delo XLC Antifreeze/Coolant - Premixed 40/60

Product Number(s): 804147

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified Uses: Antifreeze/Coolant

1.3 Details of the supplier of the safety data sheet

Chevron Products UK Limited
1 Westferry Circus
Canary Wharf
London E14 4HA
United Kingdom
email : eumsds@chevron.com

1.4 Emergency telephone number

Transportation Emergency Response

Europe: 0044/(0)18 65 407333

Health Emergency

Europe: 0044/(0)18 65 407333

Product Information

Product Information: FAX number: 0044/20 77 19 5171

SECTION 2 HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

CLP CLASSIFICATION:Target organ toxicant (repeated exposure): Category 2, H373.

2.2 Label elements

Under the criteria of Regulation (EC) No 1272/2008 (CLP):



Signal Word: Warning

Health Hazards: May cause damage to organs (Kidney) through prolonged or repeated exposure (H373).

- contains: Ethylene Glycol

PRECAUTIONARY STATEMENTS:

General: Keep out of reach of children (P102). If medical advice is needed, have product container or label at hand (P101).

Prevention: Do not breathe dust/fume/gas/mist/vapours/spray (P260).

Response: IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician (P301+P310).

Disposal: Dispose of contents/container in accordance with applicable local/regional/national/international regulations (P501).

2.3 Other hazards

This product is not, or does not contain, a substance that is a potential PBT or a vPvB.

SECTION 3 COMPOSITION/ INFORMATION ON INGREDIENTS

3.2 Mixtures

This material is a mixture.

COMPONENTS	CAS NUMBER	EC NUMBER	REGISTRATION NUMBER	CLP CLASSIFICATION	AMOUNT
Ethylene Glycol	107-21-1	203-473-3	01-2119456816-28	Acute Tox. 4/H302; STOT RE 2/H373	34 - < 80 %weight
Sodium 2-ethylhexanoate	19766-89-3	243-283-8	Exempt	Repr. 2/H361D	0.1 - < 3 %weight

The full text of all CLP H-statements is shown in Section 16.

This product contains a bittering agent.

SECTION 4 FIRST AID MEASURES

4.1 Description of first aid measures

Eye: No specific first aid measures are required. As a precaution, remove contact lenses, if worn, and flush eyes with water.

Skin: No specific first aid measures are required. As a precaution, remove clothing and shoes if contaminated. To remove the material from skin, use soap and water. Discard contaminated clothing and shoes or thoroughly clean before reuse.

Ingestion: If swallowed, get immediate medical attention. Do not induce vomiting. Never give anything by mouth to an unconscious person.

Inhalation: No specific first aid measures are required. If exposed to excessive levels of material in the air, move the exposed person to fresh air. Get medical attention if coughing or respiratory discomfort occurs.

4.2 Most important symptoms and effects, both acute and delayed

IMMEDIATE SYMPTOMS AND HEALTH EFFECTS

Eye: Not expected to cause prolonged or significant eye irritation.

Skin: Contact with the skin is not expected to be harmful.

Ingestion: May be harmful if swallowed.

Inhalation: Not expected to be harmful if inhaled. Breathing this material at concentrations above the recommended exposure limits may cause central nervous system effects. Central nervous system effects may include headache, dizziness, nausea, vomiting, weakness, loss of coordination, blurred vision, drowsiness, confusion, or disorientation. At extreme exposures, central nervous system effects may include respiratory depression, tremors or convulsions, loss of consciousness, coma or death.

DELAYED OR OTHER SYMPTOMS AND HEALTH EFFECTS: Contains material that may cause damage to the following organ(s) following repeated inhalation at concentrations above the recommended exposure limit: Kidney

4.3 Indication of any immediate medical attention and special treatment needed

Not applicable.

SECTION 5 FIRE FIGHTING MEASURES

5.1 Extinguishing media

Dry Chemical, CO₂, AFFF Foam or alcohol resistant foam.

5.2 Special hazards arising from the substance or mixture

Combustion Products: Highly dependent on combustion conditions. A complex mixture of airborne solids, liquids, and gases including carbon monoxide, carbon dioxide, and unidentified organic compounds will be evolved when this material undergoes combustion. Combustion may form oxides of: Sodium .

5.3 Advice for firefighters

This material will burn although it is not easily ignited. See Section 7 for proper handling and storage. For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment, including self-contained breathing apparatus.

SECTION 6 ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Eliminate all sources of ignition in vicinity of spilled material. Refer to Sections 5 and 8 for more information.

6.2 Environmental precautions

Stop the source of the release if you can do it without risk. Contain release to prevent further contamination of soil, surface water or groundwater.

6.3 Methods and material for containment and cleaning up

Clean up spill as soon as possible, observing precautions in Exposure Controls/Personal Protection. Use appropriate techniques such as applying non-combustible absorbent materials or pumping. Where feasible and appropriate, remove contaminated soil and dispose of in a manner consistent with applicable requirements. Place other contaminated materials in disposable containers and dispose of in a manner consistent with applicable requirements. Report spills to local authorities as appropriate or required.

6.4 Reference to other sections

See sections 8 and 13.

SECTION 7 HANDLING AND STORAGE

7.1 Precautions for safe handling

General Handling Information: Avoid contaminating soil or releasing this material into sewage and drainage systems and bodies of water.

Precautionary Measures: Do not get in eyes, on skin, or on clothing. Do not taste or swallow. Do not breathe vapor or fumes. Wash thoroughly after handling. Keep out of the reach of children.

Static Hazard: Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding may be necessary but may not, by themselves, be sufficient. Review all operations which have the potential of generating and accumulating an electrostatic charge and/or a flammable atmosphere (including tank and container filling, splash filling, tank cleaning, sampling, gauging, switch loading, filtering, mixing, agitation, and vacuum truck operations) and use appropriate mitigating procedures.

Container Warnings: Container is not designed to contain pressure. Do not use pressure to empty container or it may rupture with explosive force. Empty containers retain product residue (solid, liquid, and/or vapor) and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition. They may explode and cause injury or death. Empty containers should be completely drained, properly closed, and promptly returned to a drum reconditioner or disposed of properly.

7.2 Conditions for safe storage, including any incompatibilities

Not Applicable

7.3 Specific end use(s):Antifreeze/Coolant

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

GENERAL CONSIDERATIONS:

Consider the potential hazards of this material (see Section 2), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances. Refer to appropriate CEN standards.

8.1 Control parameters

Occupational Exposure Limits:

Component	Country/ Agency	TWA	STEL	Ceiling	Notation
Ethylene Glycol	EU-Indicative	52 mg/m ³	104 mg/m ³	--	Skin
Ethylene Glycol	United Kingdom	52 mg/m ³	104 mg/m ³	--	Skin

Consult local authorities for appropriate values.

8.2 Exposure controls

ENGINEERING CONTROLS:

Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below the recommended exposure limits. Use in a well-ventilated area.

PERSONAL PROTECTIVE EQUIPMENT

Eye/Face Protection: No special eye protection is normally required. Where splashing is possible, wear safety glasses with side shields as a good safety practice.

Skin Protection: No special protective clothing is normally required. Where splashing is possible, select protective clothing depending on operations conducted, physical requirements and other substances in the workplace. Suggested materials for protective gloves include: Natural rubber, Neoprene, Nitrile Rubber, Polyvinyl Chloride (PVC or Vinyl).

Respiratory Protection: Determine if airborne concentrations are below the recommended occupational exposure limits for jurisdiction of use. If airborne concentrations are above the acceptable limits, wear an approved respirator that provides adequate protection from this material, such as: Air-Purifying Respirator for Organic Vapors, Dusts and Mists. Use a positive pressure air-supplying respirator in circumstances where air-purifying respirators may not provide adequate protection.

ENVIRONMENTAL EXPOSURE CONTROLS:

See relevant Community environmental protection legislation or the Annex, as applicable.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Attention: the data below are typical values and do not constitute a specification.

9.1 Information on basic physical and chemical properties

Appearance

Color: Orange

Physical State: Liquid

Odor: Low odor
Odor Threshold: No data available
pH: 8.30 - 8.80
Melting Point: No data available
Freezing Point: -25°C (-25°F)
Initial Boiling Point: 109°C (228.2°F) (Estimated)
Flashpoint: Not Applicable
Flammability (solid, gas): No Data Available
Flammability (Explosive) Limits (% by volume in air):
Lower: No data available Upper: No data available
Vapor Pressure: No data available
Vapor Density (Air = 1): No data available
Density: 1 kg/l @ 15°C (59°F)
Solubility: Soluble in water.
Partition coefficient: n-octanol/water: No data available
Auto-ignition temperature: No data available
Decomposition temperature: No data available
Explosive Properties: No Data Available
Oxidising properties: No Data Available

9.2 Other Information: No Data Available

SECTION 10 STABILITY AND REACTIVITY

10.1 Reactivity: May react with strong acids or strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.

10.2 Chemical Stability: This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

10.3 Possibility of hazardous reactions: Hazardous polymerization will not occur.

10.4 Conditions to Avoid: Not applicable

10.5 Incompatible materials to avoid: Not applicable

10.6 Hazardous decomposition products: Ketones (Elevated temperatures), Aldehydes (Elevated temperatures)

SECTION 11 TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Serious Eye Damage/Irritation: The eye irritation hazard is based on evaluation of data for similar materials or product components.

Skin Corrosion/Irritation: The skin irritation hazard is based on evaluation of data for similar materials or product components.

Skin Sensitization: The skin sensitization hazard is based on evaluation of data for similar materials or product components.

Acute Dermal Toxicity: The acute dermal toxicity hazard is based on evaluation of data for similar

materials or product components.

Acute Toxicity Estimate (dermal): Not Applicable

Acute Oral Toxicity: The acute oral toxicity hazard is based on evaluation of data for similar materials or product components.

Acute Toxicity Estimate (oral): 3987 mg/kg

Acute Inhalation Toxicity: The acute inhalation toxicity hazard is based on evaluation of data for similar materials or product components.

Acute Toxicity Estimate (inhalation): Not Applicable

Germ Cell Mutagenicity: The hazard evaluation is based on data for components or a similar material.

Carcinogenicity: The hazard evaluation is based on data for components or a similar material.

Reproductive Toxicity: The hazard evaluation is based on data for components or a similar material.

Specific Target Organ Toxicity - Single Exposure: The hazard evaluation is based on data for components or a similar material.

Specific Target Organ Toxicity - Repeated Exposure: The hazard evaluation is based on data for components or a similar material.

Aspiration Toxicity: No data available

ADDITIONAL TOXICOLOGY INFORMATION:

This product contains ethylene glycol (EG). The toxicity of EG via inhalation or skin contact is expected to be slight at room temperature. The estimated oral lethal dose is about 100 cc (3.3 oz.) for an adult human. Ethylene glycol is oxidized to oxalic acid which results in the deposition of calcium oxalate crystals mainly in the brain and kidneys. Early signs and symptoms of EG poisoning may resemble those of alcohol intoxication. Later, the victim may experience nausea, vomiting, weakness, abdominal and muscle pain, difficulty in breathing and decreased urine output. When EG was heated above the boiling point of water, vapors formed which reportedly caused unconsciousness, increased lymphocyte count, and a rapid, jerky movement of the eyes in persons chronically exposed. When EG was administered orally to pregnant rats and mice, there was an increase in fetal deaths and birth defects. Some of these effects occurred at doses that had no toxic effects on the mothers. We are not aware of any reports that EG causes reproductive toxicity in human beings.

2-Ethylhexanoic acid (2-EXA) caused an increase in liver size and enzyme levels when repeatedly administered to rats via the diet. When administered to pregnant rats by gavage or in drinking water, 2-EXA caused teratogenicity (birth defects) and delayed postnatal development of the pups. Additionally, 2-EXA impaired female fertility in rats. Birth defects were seen in the offspring of mice who were administered sodium 2-ethylhexanoate via intraperitoneal injection during pregnancy.

SECTION 12 ECOLOGICAL INFORMATION

12.1 Toxicity

This material is not expected to be harmful to aquatic organisms. The product has not been tested. The statement has been derived from the properties of the individual components.

12.2 Persistence and degradability

This material is expected to be readily biodegradable. The product has not been tested. The statement has been derived from the properties of the individual components.

12.3 Bioaccumulative potential

Bioconcentration Factor: No Data Available

Octanol/Water Partition Coefficient: No data available

12.4 Mobility in soil

No data available.

12.5 Results of PBT and vPvB assessment

This product is not, or does not contain, a substance that is a potential PBT or a vPvB.

12.6 Other adverse effects

No other adverse effects identified.

SECTION 13 DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Use material for its intended purpose or recycle if possible. This material, if it must be discarded, may meet the criteria of a hazardous waste as defined by international, country, or local laws and regulations. In accordance with European Waste Catalogue (E.W.C.) the codification is the following: 16 01 14

SECTION 14 TRANSPORT INFORMATION

The description shown may not apply to all shipping situations. Consult appropriate Dangerous Goods Regulations for additional description requirements (e.g., technical name) and mode-specific or quantity-specific shipping requirements.

ADR/RID

NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT

14.1 UN number: Not applicable

14.2 UN proper shipping name: Not applicable

14.3 Transport hazard class(es): Not applicable

14.4 Packing group: Not applicable
14.5 Environmental hazards: Not applicable
14.6 Special precautions for user: Not applicable

ICAO

NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT

14.1 UN number: Not applicable
14.2 UN proper shipping name: Not applicable
14.3 Transport hazard class(es): Not applicable
14.4 Packing group: Not applicable
14.5 Environmental hazards: Not applicable
14.6 Special precautions for user: Not applicable

IMO

NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT

14.1 UN number: Not applicable
14.2 UN proper shipping name: Not applicable
14.3 Transport hazard class(es): Not applicable
14.4 Packing group: Not applicable
14.5 Environmental hazards: Not applicable
14.6 Special precautions for user: Not applicable
14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC code: Not applicable

SECTION 15 REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture REGULATORY LISTS SEARCHED:

01=EU Directive 76/769/EEC: Restrictions on the marketing and use of certain dangerous substances.
02=EU Directive 90/394/EEC: Carcinogens at work.
03=EU Directive 92/85/EEC: Pregnant or breastfeeding workers.
04=EU Directive 96/82/EC (Seveso II): Article 9.
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11=EU Regulation EC No. 850/2004: Prohibiting and restricting persistent organic pollutants (POPs).
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13=EU REACH, Annex XIV: Candidate List of Substances of Very High Concern for Authorization (SVHC).

The following components of this material are found on the regulatory lists indicated.

Ethylene Glycol

06

CHEMICAL INVENTORIES:

All components comply with the following chemical inventory requirements: AICS (Australia), DSL (Canada), EINECS (European Union), ENCS (Japan), IECSC (China), KECI (Korea), PICCS (Philippines), TSCA (United States).

15.2 Chemical safety assessment

No chemical safety assessment.

SECTION 16 OTHER INFORMATION

REVISION STATEMENT: This is a new Safety Data Sheet. No revision information

Revision Date: June 19, 2017

Full text of CLP H-statements:

H302; Harmful if swallowed

H361d; Suspected of damaging the unborn child

H373; May cause damage to organs through prolonged or repeated exposure

ABBREVIATIONS THAT MAY HAVE BEEN USED IN THIS DOCUMENT:

TLV - Threshold Limit Value	TWA - Time Weighted Average
STEL - Short-term Exposure Limit	PEL - Permissible Exposure Limit
CVX - Chevron	CAS - Chemical Abstract Service Number
NQ - Not Quantifiable	

Prepared according to the EU Regulation 1907/2006 by Chevron Energy Technology Company, 6001 Bollinger Canyon Road, San Ramon, CA 94583.

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No Annex