

CONTENTS

	Page
17 OTHER HUMAN ACTIVITIES	1
17.1 Introduction	1
17.2 Assessment Methodology	1
17.3 Existing Environment	1
17.4 Impacts during Construction	5
17.5 Impacts during Operation	7
17.6 Impacts during Decommissioning	7
17.7 Cumulative Effects	7
17.8 Summary	7

17 OTHER HUMAN ACTIVITIES

17.1 Introduction

This section describes the existing human activities within the Thanet Offshore Wind Farm (Thanet) area, which include aggregate extraction, marine disposal sites, military exercise areas, cables, pipelines, and unexploded ordnance. Commercial fisheries and navigation interests are discussed in **Sections 12, Commercial Fisheries** and **Section 14, Shipping and Navigation** respectively.

17.2 Assessment Methodology

Data collection and consultation has been undertaken with the key stakeholders in order to establish the presence of relevant offshore and onshore human activities and identify any potential conflicts. Fellows International Limited has undertaken a risk assessment for unexploded munitions contamination for the Thanet area (Fellows International, 2005).

17.3 Existing Environment

17.3.1 Oil and gas operations and ancillary structures

The Thanet site is not currently licensed for oil and gas exploration and production. It was included, as was the majority of the North Sea, within the blocks on offer for the 23rd Offshore Oil and Gas Licensing Round, which opened on 10th March 2005. This Licensing Round has now closed and the area overlapping the Thanet site has not been awarded to anyone for oil and gas exploration and production (www.dti.gov.uk). It is also considered extremely unlikely that any oil and gas reserves will be identified within this area in the future.

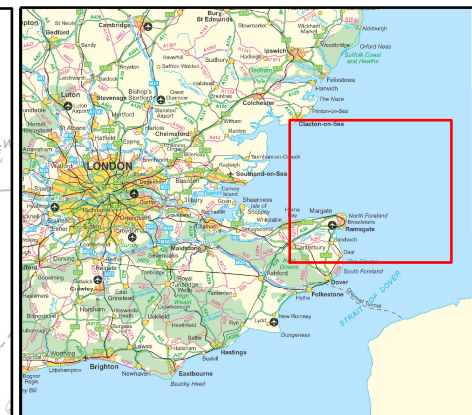
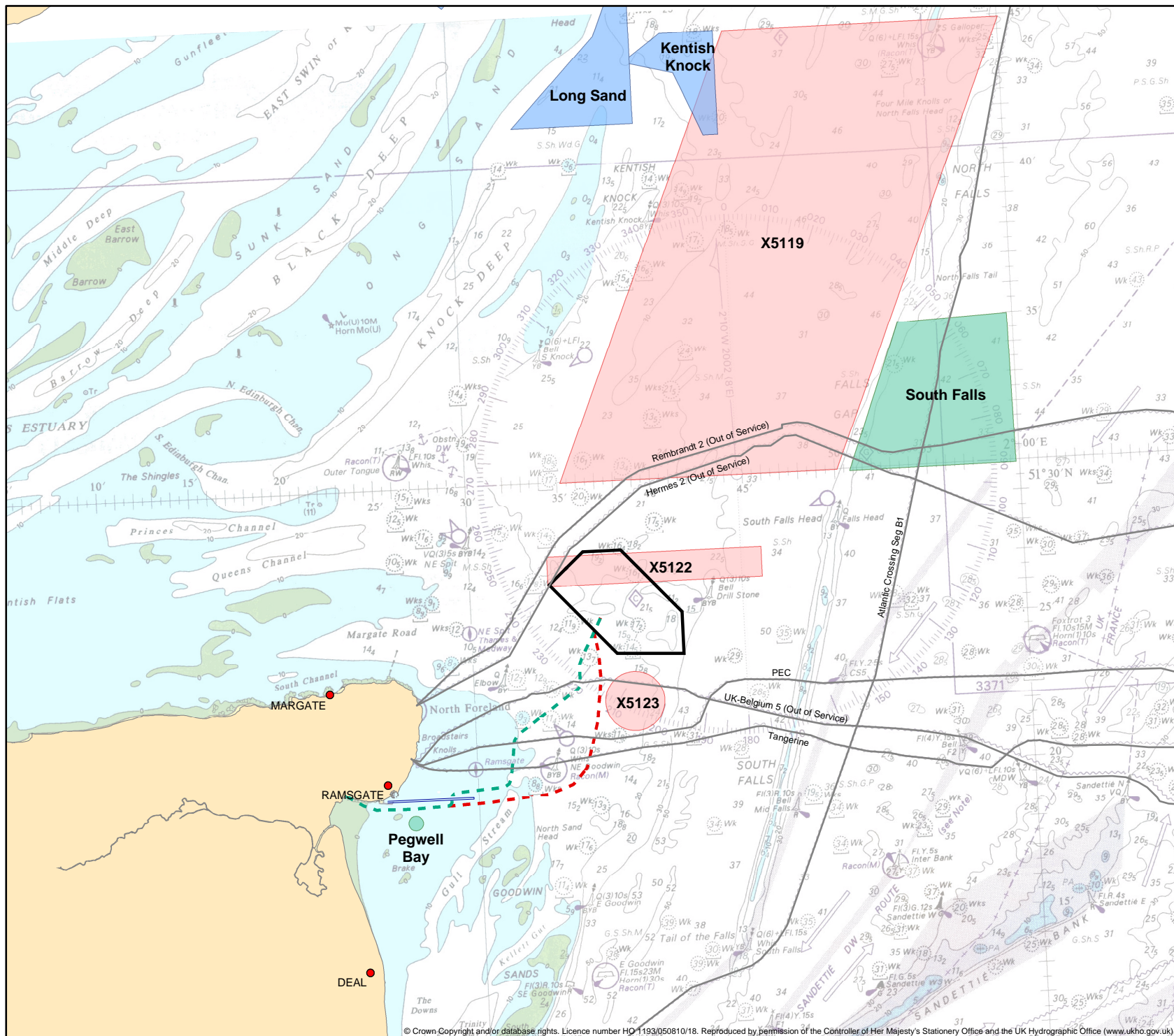
17.3.2 Aggregate extraction

Aggregate extraction activities are ongoing 24km to the north of the Thanet site at Kentish Knock and Long Sand. Dredger movements are mostly into the Thames Estuary, with some possible movements into the eastern English Channel (see **Figure 17.1**).









17.3.3 Marine disposal sites and capital and maintenance dredging activities

The nearest marine disposal sites are located to the south of the Thanet site in Pegwell Bay (TH140, Pegwell Bay) and to the east of the site at South Falls (South Falls) (see **Figure 17.1**). These sites receive silt and sand from routine maintenance dredging at the Port of Ramsgate and the Port of London Authority respectively.

No capital or maintenance dredging activities currently occur in the navigational approach channel into the Port of Ramsgate, although there are plans to deepen the navigation approach channel at some time in the future (see **Section 2, Project Details**).



Legend:

-  Wind Farm Site Location
-  Proposed Cable Route 1
-  Proposed Cable Route 2
-  Aggregate Extraction Sites
-  Practice and Exercise Areas
-  Marine Disposal Sites
-  Telecommunications Cables
-  Ramsgate Navigational Channel

Title:

OTHER HUMAN ACTIVITIES


Project:	THANET OFFSHORE WIND FARM
----------	---------------------------

Source: Main Chart - Not to be used for navigation.
© Haskoning UK Ltd.
Inset Map -
Derived from MiniScale by Ordnance Survey.
Crown Copyright. All rights reserved.
Licence number AL 100017728

Client: **THANET OFFSHORE WIND LTD**

Drawn by: SMG	Checked: SDG	Drawing No: 9P5164/06/801
------------------	-----------------	------------------------------

Date:	31/10/2005	Figure:	17.1
-------	------------	---------	------

Scale: 	Revision No: <div style="text-align: right;">004</div>
---	---



17.3.4 Telecommunications cables

The Thanet site lies within an area of relatively low density cabling with no in service cables passing directly through the site. The out of service telecommunications cable UK to Netherlands-9 used to pass through the site, but has been removed in recent years. However, a number of telecommunications cables still exist in the area and would require crossing by the export cables (see **Figure 17.1**). These are as follows:

- Tangerine, operated by Level 3 Communications Limited;
- Pan European Crossing (PEC), operated by Global Crossing Limited; and
- UK-Belgium 5, currently out of service, but operated by BT.

The northern perimeter of the wind farm is bounded by Hermes 2 and Rembrandt 2 telecommunications cables, operated by KPNQwest Network Ireland Limited, who is currently in administration. The closest turbines would be located over 400m away from the cable at its nearest point, and the Receiver has confirmed that he *“has no difficulty with the cables which Thanet proposes to lay”* (pers. comm. by McStay Luby, 2005).

UK-Belgium 5 cable has now been retired and is out of service and BT has advised that there is *“no need to worry about cable crossing engineering or agreements”* (pers. comm. by BT, 2005). Thanet Offshore Wind Limited (TOW) will ensure that the cable crossing is made in accordance with International Cable Protection Committee (ICPC) recommendation No.1 (ICPC, 2004).

Discussions are ongoing between TOW and Level 3 Communications Limited and Global Crossing Limited to agree the means of crossing their cables and ensure that the cables would not be affected by the export cable laying operations. It is anticipated that these would be based on the cable crossing best practice guidelines proposed by the ICPC (ICPC, 2001).

17.3.5 Military exercise areas

Military practice and exercise areas (PEXA) are areas of coastal waters, which are available for use or are in active use by the military, and in many cases involve the firing of live ammunition. In addition, these areas have a high potential to host unexploded ordnance. PEXA locations are identified by numbers prefixed by either a ‘D’ or an ‘X’. The prefix ‘D’ on the site serial number is used for areas, which extend above ground/sea level, whereas the prefix ‘X’ is used for areas in which the activities are carried out at the surface or sub-surface level.

A number of PEXA areas are relevant to the proposed wind farm. Area X5122 overlaps with the site, and areas X5123 and X5119 are approximately 1.1km to the south, and 4.2km to the north respectively (see **Figure 17.1**). All of these are Navy Department Areas, with X5119 and X5122 classed as Mine Counter Measures, while X5123 is Mine Disposal.

Initial consultation with the Ministry of Defence (MOD) indicates that they will not object to the Thanet project.

17.3.6 Unexploded ordnance

The Kent coast and adjacent sea area was the subject of considerable military action in both World Wars. A number of sunken vessels in the vicinity of the Thanet site are attributed to air dropped sea mines or bombs. The quantity of air dropped munitions is unclear and records show frequent air raids suspected of being of mine laying operations in the area.

Following World War II, general clearing operations were undertaken by both Allied and German mine sweepers. These consisted of sweeping the seabed with mooring lines to allow mines to come to the surface, where they were shot at until detonated or sunk. Official records state that approximately 30% of the mines were cleared during these operations. It cannot be discounted that unaccounted mines exist within the Thanet site.

There is an explosives dumping ground identified 1.1km to the south of the development zone, marked 'Spoil Ground' on the Admiralty Charts (see **Section 17.3.5**). The Royal Navy regularly uses this area as a demolition zone for recovered unexploded ordnance. The extent of the dumping ground may exceed that marked on the Admiralty Charts due to navigation errors whilst dumping and the effects of seabed migration moving weapons outside of the recognised zones.

Tidal action, seabed conditions, the movement of sandbanks, bottom trawling and wave action in shallow waters all contribute to the movement of objects on the seabed. It is documented that field trials have confirmed that sizable objects travel a fair distance in relatively short periods (Fellows International Limited, 2005).

Approximately five nautical miles to the east of the Thanet site, stretching across the southern North Sea to Belgium and France was a British defensive sea minefield, the Dover Strait Minefield. The minefield was laid in the early stages of World War II, deploying in excess of three hundred British Mk 17 mines.

As a result of the historic war time activities, unexploded ordnance may be present in the study area including:

- Sunken sea mines;
- Unexploded bombs from bombing range;
- Discarded munitions of returning aircraft to RAF Manston;
- Munitions from breaking wrecks; and
- Weapons dumped in the 'Spoil Ground' area including bombs, mines torpedoes and incendiary devices.

17.3.7 Recreational users

The Thames Estuary has a density of recreational sailing second in the UK only to the Solent area. Traversing the southern edge of the Thanet site is a route from the Kent coast to Europe, identified as being of light recreational use. Further south is a second route to Belgium, identified as being of medium recreational use (RYA and the Cruising Association, 2004). This is considered in more detail in **Section 14** and **Section 23, Coastal Tourism and Recreation**.

17.3.8 Water pipelines and outfalls

There is no discharge or surface water infrastructure e.g. wastewater treatment outfalls in the vicinity of the export cable route and landfall at the northern end of Pegwell Bay. Anecdotal information indicates that there is an unlicensed outfall from Kent International Airport near the landfall. In addition, three outfalls are reported to be present within the former Hoverport structure in Pegwell Bay (Geo-Environmental Services, 2005).

The nearby Weatherlees Hill Waste Treatment Works operated by Southern Water, which is located to the north of the disused Richborough Power Station, would not be affected.

17.4 Impacts during Construction

17.4.1 Impact on oil and gas operations and ancillary structures

No impacts on oil and gas operations are predicted due to the absence of interests in the area.

17.4.2 Impact on aggregate extraction

The Thanet project would not have any direct impact upon the aggregate extraction activities at Kentish Knock and Long Sand due to the significant distance of separation. However, any associated dredger movements making passage into the eastern English Channel may be affected by impacts of the site on navigation, although it is likely that the majority of traffic movements would be into the Thames Estuary. Production consents are in the process of being sought in new aggregate extraction areas in the eastern English Channel, which may lead to increased traffic entering the Thames Estuary. Impacts on navigation are discussed in **Section 14**.

17.4.3 Impact on marine disposal sites capital and maintenance dredging activities

No direct impact on the marine disposal sites at Pegwell Bay and South Falls are predicted other than potential indirect impacts associated with vessel movements (see **Section 14**).

The northern export cable route passes through the dredged navigation approach channel into the Port of Ramsgate. It is understood that the channel is kept clear by natural processes and by the propeller disturbance of larger vessels. Assuming no change to this situation, then the export cables would have **no impact**. However, it is understood that maintenance or capital dredging may be required in the future in order to accommodate expansion of the port's activities, putting the export cables and dredger at risk. This potential impact can be mitigated by locally increasing the cable burial depth and ensuring that the cable is sufficiently covered to prevent future impact damage from dredging, possible vessel grounding or anchor drag. The Harbour Master at the Port of Ramsgate has been consulted regarding present and future operations, and a cable burial depth of 11.0m below Chart Datum has been agreed in principle (see **Section 2**).

17.4.4 Impact on telecommunications cables

The export cable routes would cross three existing telecommunications cables to the southwest of the Thanet site. TOW will continue to consult with all three cable operators, with the objective of achieving an agreement on cable crossing procedures that would be followed during construction for each crossing required. Cable crossing is technically possible and the ICPC provides guidelines and procedures for designing cable crossings (ICPC, 2001) (see **Section 2**).

TOW has received confirmation from McStay Luby (23rd September 2005), who are the Receivers for KPNQwest Network Ireland Limited, which owns and operates the two cables located immediately to the northwest of the Thanet site, that they have no difficulty with the wind farm location relative to these telecommunications cables.

Given the various agreements, no operational disruption and **no impact** to the existing cables is anticipated during the construction phase of the export cable route.

17.4.5 Impacts due to unexploded ordnance

A number of hazards associated with unexploded ordnance have been identified. The Thanet site may have been subjected to marine and aerial disposal of ordnance during both World Wars. Construction vessels, which would have contact with the seabed either directly e.g. jack-up vessel, or via the placement of material such as foundations or scour protection, run the risk of disturbing ordnance with subsequent consequential effects.

Further to the desktop assessment already undertaken (Fellows International Limited, 2005), it is recommended that a munitions contamination survey is conducted over the wind turbines and jack-up vessel footprint, and export cable route with at least a 5m overlap around the perimeter.

Site safety instructions would be prepared to include necessary actions to be taken in the event that an item of ordnance is located. In addition, munitions awareness briefings would be given to all contractor's site and ship's staff prior to and during the construction phases.

Given that these measures are successfully implemented, a **minor adverse** impact is predicted.

17.4.6 Other impacts

Further investigation will be required to identify the unlicensed outfalls, which are known to be located at close distance to the landfall at the northern end of Pegwell Bay and those within the former hoverport structure. Liaison with Thanet District Council will be undertaken to ensure that **no adverse impact** would result during construction.

17.5 Impacts during Operation

17.5.1 Marine disposal sites and capital and maintenance dredging activities

Discussions have been ongoing between TOW and the Port of Ramsgate regarding the crossing of the navigation approach channel by the export cables in order to ensure that any requirement to extend the channel in the future would not be compromised. The maintained channel is currently at a depth of 7.5m below Chart Datum (CD). The export cables would be buried at to a minimum depth of 11.0m below CD (see **Section 2**) to ensure that capital dredging could take place in the future. Given agreement to the location and burial depth of the cable, **no impact** on the navigation approach channel is anticipated.

17.5.2 Unexploded ordnance

Tidal action, seabed conditions, the movement of sand waves, bottom trawling and wave action in shallow waters caused by bad weather all contribute to the movement of objects on the seabed. This means that there is a limited risk of ordnance moving into the Thanet site or export cable route. This would be relevant for maintenance and repair activities of cables and scour protection for example.

17.6 Impacts during Decommissioning

Impacts on human activities during decommissioning are anticipated to be similar to those discussed in construction for the wind farm site. It is anticipated at this stage that all above seabed structures would be removed and the export cables would be disconnected and left in place in order to minimise environmental impacts.

17.7 Cumulative Effects

No significant cumulative effects are anticipated with respect to human activities due to the distance separation between the Thanet site and other Round One and Round Two projects. Cumulative effects on navigation are discussed in **Section 14**.

17.8 Summary

Offshore human activities include oil and gas operations, marine aggregate extraction, marine disposal sites, telecommunications cables, military exercise areas and unexploded ordnance.

Data collection and consultation has been undertaken with the key stakeholders in order to establish the presence of relevant offshore and onshore human activities and identify any potential conflicts. Fellows International Limited has undertaken a risk assessment for unexploded munitions contamination for the Thanet area (Fellows International, 2005).

The Thanet site is not currently licensed for oil and gas exploration and production and it is considered extremely unlikely that any oil and gas reserves will be identified within this area in the future.

Aggregate extraction activities are ongoing 24km to the north of the site at Kentish Knock and Long Sand. The nearest marine disposal sites are located to the south of the site in Pegwell Bay (TH140) and to the east of the site at South Falls (see **Figure 17.1**). No capital or maintenance dredging activities currently occur in the navigation approach channel to the Port of Ramsgate. However, agreement in principle with the Harbour Master on burial depth of the export cable in the vicinity of this channel has been agreed to be 11m below Chart Datum.

The proposed export cable routes would cross three telecommunications cables to the southwest of the Thanet site. These are as follows:

- Tangerine, operated by Level 3 Communications Limited;
- Pan European Crossing (PEC), operated by Global Crossing Limited; and
- UK-Belgium 5, currently out of service but operated by BT.

The location and method of crossing the two in service cables would be agreed with the cable operators. A length of the out of service cable would be cut to allow unimpeded routing. The crossing methods for all three cables would be in accordance with industry recommendations (UKCPC, 2003). Separation distances with the two cables to the northwest of the Thanet site have been agreed in principle with the Receiver.

Military practice and exercise areas (PEXA) are areas of coastal waters, which are available for use, or are in active use by the military, and in many cases involve the firing of live ammunition. Three PEXA areas are relevant to the Thanet site. Area X5122 overlaps with the site, and areas X5123 and X5119 are approximately 1.1km to the south and 4.2km to the north respectively. Initial consultation with the Ministry of Defence (MOD) indicates that they will not object to the Thanet project.

A desktop assessment on the munitions contamination in the area has been undertaken by Fellows International Limited (2005). The study concludes that as a result of the historic war time activities, unexploded ordnance may be present in the Thanet area including:

- Sunken sea mines;
- Unexploded bombs from bombing range;
- Discarded munitions of returning aircraft to RAF Manston;
- Munitions from breaking wrecks; and
- Weapons dumped in the 'Spoil Ground' area including bombs, mines torpedoes and incendiary devices.

In order to minimise any impacts during construction, it is recommended that a munitions contamination survey be conducted over the wind turbines and jack-up vessel footprint, and export cable route with at least a 5m overlap around the perimeter. Given that these measures are successfully undertaken, a **minor adverse** impact is predicted.

There is no discharge or surface water infrastructure e.g. wastewater treatment outfalls in the vicinity of the export cable route and landfall in Pegwell Bay. Anecdotal information indicates that there is an unlicensed outfall from Kent International Airport

near the landfall at the northern end of Pegwell Bay. In addition, three outfalls are reported to be present within the former Hoverport structure in Pegwell Bay (Geo-Environmental Services, 2005). Liaison with the owners will be undertaken to ensure that **no adverse** effect would result during construction.

The nearby Weatherlees Hill Waste Treatment Works operated by Southern Water, located to the north of the disused Richborough Power Station, would not be affected.