Borough Council of
King's Lynn &
West Norfolk

Environment and Planning

Contaminated Land Inspection Report

Potential Landfill,
Docking Common (Docking No1),
Fakenham Road, Docking

June 2018

Reference no. CL13

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Executive Summary

The Borough Council of King's Lynn and West Norfolk (BCKLWN) has a statutory duty to inspect its district for potentially contaminated land under Part 2A of the Environmental Protection Act 1990. The contaminated land inspection strategy has identified the former landfill at Docking Common as a site which requires detailed inspection.

This site is a former landfill which was operated by Norfolk County Council, within the district of King's Lynn. An initial assessment of the site was undertaken to assess the potential for harm to human health, controlled waters and property under Part 2A.

To gather information of the site's history a desk study and preliminary risk assessment were carried out by the Environmental Quality Team. From the evidence gathered during the desk study of the site history and a site walkover, the following can be stated:

- The site was a historical mineral working which was subsequently used as a landfill.
- Uncontrolled filling has occurred
- The site did not have a licence or a permit.
- An investigation has been conducted by Norfolk County Council on the neighbouring landfill (Docking Landfill) which indicated that there is some contamination leaching from the landfills but has concluded that this is not adversely affecting the environment.
- Norfolk County Council will continue to monitor the sites as a precaution in case the situation changes.

Following the initial assessment it was concluded that no additional information was required to characterise and categorise the site. This indicated that the site in its current use is unlikely to pose a significant risk to human health or property. There is not a strong case for taking action under Part 2A EPA 1990 and the therefore the site has been classified into category 4 regarding the risk to human health. No evidence was found of significant pollution or significant possibility of such pollution of controlled waters.

Therefore the site is not considered to be contaminated land under Part 2A of the Environmental Protection Act 1990.

1. Introduction

This report details a review of information and written statement about a former landfill at Docking Common, King's Lynn and provides a conclusion on the risk to human health, property, groundwater and the wider environment.

The Contaminated Land Statutory Guidance (DEFRA, 2012) suggests that where the authority has ceased its inspection and assessment of land as there is little or no evidence to suggest that it is contaminated land the authority should issue a written statement to that effect. This document provides that written statement.

2. Desk Study Information

Location

The site's location is shown in Appendix B. The grid reference for the centre of the site is 579041, 335638 and the nearest postcode is PE31 8NW.

Initial Prioritisation Score

The site was initially assessed as having a 'Very High' Potential Hazard Rating due to the risk to groundwater.

Previous Site Usage

The site (drawing CL13/101) was a sand and gravel pit, which has been used as a landfill.

Present Site Usage

Its present use comprises an open field which is accessed by a road from the south. To the south is an industrial areas beyond which are residential properties.

Ownership

Enquiries have been made to establish land ownership. This report will be made available to the site owners.

Environmental Setting

Geology

The Solid and Drift Geology Sheet 160, 1:50,000, 1999 and Regional Hydrological Characteristics Sheet 1 1:125 000 shows the site surface is approximately to vary between 5 and 8 meters above ordnance datum (maOD).

The bedrock geology is the Lewes Nodular Chalk Formation, Seaford Chalk Formation, Newhaven Chalk Formation & Culver Chalk Formation.

The superficial deposits are recorded as Briton's Lane Sand and Gravel Member - Sand and Gravel.[1]

[1] BGS website: http://mapapps.bgs.ac.uk/geologyofbritain/home.html

Hydrogeology

The site is on land classified as a principle aquifer but not within a Source Protection Zone (SPZ) (Environment Agency Website).

The Principle Aquifer comprises the Lewes Nodular Chalk Formation, Seaford Chalk Formation, Newhaven Chalk Formation, Culver Chalk Formation, which has an intermediate permeability allowing it transmit pollutant easily.

The superficial deposits are designated as a Secondary Aquifer (Undifferentiated)

Hydrology

The nearest water feature is a pond approximately 900mwest of the site.

There are no surface water abstraction points within 1000m. No private water or Environment Agency licenced abstractions exists on site or within 500m.

Local Authority Pollution Prevention and Control Regulations

No LAPPC processes are on site or within 500m of the site.

The Environment Agency Web site records

The Environment Agency Web site records the following:

- The site is not at risk from flooding.
- The site is within a Priority Waters Area and is vulnerable to Nitrate (Groundwater).
- The site is covered by a Surface Water Safeguard Zone.
- The site is covered by an area associated with 'Rivers at risk from agricultural Sediment'.
- The site is covered by the Proposed 2017 Nitrate Vulnerable Zone (NVZ) for Groundwater, with a NVZ number G71.
- The site is covered by a 'Surface Water Safeguard Zone'.
- The superficial deposits beneath the site are not classified as being an Aquifer.
- The bedrock beneath the site is a Principal Aquifer.
- The groundwater has intermediate vulnerability at this location.
- The site is recorded as being a landfill.
    - Named Docking No.1, Operated by the Norfolk County Council for the deposition of Inert, Industrial, Commercial & Household. Waste. Start date 2nd January 1978, finish date 1st January 1986, no licence number is given.
- No pollution incidents are recorded on site or within 1km of the site.

MAGIC website records

MAGIC website records the following

- The site is covered by the MMO Marine Areas (England)
- The site is covered by the Woodland Priority Habitat Network (partially Lower Spatial Priority and partially High Spatial Priority).

- The site is a part of a Farm Wildlife Package Area (England).
- The site is covered by a Countryside Stewardship Water Quality Priority Area. (England). (High Priority)

Historic Maps

E-map Explorer

Enclosure Map 1800 - 1850 – Not available

Tithe map circa 1840– The landfill has not been developed and consists of four separate field's number 408 to 411.

Ordnance Survey 1st Ed. 1879-1886 – The field are as depicted in the Tithe map but are no longer numbered. Two gravel pits are depicted to the northwest and southeast of the site.

Historic Maps on file at the Borough Council of King's Lynn and West Norfolk

1843 – 1893: The site is as depicted on the 1st Ordnance Survey Map, but shows a little bit more detail. The site forms fields 178, 180 and part of 181.

1891 – 1912: The site and surrounding area are as above.

1904 – 1939: Not available.

1919 – 1943: Not available.

1945 – 1970: The site is now depicted as being two thirds scrub and the approximately a third comprising a field.

1970 – 1996: Not available.

Aerial Photographs

1945 – 1946 MOD Aerial Photograph - The site is shown as a field. An area of vegetated rough ground is to the northwest. This is considered to be the gravel pit depicted in the OS first edition.

1988 Aerial Photograph - The site is shown as a field. The area of rough ground to the north has now been extensively excavated.

1999 Aerial Photograph – The site is as described above.

2006-09 Aerial Photograph – The site is as described above.

Planning History

No planning application exists in the Borough Council records relating to the site.

Two Norfolk County Council planning applications exist for the site on the County Council's website. These are detailed in Appendix C.

Environment Agency Records
Not consulted.

Norfolk County Council Records
Norfolk County Councils records relating to the site were viewed and the following information was obtained:

- The site was operated by Mr Jacobs as a sand and gravel extraction pit.
- Norfolk County Council had a series of issues with the operation of the site and was considering taking enforcement action over breaches of conditions.
- The planning permission for the use of the site as a landfill was not available.
- A report on ground gas monitoring undertaken on the site between August 1992 and May 2012 has been provided for review.
- A Hydrological Review undertaken by Mott MacDonald on the adjacent landfill to assess the potential risk to groundwater in July 2007 has been provided for review.

The ground gas risk assessment indicates that both Carbon Dioxide and Methane have decreased in output since monitoring began. The maximum level of Methane was recorded in April 1998 with 82% being recorded, which had decreased to 4.5% by May 2012.

Norfolk County Council provided a report which assessed the potential risk to groundwater from the adjacent landfill (Docking II). This indicated that the site (Docking I) had been quarried for sand and gravel after which it was used as a landfill. The landfill was indicated to be unlined and was designated as a dilute and disperse landfill.

Further information indicates that Docking I was used to deposit significant amounts of concrete, which anecdotally was derived from RAF Sculthorpe. Norfolk County Council Records indicate that the site had been used to dispose of car bodies and bulky scrap. The records also indicate that the site had had issues with vermin which would indicate that putrescible waste had been disposed of at the site. Copies of letters indicate that there were issues with fires on site and the disposal of paper.

The hydrogeological review assessed the potential risk to groundwater from Docking II. The report contains chemical analysis of groundwater samples collected from boreholes some of which were positioned to the north of Docking I. Groundwater flow direction is assumed to be to the north. Therefore it has been assumed that any contamination arising from Docking 1 would have detected in these boreholes. The results of the chemical analysis of the samples indicated that List I and List II substances were present in the groundwater at levels which exceeded the Groundwater Regulations.

The report concluded that ‘The data collected since capping show that the site fails to comply with the Groundwater Regulations due to continuing input of one List I

substance, Mecoprop, to the groundwater in the Chalk aquifer. However, the measured concentrations in groundwater close to and immediately downgradient of the site are very variable, and both monitoring and risk assessment indicate that the impact is likely to be localised. Other List I substances (Trichloroethene, cis-1,2-dichloroethene, 1,1-Dichloroethane and 1,2-Dichloroethane) detected in groundwater have not been detected in the leachate since capping and are thus attributed to historical contamination with no ongoing input. This interpretation is supported by the observed decline in concentrations of these substances with time.

The landfill is an ongoing source of one List II substance, ammonia. Risk assessment, calibrated with observed concentrations, showed that the degradation rates are extremely rapid, thus the ammonia will not reach the sensitive receptor of the North Norfolk Coast at concentrations in excess of the EQS. The closer potential receptors are spray irrigation boreholes which are not sensitive to low concentrations of ammonia. Therefore for List II substances, Docking II is considered to comply with the Groundwater Regulations.'

3. Site Walkover

A site visit was carried out by an Environmental Quality Officer of the Borough Council of King's Lynn and West Norfolk on 24/04/2018 and the following was noted. Photographs are presented in the Appendix A.

The site was accessed by a locked gate on the south western boundary of the site along the B1454. The site is a grassed area with a slight dome in the centre of the site. Numerous gas monitoring installations were noted across the centre of the site and several ground water abstraction wells were noted around the boundary. A compound containing monitoring equipment was noted in the eastern corner of the site. On the south eastern and north eastern boundaries were dry ditches.

To the north-east beyond the site boundary is arable farm land. To the south-east is a residential property and industrial unit. To the south-west beyond the B1454 (Fakenham Road) and to the west were forests. To the north was a depression associated with Docking II landfill further to the northwest. No waste was noted on the surface of the site or in the ditches.

4. Assessment of Site Use

From the assessment of the site using County Council data, historic maps, aerial photography and a site walk over it has been possible to conclude that the site has been used for mineral extraction. The site was then used as a landfill. Anecdotal evidence indicates that uncontrolled waste disposal had been undertaken at Docking I and the adjacent landfill (Docking II) out of hours of the landfills operation.

Assessment of probability of a contamination event

The site was a quarry which has ceased being used or mineral extraction. The site has been used as a landfill, for the deposition of Inert, Industrial, Commercial and Household Waste.

Human Health

The site has undergone landfilling and has been capped and it is considered that there is no contaminant pathway and that the probability of a contamination event effecting human health (via direct contact or inhalation) is UNLIKELY.

Property

The site and area do not contain any of the receptors stipulated in Table 3 of the Statutory Guidance as presented in Appendix E. No designated receptors are present and therefore no pollution linkage is present.

Environment

The site and area do not contain any of the receptors stipulated in Table 2 of the Statutory Guidance as presented in Appendix E. No designated receptors are present and therefore no pollution linkage is present. As such this will not be assessed further.

Controlled Water

Groundwater

Given the age of the site it is considered the landfill would have been designed as a 'dilute and disperse' landfill. This would indicate that the any leachable contamination which was placed in the landfill would be able to migrate directly into the groundwater of the Major Aquifer. Therefore the probability of a contamination event affecting groundwater's is considered to be HIGH.

Surface Water

If any surface water receptors are present and in direct hydrological continuity with the groundwater or be sourced from the groundwater, then any mobile contamination present within the groundwater would impact the surface waters. No surface water feature is noted within 500m of the site and no major water features are noted within 1km of the site. Therefore the probability of a contamination event affecting surface waters is considered to be UNLIKELY.

Assessment of Hazard

The risks posed by the site have been assessed separately under the separate statutory guidance, the Contaminated Land Statutory Guidance. This is discussed further below:

Human Health

The site has been used as a landfill for the disposal of commercial, industrial household. Given the lack of documented information relating to what was disposed of at the landfill it is considered that the hazard to human health is considered MEDIUM.

Property

The site and area do not contain any of the receptors stipulated in Table 3 of the Statutory Guidance as presented in Appendix E. As no receptor exists no hazard is considered to be present.

Environment

The site and area do not contain any of the receptors stipulated in Table 2 of the Statutory Guidance as presented in Appendix E. As no receptor exists no hazard is considered to be present.

Controlled Water

The site is a former quarry which has been used as a 'dilute and disperse' landfill. The material landfilled was supposed to be inert, Industrial and commercial wastes, however information from Norfolk County Council records indicate that other wastes including scrap cars were deposited in the landfill although the majority of wastes landfilled are considered to be inert. Therefore the hazard is considered to be MEDIUM.

Conceptual site model

The conceptual site model (Table 1) shows the sources, pathways and receptors identified and the subsequent risk classification.

Table 1: Preliminary conceptual site model

Source	Pathway	Receptor	Probability	Hazard	Risk
Metals and metalloids within waste material	Direct contact Inhalation	Humans	Unlikely	Medium	Low
Metals and metalloids within waste material	Direct Contact Inhalation	Property	N/A	N/A	N/A
Metals and metalloids within waste material	Direct contact	Environment	N/A	N/A	N/A
Metals and metalloids within waste material	Direct contact	Groundwater Surface Water	High Unlikely	Medium Medium	Moderate Low

The geological cross section of Docking II from 'Docking Closed Landfill Site Hydrogeological Review' produced by Mott MacDonald has been reproduced below and is considered to represent the geology of the adjacent Docking II landfill.

Figure 1: Geological cross section through Docking II landfill site

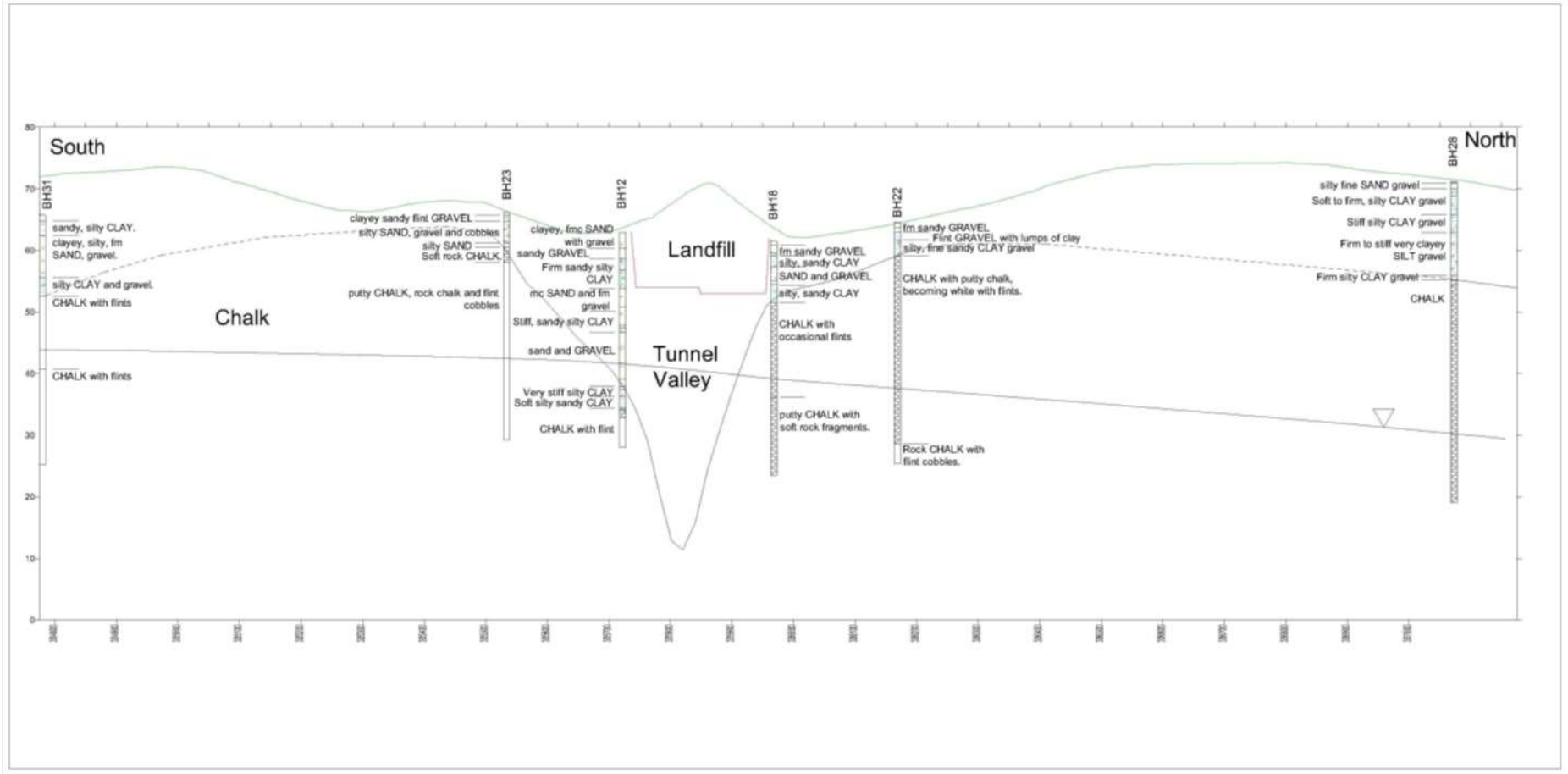


Figure A.7: Geological cross section through Docking II landfill site. Docking Closed Landfill Site Hydrogeological Review, July 2007, Mott Macdonald, Norfolk County Council

5 Outcome of Preliminary Risk Assessment

A significant plausible source pathway receptor linkage was identified. Therefore further investigation is considered necessary. However, the adjacent site (Docking 2) has been investigated by Norfolk County Council and it has been concluded that the groundwater has not been significantly impacted by the leachate from Docking 2. Therefore as Docking 1 is adjacent to Docking 2 and any leachate from Docking 1 would have been detected in the assessment of Docking 2, no further site investigation will be undertaken.

Conclusion

From the information gathered and the site walkover it is apparent that the site was excavated for sand and gravel the excavation was then backfilled with waste material.

No evidence was noted of significant harm and there is not a strong case to consider that the risks from the land are of sufficient concern that the land poses a significant possibility of significant harm to Humans (via direct contact, ingestion and inhalation), Property, Environmental Receptors or Controlled Water as defined in the statutory guidance. CIRIA C552 states that on a site with a very low risk classification 'There is a low possibility that harm could arise to a receptor. In the event of such harm being realised it is not likely to be severe.'[2]

Human Health

Following the above assessment the site is assessed as Category 4: Human Health[3] as set out in the Statutory Guidance, as such no further assessment is considered necessary with regards to the risk to human health.

Controlled Waters

No further inspection is considered to be required with regards to controlled waters as risk assessments by Norfolk County Council indicate that that there is no reasonable possibility that a significant contaminant linkage exists as set out in the Statutory Guidance [4]. This assessment applies to the site's current use.

No further assessment of the site is considered necessary unless additional information is discovered or if the site is considered for redevelopment.

Part 2A status of the site

The site is not considered to be contaminated land under Part 2A of the Environmental Protection Act 1990.

[2] Contaminated land risk assessment. A guide to good practice. CIRIA C552, ISBN 0860175529.
[3] Appendix E sets out the categories of land in the Contaminated Land Statutory Guidance.
[4] (Contaminated Land Statutory Guidance April 2016)
2.13. If at any stage the local authority considers, on the basis of information obtained from inspection activities, that there is no longer a reasonable possibility that a significant contaminant linkage exists on the land, the authority should not carry out any further inspection in relation to that linkage.

Further Action

This assessment is based on the site's current use and is valid providing no changes are made to the soil or vegetation cover material, to surface water conditions or to the site's use.

No further assessment of the site is considered necessary under Part 2A unless additional information is discovered or if changes are made to the site

Appendices

Appendix A Site Photographs

Photograph 1.

Photograph 2.

Photograph 3

Photograph 4

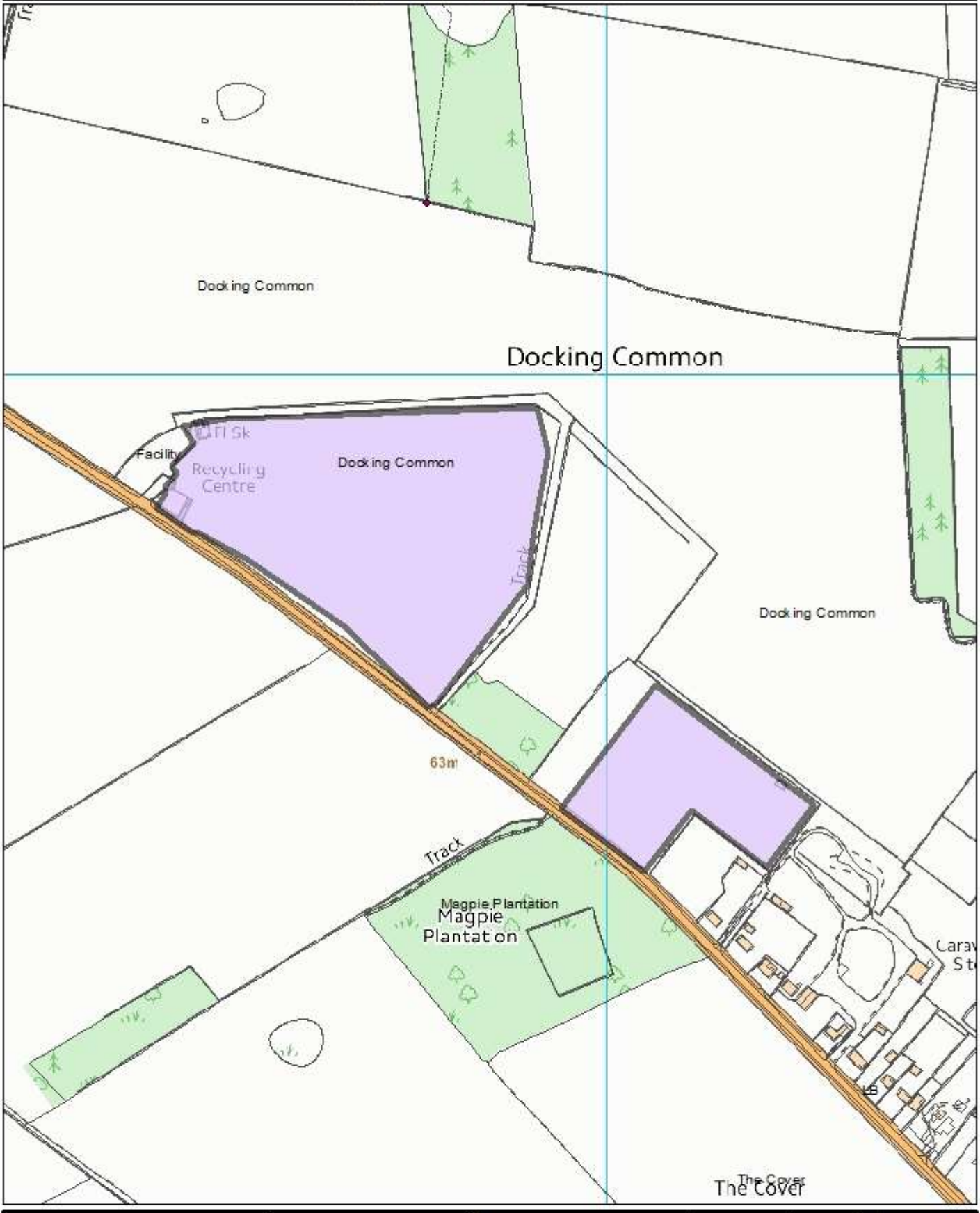
Photograph 5.

Photograph 6.

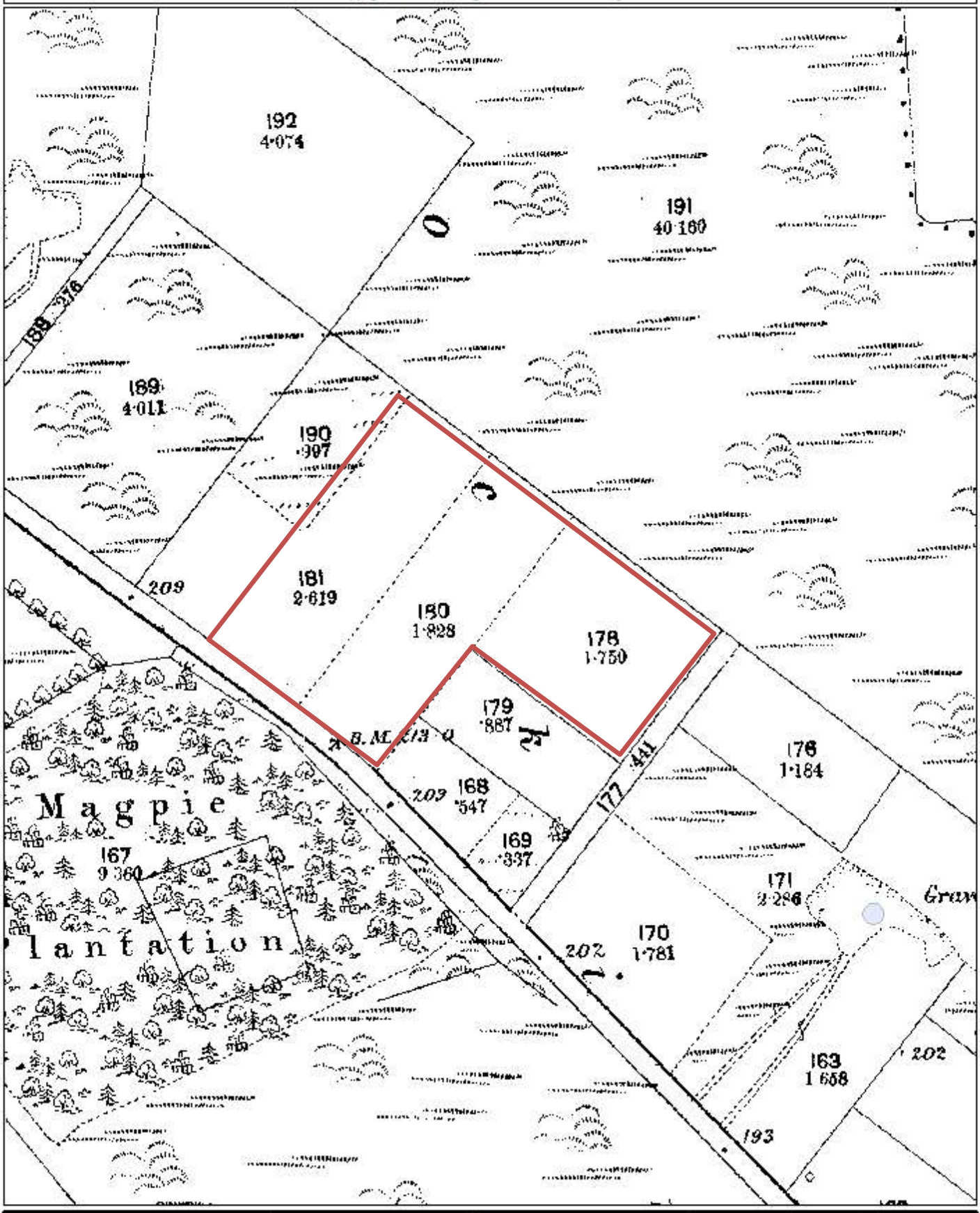
Photograph 7.

Photograph 8.

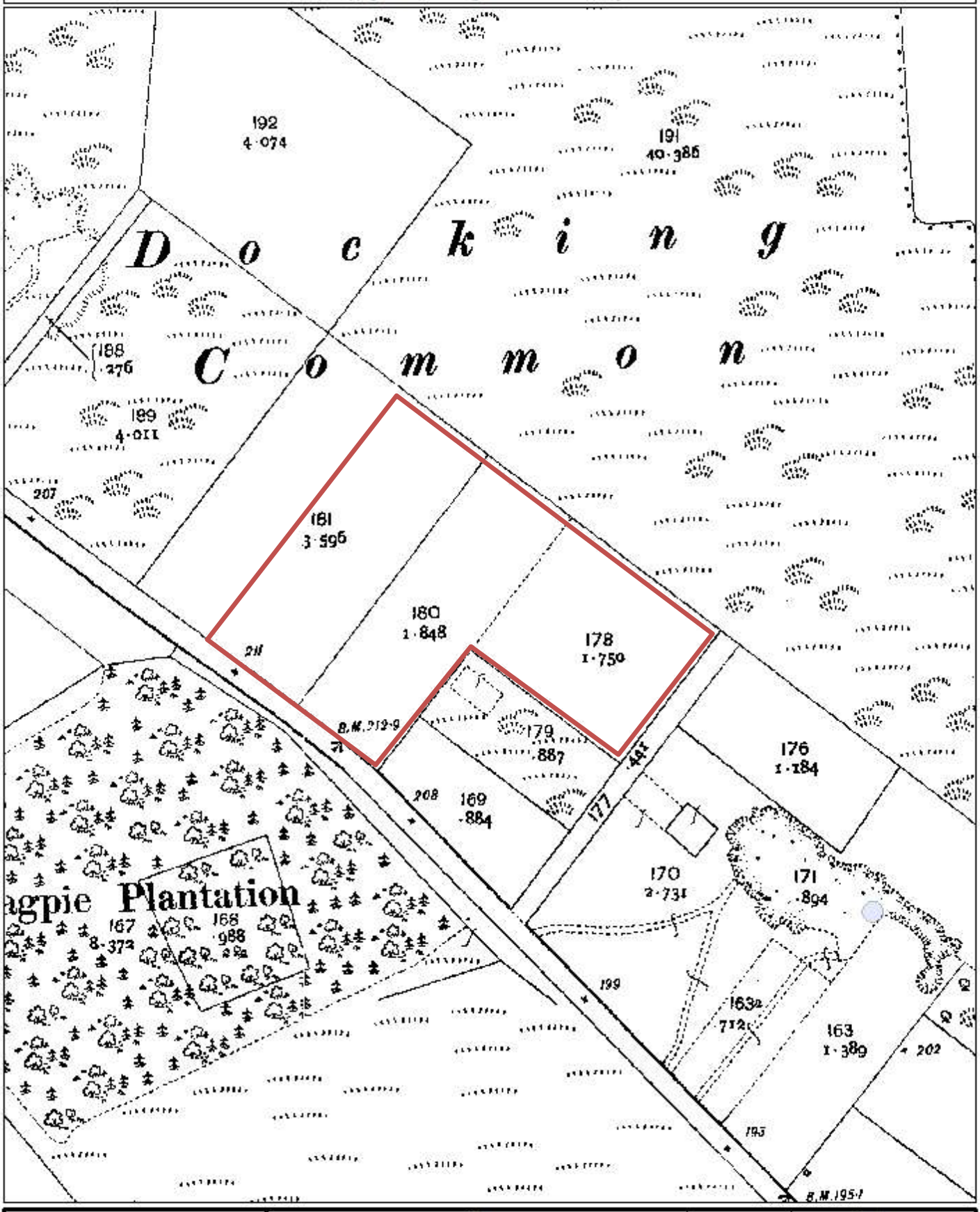
Appendix B Drawings



Borough Council of King's Lynn & West Norfolk Tel. 01553 616200 - Fax. 01553 691663	Title: Site Plan	N W E S	Scale: 1:5,000 Date: January 2018
	Project / Details: Docking Common		Drawn by: EH&H Drawing / Reference Number: CL13/101



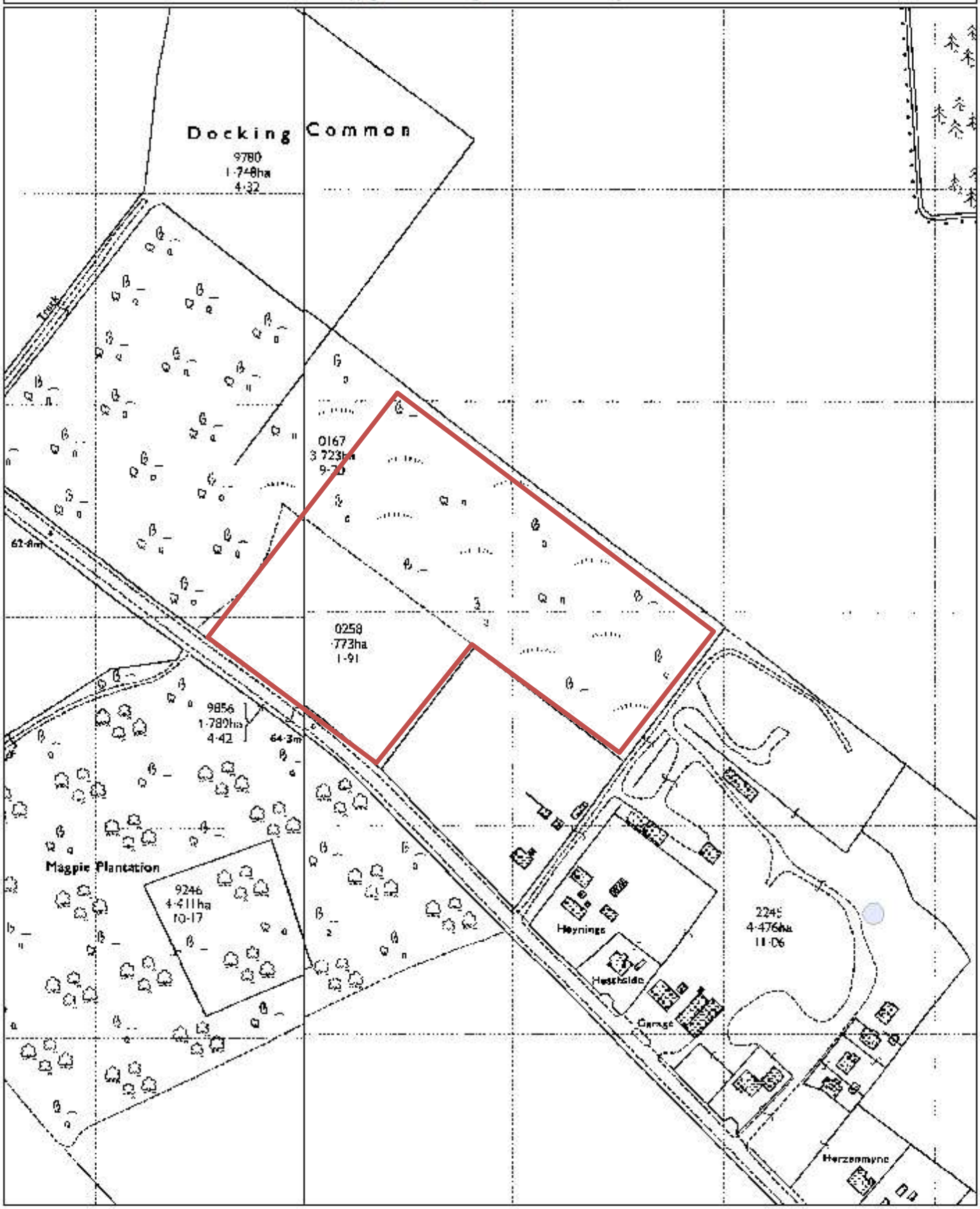
Borough Council of King's Lynn & West Norfolk Tel. 01553 616200 - Fax. 01553 691663	Title Historic map 1843-1893	N W E S	Scale 1:2,500 Date January 2018
	Project / Details Docking Common Landfill		Drawn by EH&H Drawing / Reference Number CL13/102



Borough Council of
King's Lynn & West Norfolk

Tel. 01553 616200 - Fax. 01553 691663

Title: Historic map 1891-1912	Scale: 1:2,500
	Date: January 2018
Project / Details: Docking Common Landfill	Drawn by: EH&H
	Drawing / Reference Number: CL13/103



Borough Council of
King's Lynn & West Norfolk

Tel. 01553 616200 - Fax. 01553 691663

Title: Historic map 1945-1970	Scale: 1:2,500
	Date: January 2018
Project / Details: Docking Common Landfill	Drawn by: EH&H
	Drawing / Reference Number: CL13/104

Borough Council of
King's Lynn &
West Norfolk

Tel. 01553 616200 - Fax. 01553 691663

Title

Aerial Photograph 1940s

N
W E
S

Scale

1:2,500

Date

January 2018

Project / Details

Docking Common Landfill

Drawn by

EH&H

Drawing / Reference Number

CL13/105

Borough Council of
King's Lynn &
West Norfolk

Tel. 01553 616200 - Fax. 01553 691663

Title

Aerial Photograph 1999

N
W E
S

Scale

1:2,500

Date

January 2018

Project / Details

Docking Common Landfill

Drawn by

EH&H

Drawing / Reference Number

CL13/106

Borough Council of
King's Lynn &
West Norfolk

Tel. 01553 616200 - Fax. 01553 691663

Title

Aerial Photograph 2006-09

N
W E
S

Scale

1:2,500

Date

January 2018

Project / Details

Docking Common Landfill

Drawn by

EH&H

Drawing / Reference Number

CL13/107

Appendix C. Norfolk County Council Planning Records

- D/2/1977/0832 - Waste Disposal - Former Sand/Gravel Pit ,Off B1454 by Docking Common Docking - Permitted Development
- D/2/1971/6259 - Waste Landfill - Refused

Appendix D. Risk Assessment Methodology

The Model Procedures for the Management of Land Contamination (CLR11[5]) provide the technical framework for applying a risk management process when dealing with contaminated land.

The Borough Council's Contaminated Land Strategy has identified priority sites based on mapping and documentary information. The Contaminated Land Inspection Report collates all the existing information on the site and develops a conceptual site model to identify and assess potential pollutant linkages and to estimate risk.

The risk assessment process focuses on whether there is an unacceptable risk, which will depend on the circumstances of the site and the context of the decision. The Council has used a process adapted from CIRIA C552, Contaminated Land Risk Assessment, a guide to good practice[6] to produce the conceptual site model and estimate the risk of harm to defined receptors. This involves the consideration of the probability, nature and extent of exposure and the severity and extent of the effects of the contamination hazard should exposure occur.

The probability of an event can be classified as follows:

- Highly likely: The event appears very likely in the short term and almost inevitable over the long term, or there is evidence at the receptor of harm or pollution;
- Likely: It is probable that an event will occur, or circumstances are such that the event is not inevitable, but possible in the short term and likely over the long term;
- Low likelihood: Circumstances are possible under which an event could occur, but it is not certain even in the long term that an event would occur and it is less likely in the short term;
- Unlikely: Circumstances are such that it is improbable the event would occur even in the long term.

The severity of the hazard can be classified as follows:

- High: Short term (acute) risk to human health likely to result in 'significant harm' as defined by the Environment Protection Act 1990, Part IIA. Short term risk of pollution of sensitive water resources. Catastrophic damage to buildings or property. Short term risk to an ecosystem or organism forming part of that ecosystem (note definition of ecosystem in 'Contaminated Land Statutory Guidance, April 2012');
- Medium: Chronic damage to human health ('significant harm' as defined in 'Contaminated Land Statutory Guidance, April 2012'), pollution of sensitive water resources, significant change in an ecosystem or organism forming part of that ecosystem (note definition of ecosystem in 'Contaminated Land Statutory Guidance, April 2012');

[5] https://www.gov.uk/guidance/land-contamination-risk-management
[6] https://www.brebookshop.com/samples/142102.pdf

- Low: Pollution of non-sensitive water resources. Significant damage to crops, buildings, structures and services ('significant harm' as defined in 'Contaminated Land Statutory Guidance, April 2012'). Damage to sensitive buildings, structures or the environment.

Once the probability of an event occurring and hazard severity has been classified, a risk category can be assigned from the table below:

		Hazard		
		High	Medium	Low
Probability	High Probability	Very High Risk	High Risk	Moderate Risk
	Likely	High Risk	Moderate Risk	Moderate/Low Risk
	Low Probability	Moderate risk	Moderate/Low Risk	Low Risk
	Unlikely	Moderate/Low Risk	Low Risk	Very Low Risk

Very High Risk	There is a high probability that severe harm could arise to a designated receptor from an identified hazard, OR, there is evidence that severe harm to a designated receptor is currently happening This risk, if realised, is likely to result in a substantial liability. Urgent investigation (if not undertaken already) and remediation are likely to be required.
High Risk	Harm is likely to arise to a designated receptor from an identified hazard. Realisation of the risk is likely to present a substantial liability. Urgent investigation (if not undertaken already) if required to clarify the risk and to determine the potential liability. Some remedial work may be required in the longer term.
Moderate risk	It's possible that harm could arise to a designated receptor from an identified hazard. However, it is relatively unlikely that any such harm would be severe, or if any harm were to occur it is more likely that harm would be relatively mild.
Moderate/Low risk	It is possible that harm could arise to a designated receptor from an identified hazard. However, if any harm were to occur it is more likely that harm would be relatively mild.
Low Risk	It is possible that harm could arise to a designated receptor from an identified hazard, but it is likely that this harm, if realised, would at worst normally be mild.
Very Low Risk	There is a low possibility that harm could arise to a receptor. In the event of such harm being realised it is unlikely to be severe.

Appendix E. Determination of contaminated land – Contaminated Land Statutory Guidance, April 2012

Human Health

Category	
1	The local authority should assume that a significant possibility of significant harm exists in any case where it considers there is an unacceptably high probability, supported by robust science-based evidence that significant harm would occur if no action is taken to stop it. For the purposes of this Guidance, these are referred to as "Category 1: Human Health" cases. Land should be deemed to be a Category 1: Human Health case where: (a) The authority is aware that similar land or situations are known, or are strongly suspected on the basis of robust evidence, to have caused such harm before in the United Kingdom or elsewhere; or (b) The authority is aware that similar degrees of exposure (via any medium) to the contaminant(s) in question are known, or strongly suspected on the basis of robust evidence, to have caused such harm before in the United Kingdom or elsewhere; (c) The authority considers that significant harm may already have been caused by contaminants in, on or under the land, and that there is an unacceptable risk that it might continue or occur again if no action is taken. Among other things, the authority may decide to determine the land on these grounds if it considers that it is likely that significant harm is being caused, but it considers either: (i) that there is insufficient evidence to be sure of meeting the "balance of probability" test for demonstrating that significant harm is being caused; or (ii) that the time needed to demonstrate such a level of probability would cause unreasonable delay, cost, or disruption and stress to affected people particularly in cases involving residential properties.
2	Land should be placed into Category 2 if the authority concludes, on the basis that there is a strong case for considering that the risks from the land are of sufficient concern, that the land poses a significant possibility of significant harm, with all that this might involve and having regard to Section 1. Category 2 may include land where there is little or no direct evidence that similar land, situations or levels of exposure have caused harm before, but nonetheless the authority considers on the basis of the available evidence, including expert opinion, that there is a strong case for taking action under Part 2A on a precautionary basis.
3	Land should be placed into Category 3 if the authority concludes that the strong case described in 4.25(a) does not exist, and therefore the legal test for significant possibility of significant harm is not met. Category 3 may include land where the risks are not low, but nonetheless the authority considers that regulatory intervention under Part 2A is not warranted. This recognises that placing land in Category 3 would not stop others, such as the owner or occupier of the land, from taking action to reduce risks outside of the Part 2A regime if they choose. The authority should consider making available the results of its inspection and risk assessment to the owners/occupiers of Category 3 land.

Category	
4	The local authority should consider that the following types of land should be placed into Category 4: Human Health: (a) Land where no relevant contaminant linkage has been established. (b) Land where there are only normal levels of contaminants in soil, as explained in Section 3 of this Guidance. (c) Land that has been excluded from the need for further inspection and assessment because contaminant levels do not exceed relevant generic assessment criteria in accordance with Section 3 of this Guidance, or relevant technical tools or advice that may be developed in accordance with paragraph 3.30 of this Guidance. (d) Land where estimated levels of exposure to contaminants in soil are likely to form only a small proportion of what a receptor might be exposed to anyway through other sources of environmental exposure (e.g. in relation to average estimated national levels of exposure to substances commonly found in the environment, to which receptors are likely to be exposed in the normal course of their lives).

Ecological system effects

Relevant types of receptor	Significant harm	Significant possibility of significant harm
Any ecological system, or living organism forming part of such a system, within a location which is: • A site of special scientific interest (under section 28 of the Wildlife and Countryside Act 1981) • A national nature reserve (under s.35 of the 1981 Act) • A marine nature reserve (under s.36 of the 1981 Act) • An area of special protection for birds (under s.3 of the 1981 Act) • A "European site" within the meaning of regulation 8 of the Conservation of Habitats and Species Regulations 2010 • Any habitat or site afforded policy protection under paragraph 6 of Planning Policy Statement (PPS 9) on nature conservation (i.e. candidate Special Areas of Conservation, potential Special Protection Areas and listed Ramsar sites); or • Any nature reserve established under section 21 of the National Parks and Access to the Countryside Act 1949.	The following types of harm should be considered to be significant harm: • Harm which results in an irreversible adverse change, or in some other substantial adverse change, in the functioning of the ecological system within any substantial part of that location; or • Harm which significantly affects any species of special interest within that location and which endangers the long-term maintenance of the population of that species at that location. In the case of European sites, harm should also be considered to be significant harm if it endangers the favourable conservation status of natural habitats at such locations or species typically found there. In deciding what constitutes such harm, the local authority should have regard to the advice of Natural England and to the requirements of the Conservation of Habitats and Species Regulations 2010.	Conditions would exist for considering that a significant possibility of significant harm exists to a relevant ecological receptor where the local authority considers that: • Significant harm of that description is more likely than not to result from the contaminant linkage in question; or • There is a reasonable possibility of significant harm of that description being caused, and if that harm were to occur, it would result in such a degree of damage to features of special interest at the location in question that they would be beyond any practicable possibility of restoration. Any assessment made for these purposes should take into account relevant information for that type of contaminant linkage, particularly in relation to the ecotoxicological effects of the contaminant.

Property effects

Relevant types of receptor	Significant harm	Significant possibility of significant harm
Property in the form of: • Crops, including timber; • Produce grown domestically, or on allotments, for consumption; • Livestock; • Other owned or domesticated animals; • Wild animals which are the subject of shooting or fishing rights.	For crops, a substantial diminution in yield or other substantial loss in their value resulting from death, disease or other physical damage. For domestic pets, death, serious disease or serious physical damage. For other property in this category, a substantial loss in its value resulting from death, disease or other serious physical damage. The local authority should regard a substantial loss in value as occurring only when a substantial proportion of the animals or crops are dead or otherwise no longer fit for their intended purpose. Food should be regarded as being no longer fit for purpose when it fails to comply with the provisions of the Food Safety Act 1990. Where a diminution in yield or loss in value is caused by a contaminant linkage, a 20% diminution or loss should be regarded as a benchmark for what constitutes a substantial diminution or loss. In this section, this description of significant harm is referred to as an "animal or crop effect".	Conditions would exist for considering that a significant possibility of significant harm exists to the relevant types of receptor where the local authority considers that significant harm is more likely than not to result from the contaminant linkage in question, taking into account relevant information for that type of contaminant linkage, particularly in relation to the ecotoxicological effects of the contaminant.
Property in the form of buildings. For this purpose, "building" means any structure or erection, and any part of a building including any part below ground level, but does not include plant or machinery comprised in a building, or buried services such as sewers, water pipes or electricity cables.	Structural failure, substantial damage or substantial interference with any right of occupation. The local authority should regard substantial damage or substantial interference as occurring when any part of the building ceases to be capable of being used for the purpose for which it is or was intended. In the case of a scheduled Ancient Monument, substantial damage should also be regarded as occurring when the damage significantly impairs the historic, architectural, traditional, artistic or archaeological interest by reason of which the monument was scheduled. In this Section, this description of significant harm is referred to as a "building effect".	Conditions would exist for considering that a significant possibility of significant harm exists to the relevant types of receptor where the local authority considers that significant harm is more likely than not to result from the contaminant linkage in question during the expected economic life of the building (or in the case of a scheduled Ancient Monument the foreseeable future), taking into account relevant information for that type of contaminant linkage.

Controlled waters

Significant pollution of controlled waters
The following types of pollution should be considered to constitute significant pollution of controlled waters: (a) Pollution equivalent to "environmental damage" to surface water or groundwater as defined by The Environmental Damage (Prevention and Remediation) Regulations 2009, but which cannot be dealt with under those Regulations. (b) Inputs resulting in deterioration of the quality of water abstracted, or intended to be used in the future, for human consumption such that additional treatment would be required to enable that use. (c) A breach of a statutory surface water Environment Quality Standard, either directly or via a groundwater pathway. (d) Input of a substance into groundwater resulting in a significant and sustained upward trend in concentration of contaminants (as defined in Article 2(3) of the Groundwater Daughter Directive (2006/118/EC)5).

Significant possibility of significant pollution of controlled waters **Category**	
1	This covers land where the authority considers that there is a strong and compelling case for considering that a significant possibility of significant pollution of controlled waters exists. In particular this would include cases where there is robust science-based evidence for considering that it is likely that high impact pollution (such as the pollution described in paragraph 4.38) would occur if nothing were done to stop it.
2	This covers land where: (i) the authority considers that the strength of evidence to put the land into Category 1 does not exist; but (ii) nonetheless, on the basis of the available scientific evidence and expert opinion, the authority considers that the risks posed by the land are of sufficient concern that the land should be considered to pose a significant possibility of significant pollution of controlled waters on a precautionary basis, with all that this might involve (e.g. likely remediation requirements, and the benefits, costs and other impacts of regulatory intervention). Among other things, this category might include land where there is a relatively low likelihood that the most serious types of significant pollution might occur
3	This covers land where the authority concludes that the risks are such that (whilst the authority and others might prefer they did not exist) the tests set out in Categories 1 and 2 above are not met, and therefore regulatory intervention under Part 2A is not warranted. This category should include land where the authority considers that it is very unlikely that serious pollution would occur; or where there is a low likelihood that less serious types of significant pollution might occur.
4	This covers land where the authority concludes that there is no risk, or that the level of risk posed is low. In particular, the authority should consider that this is the case where: (a) No contaminant linkage has been established in which controlled waters are the receptor in the linkage; or (b) The possibility only relates to types of pollution described in paragraph 4.40 above (i.e. types of pollution that should not be considered to be significant pollution); or (c) The possibility of water pollution similar to that which might be caused by "background" contamination as explained in Section 3.