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ENERGY AND CLIMATE CHANGE
ENVIRONMENT AND SUSTAINABILITY
INFRASTRUCTURE AND UTILITIES
LAND AND PROPERTY
MINING, QUARRYING AND MINERAL ESTATES
WASTE RESOURCE MANAGEMENT

LONGBOW INVESTMENT NO. 3 SARL, BOURDON HOLDINGS SARL AND BOURDON LTD

Units 1-3, Callflex Business Park, Golden Smithies Lane, Wath-upon-Dearne, Rotherham

Phase I Environmental Assessment

April 2014

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Units 1-3, Callflex Business Park, Golden Smithies Lane, Wath-upon-Dearne, Rotherham

Phase I Environmental Assessment

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ENERGY AND CLIMATE CHANGE
ENVIRONMENT AND SUSTAINABILITY
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APPENDICES

DRAWINGS

Drawing No	Title	Scale
SH11353-001	Site Location Plan	1:50,000
SH11353-002	Site Plan	1:1,250

1 INTRODUCTION

1.1 Instructions

1.1.1 This report is prepared in accordance with instructions from Andrew Crowther of Crowther Turnbull Booth, on behalf of Longbow Investment No. 3 Sarl, 2 Boulevard Konrad Adenauer, L-1115 Luxembourg, Luxembourg, Bourdon Holdings SARL, 35, Avenue Monterey, L-2163 Luxembourg and Bourdon Ltd, One America Square, Crosswall, London, EC3N 2SG dated 21 February 2014 and in accordance with our standard terms and conditions as attached at Appendix I. This follows a proposal dated 20 February 2014 by Wardell Armstrong.

1.2 Site Location

1.2.1 The site is Units 1-3, Callflex Business Park, Golden Smithies Lane, Wath-upon-Dearne, Rotherham, S63 7ER and is located as shown on the site location plan, Drawing No. SH11353-001 (1:50,000 scale) and more detailed site plan SH11353-002 (1:1,250 scale). The site comprises 3 commercial office buildings, car parking and electricity substations which are bounded by other commercial units to the west and south with Old Smithies Lane to the east and north. The site is located 1km to the east of Wath on Dearne.

1.3 Purpose and Basis of Report

1.3.1 The purpose of this report is to identify and examine in broad terms the potential stability and contamination constraints and liabilities that may arise in connection with the present use or proposed use of the site. The report is designed generally in accordance with the first incremental stage of a Land Quality Statement as set out by the Royal Institution of Chartered Surveyors (RICS) in their publication "Contamination and Environmental Matters" dated November 2003. The background to government guidance on contamination and the purpose and use of Land Quality Statements in assessing the risk of contamination at a site is described at Appendix II. The report does not constitute or contain a valuation nor is it a full rigorous environmental audit. In this instance the report is prepared for a change of ownership.

1.4 Proposed Use

1.4.1 It is proposed that the current commercial land use is continued.

2 SITE HISTORY AND PRESENT LAND USE

2.1 Data Sources

2.1.1 The history of the site and its immediate vicinity has been investigated by consultation with a range of archive sources and statutory bodies. The topographical and environmental data is primarily based on a Landmark Envirocheck report dated 21 February 2014.

2.1.2 Additional archives and statutory bodies contacted are given in Appendix III.

2.2 Site History

2.2.1 The site history has been primarily researched to identify previous land uses, including any significant potentially contaminative uses. Where other features that may have an effect on development of the site have been identified, they are described.

2.2.2 Table I summarises the history of the site and its immediate vicinity over the period from about 1855 to the present day.

TABLE I
SUMMARY OF LAND USE

Date	Site Land Use	Adjacent Land Use
1855 – 1870's	Greenfield land with a railway line running east to west through the centre and to the south the Sheffield and South Yorkshire Navigation (Dearne) Canal running east to west.	Greenfield land.
1880 - 1890's	As previous but the site is now part of Manvers Main Colliery. An air shaft is shown on the western site boundary.	Railway line, clay pits and a kiln are located to the north east and Manvers Colliery is located to the west. Greenfield land in surround area.
1900 - 1910's	As previous with further expansion of the colliery site with clay pits and a shaft shown in northern part of the site.	No significant change.
1920-1930's	As previous with further expansion of the colliery site with buildings, multiple tanks and a chimney. The cooling pond extends onto the site in the north.	A brick works is shown 130m north, a cooling pond and towers are located within the north of the site to 100m north west and tanks and pitch beds are located 190m north west.

TABLE I
SUMMARY OF LAND USE

Date	Site Land Use	Adjacent Land Use
1940-1950's	The area to the south of the railway line appears to have been redeveloped with several buildings of a works with the mine and cooling pond to the north of the railway line.	Manvers Colliery has expanded to the east. NCB headquarters is located adjacent to the south of the site and areas of surface extraction are located to the east and the south east. The area to the north west is occupied by a large works with holders.
1960-1970's	The canal has been infilled. The works is now labelled Manvers Workshops and Stores.	NCB laboratories are located in the south east with adjacent disused tips. A depot with tanks is located to the east.
1980-1990's	The railway line is now shown as dismantled and the mine is no longer shown by 1994.	The railway to the north east is shown as disused. The works area to the north west is no longer shown by 1994.
2000's	The site is vacant by 2000 and developed as 3 buildings by 2006	The general site area is largely redeveloped with commercial and light industrial units and road infrastructure. The NCB laboratories and offices are redeveloped.
Present day	As previous.	Further development of the site area has occurred.

2.3 Present Site Use

2.3.1 The site was visited on 25 February 2014. During the site visit a Wardell Armstrong representative was accompanied by Mr Glen Turnbull. At the time of the visit the site comprised commercial offices; Unit 1 (EON), Unit 2 (call centre/vacant) and Unit 3 (Keepmoat). The following points are of note:

- Access was off Golden Smithies Lane;
- Site is generally level although there were embankments along the southern and eastern boundaries;
- An electricity substation was present per unit and is likely to be installed as part of the latest development of the site;
- Predominantly hardstanding comprising tarmac and brick paving slabs in parking and road access areas and grassed landscaped areas around buildings;

- No access to the site interior was available.

2.3.2 A site visit record is attached at Appendix IV.

3 ENVIRONMENTAL SETTING AND CONSULTATIONS

3.1 Statutory Sources

3.1.1 Information from various statutory sources has been summarised utilising the information received from the Landmark Information Group Ltd. This is summarised at Appendix V. The site sensitivity map and full copy of the Envirocheck data is available on request.

3.2 Contaminated Land Register Entries and Notices

3.2.1 No contaminated land entries or notices are identified within 1km of the site.

3.3 Waste Management

3.3.1 Information supplied has indicated the presence of the following landfills or waste management sites within potential influencing distance of the site boundary (250m).

TABLE II

Location	Details
Licenced Waste Management Facility: Historic Landfill Site **Licence Holder:** Rotherham Metropolitan Borough Council **Grid Ref:** 445338, 400742 **Distance from Site:** 14m N	**Site Location:** Manvers Way - Doncaster Road, Wath upon Dearne **Licence Number:** EAHLD04436 **Waste Type:** Deposited Waste included Inert Waste **Licence Status:** Not supplied
Licenced Waste Management Facility: Historic Landfill Site **Licence Holder:** Rotherham Metropolitan Borough Council **Grid Ref:** 445403, 400811 **Distance from Site:** 72m N	**Site Location:** Manvers Way - Bolton Road, Wath on Dearne **Licence Number:** EAHLD04437 **Waste Type:** Deposited Waste included Inert Waste **Licence Status:** Not supplied
Licenced Waste Management Facility: Historic Landfill Site **Licence Holder:** Rotherham Metropolitan Borough Council **Grid Ref:** 445470, 400975 **Distance from Site:** 247m N	**Site Location:** Managed workshops, Bolton Road, Wath upon Dearne **Licence Number:** EAHLD04438 **Waste Type:** Deposited Waste included Inert Waste **Licence Status:** Not supplied

3.3.2 In addition, there are features on the historical maps such as the historic coal mine, clay pits and infilled canals which may indicate the presence of unrecorded landfilling activities within influencing distance of the site. If at sometime in the future, the presence of an unrecorded landfill is revealed then its potential influence on the site may need to be investigated and dealt with as necessary.

3.4 Radon

3.4.1 Radon can accumulate in enclosed spaces within buildings and this has been identified as a risk to human health for many years. The Health Protection Agency and British Geological Survey document "Indicative Atlas of Radon in England and Wales" (2007) provides a summary of the number of homes in a given area above the Action Level for radon. Although the radon atlas relates directly to measurements taken from homes or dwellings, it is also relevant to employers assessing risks for underground and groundfloor work places.

3.4.2 The BRE document "Radon: guidance on protective measures for new buildings" (2007) provides guidance for reducing the concentration of radon in new buildings and a two stage procedure using accompanying maps needed to determine the level of protection for a given site.

3.4.3 These documents have been consulted and the site is shown to lie in an area where no protection against radon is needed should development of residential dwellings or new structures of similar form of construction and compartmentation occur.

3.5 Environmental Issues

3.5.1 As a result of research mainly via the Landmark Envirocheck report, there are no records of pollution incidents or prosecutions or enforcements relating to authorised processes within 250m of the site boundary.

Discharge Consents

3.5.2 The Environment Agency data via the Landmark report records the following current or past consents at or in the vicinity of the site.

TABLE II	
Consent	**Details**
Operator: Tarmac Spv Limited **Grid Ref:** 445550, 400850 **Distance from Site:** 188m NE	**Location:** Ready Mix Concrete Plant, Wath Road, Wath-Upon-Dearne, South Yorkshire **Discharge Reference:** 1246 **Date:** 30th November 1960 **Type:** Trade Discharges - Site Drainage (Contaminated Surface Water, Not Waste Sites) **Receiving Water:** Tributary of River Dearne **Status:** Transferred from Rivers (Prevention of Pollution) Act 1951-1961

Local Authority Pollution Prevention Controls

3.5.3 The Environment Agency data via the Landmark report records the following current or past Local Authority Pollution Prevention Controls at or in the vicinity of the site.

TABLE IV	
Operator and Location	**Details**
Operator: Tarmac Ltd **Grid Ref:** 445569, 400677 **Distance from Site:** 141m E	**Authority:** Rotherham Metropolitan Borough Council **Reference:** EAHLBBWATH/1 **Date:** 23/12/92 **Description:** PG3/1 Blending, packing, loading and use of bulk cement **Status:** Authorised

3.6 Ecology

3.6.1 There are a number of legal or planning constraints relating to wildlife habitats and protected plant and animal species. Wildlife habitats and protected species can occur on or adjacent to a site. They can also be linked via surface or groundwater and can be affected by activities on the site such as noise, dust or pollution.

3.6.2 Reference to the Landmark Envirocheck report indicates no presence of National Nature Reserves, Marine Nature Reserves or Sites of Special Scientific Interest within 1km of the site.

3.6.3 Although a site visit has been carried out, this was not specifically for ecological purposes. The site visit identified no significant ecological features although trees and hedges were present.

Japanese Knotweed, Himalayan Balsam and Giant Hogweed

3.6.4 Many foreign plants were introduced to Britain in the 19th Century, mainly for ornamental reasons. A few have become aggressively dominant, creating serious problems in some areas. Three such invasive plants are Japanese knotweed, Himalayan balsam and Giant hogweed. Their spread is primarily the result of human activities, which aid their dispersal along linear corridors such as railway tracks, rivers and road verges. By forming dense stands they can displace native species and reduce wildlife interest.

3.6.5 None of the above mentioned invasive plants were identified on site.

3.7 Environmental Management

3.7.1 No significant issues relating to environmental management were identified during the site visit although access to the building interior was available.

3.8 Asbestos

3.8.1 The Health and Safety at Work Act requires that Employers provide safe places of work for their employees. The Control of Asbestos Regulations place very heavy specific duties on those who commission and carry out work on asbestos containing materials. Construction work that is likely to involve exposure of workers to hazards associated with asbestos in existing buildings will be subject to the Construction (Design and Management) Regulations which impose duties upon Clients, Designers and the Contractors carrying out the work. Other health and safety and welfare regulations place duties on Employers to undertake risk assessments and prepare hazard management plans which, in the case of a building likely to contain asbestos, could involve the commissioning of surveys, hazardous materials location registers and proposals for remedial work.

3.8.2 A site walkover survey has been completed. However, the walkover survey does not constitute an asbestos survey and not all areas of the site may have been visited.

3.8.3 Given the observations during the site visit it is considered that asbestos is unlikely to be present at the site although access to the building interior was not available.

The history of the site suggests that asbestos may be present in made ground beneath the site.

3.8.4 No asbestos Management Survey (formerly Type 2 survey) of the site buildings was sighted.

3.9 Archaeology

3.9.1 Examination of historical maps indicate no features of significant archaeological interest in the general vicinity of the site.

3.10 Unexploded Ordnance

3.10.1 From a review of historical plans, the area around the site is not known to have had previous military use and does not appear to have been subject to heavy enemy bombing during WWII. The risk of unexploded ordnance at the site can be considered to be very low. Should new evidence indicate that unexploded ordnance may be an issue, this assessment will have to be revised and some site clearance prior to redevelopment of the site may be required.

4 GEOLOGICAL AND HYDROGEOLOGICAL SETTING

4.1 Geology

4.1.1 The assessment of the geology of the site is based on the published geological mapping sheet (Sheet SE40SE, Dearne, Solid and Drift Edition, 1:10,000 scale) supplemented by the geological memoir, topographical plans and site visit. A typical conjectured section of strata is provided in Table V below along with other geological data.

TABLE V

Strata	Description
Made ground.	Made ground of an unknown nature, thickness and extent is likely to be present given the past development of the site.
Natural superficials.	Alluvium is shown to be present in the northern part of the site.
Solid strata.	Middle Coal Measures of Carboniferous age.
Man-made mining cavities	One located 260m north of the site at 445400,401000 related to fireclay commodity.
Ground stability.	British Geological Information Services via the Envirocheck data indicate a very low to moderate potential for compressible ground stability hazards on site.

4.2 Hydrogeology

4.2.1 Hydrogeological information from the Environment Agency changed in April 2010 in order to comply with the Water Framework Directive. Where possible, this report considers both the old and new information obtained from:

- a Landmark Envirocheck report;
- Groundwater Protection Policy and Groundwater Vulnerability maps published by the Environment Agency;
- Hydrogeological maps published by the British Geological Survey; and
- Groundwater Protection: Policy and Practice (Environment Agency, 2006).

4.2.2 This information indicates the site to be underlain by alluvium which are classified as a Minor or Secondary A Aquifer and coal measures strata which is classified as a Minor or Secondary A Aquifer.

4.2.3 Minor or Secondary A aquifers are generally fractured or potentially fractured formations and do not have a high primary permeability. Although not producing large quantities of water for abstraction, they are important for local supplies and may supply base flow to rivers.

4.2.4 There is one groundwater abstraction licence within a 2km radius of the site. It is located at 1.99 km east (NGR: 447450, 400660) and is operated by Trustees of the Doncaster & Bassettlaw Hospitals NHS Trust which is licensed to abstract an unknown volume of groundwater per year for 'Hospitals: Drinking; Cooking; Sanitary; Washing; (Small Garden) purposes'.

4.2.5 The site does not lie within a source protection zone.

4.3 Soil Vulnerability Classification – Leaching Potential

4.3.1 The soil vulnerability classification groups the many different soil types of England and Wales into three soil vulnerability classes and six sub-classes. Each is based on the physical and chemical properties of the soil, which affect the downward passage of water and contaminants. This classification is not applied to soil above non-aquifers. Soil information for urban areas is based on fewer observations than elsewhere. A worst case vulnerability is therefore assumed until proved otherwise.

4.3.2 The soil has a High Leaching potential (HU) due the sites urban location.

4.4 Hydrology

4.4.1 The nearest graded surface watercourse is Brook Dike, which is approximately 300m north of the site.

4.4.2 The Environment Agency completed a national flood risk assessment in 2004, which used ground levels, predicted flood levels, information on flood defences and local knowledge. The assessment predicts the likelihood of flooding in an area as low, medium or high based on zones identified in Technical Guidance to the National Planning Policy Framework (2012).

4.4.3 The site is with in Zone 1 and has a low probability of flooding. The chance of flooding each year is less than 0.1% (1 in 1,000).

4.4.4 There are 7 surface water abstraction licences within 2km of the site. The closest is 1.16km north (NGR 445400, 401900) and is operated by British Coal, which is licensed to abstract 3,750,450m^3 of surface water per year for 'general industrial' purposes. This licence is still shown to be live and has presumably been taken over by the Coal Authority.

5 MINING AND QUARRYING

5.1 General

5.1.1 Research of the mining setting is based on examination of the published topographical and geological information as described in Section 2 and 4 of this report along with other mining archive information. A Coal Authority report for the site has been obtained, dated 24 February 2014 and is attached at Appendix VI.

5.2 Surface Workings

5.2.1 Research of topographical, geological and other archive mining records has indicated evidence of surface extraction activities in the site area such as clay pits.

5.3 Shallow Underground Workings

5.3.1 From the enquiries made and examination of the geological information there is no evidence of shallow underground mining activity.

5.4 Deep Mining

5.4.1 Manvers Main Colliery operation was located on site.

5.4.2 The Coal Authority report indicates evidence of deep coal mining activity from workings in 5 seams of coal at 90m to 620m depth and last worked in 1961.

5.4.3 Deep mining is generally defined as that mining undertaken at depths greater than about 30m below rockhead. Whilst ground movements would have occurred due to the mining of any deeper seams, surface subsidence effects should have been largely contemporaneous with the mining. The site is considered stable in respect of any past deep mining.

5.4.4 There are no current mining activities affecting the site and the site does not lie within influencing distance of any presently known planned future workings.

5.5 Mine Entries

5.5.1 The Coal Authority report has indicated that there are 4 recorded mine entries on or within influencing distance of the site.

- 445400-004. No treatment details;
- 445400-003. was filled in December 1988 and plugged and capped in September 1990;
- 445400-001. has been filled and was capped in March 1990;

- 445400-002. has been filled and was capped in September 1990.

5.5.2 445400-004 and 445400-003 are shown on the western site boundary, 445400-001 is shown in the northern part of the site and 445400-002 is shown to the west of the site.

5.5.3 Historic mapping shows the presence of 3 mine entries within the site area which are likely to be the same shafts as those indicated on site in the Coal Authority report.

5.6 Mine Shafts

5.6.1 In old abandoned mining areas, it was common practice to backfill the abandoned shafts either completely or, to a staging built at some level above the shaft bottom with loose colliery refuse. In many cases such old mine shafts have subsequently been covered over and have become overgrown and visually indistinguishable. Where no special plugging precautions were taken to seal off the shaft fill material from old workings or, where a shaft was filled on to staging in the shaft, the fill material can run into the old workings or into the empty shaft space beneath the staging. In both cases, the result is the sudden appearance of a collapse hole in the ground the diameter of which may be considerably greater than that of the original shaft.

5.6.2 In addition to the recorded mine entries at or near the site, the possibility of there being additional unrecorded mine entries cannot be discounted. During development a careful watch should be maintained for any feature which may represent an unrecorded mine entry, such as circular brickwork or anomalous areas of fill/timber. Should any such feature be identified it should be reported, investigated and acted upon as necessary.

5.7 Coal Mine Gas

5.7.1 Examination of the mining and geological information indicates that it is possible that gases migrating from now abandoned coal mine workings may affect the site.

6 CONCEPTUAL SITE MODEL

6.1 Environmental Issues

6.1.1 Conclusions are drawn from the preceding information in terms of potential sources of contamination, possible receptors that may be affected by any sources of contamination and the pathways that exist between source and receptor. This basic risk assessment allows identification of the suitability of the site for its current and future use and evaluation of any potential environmental liability that may attach to the site. A description of past or existing uses and their chemicals of potential concern is attached at Appendix VII. The issues can be broadly addressed as follows: land contamination, groundwater contamination, surface water contamination, ground gases and air pollution.

6.1.2 The land use history has identified the following potentially significant sources of contamination both on the site and adjacent to the site.

Potentially Significant Contamination Source On Site:

1. Historic tanks.
2. Historic works.
3. Manvers Colliery.
4. Made ground present across the site.
5. Potential asbestos containing material.
6. Coal seams (ground gas - radon)
7. Historic landfill (infilled canal).

Potentially Significant Contamination Source Off Site:

8. Surrounding commercial and industrial properties including a works and landfills.

6.1.3 As a result of the land use history presented in previous sections of this report the site may have a number of sources of contamination. For land or groundwater to be designated as polluted a linkage must exist between:

- a source of contamination capable of causing significant harm;
- human or environmental receptors; and
- a pathway by which the contamination can reach the receptor.

6.1.4 The conceptual site model presented in Table VI details an initial assessment of all potential pollutant linkages.

TABLE VI		
SOURCE (CONTAMINANT)	**PATHWAY**	**RECEPTOR**
No. 1 Above ground storage tanks, pipe-work and storage barrels.	1. Inhalation. 2. Dermal contact. 3. Ingestion. 4. Surface runoff. 5. Groundwater migration. 6. Direct contact (aggressive attack). 7. Gas migration.	1. Current occupiers. 2. Future occupiers. 3. Construction workers. 4. Groundwater. 5. Surface water. 6. Subsurface building materials and plastic service pipes. 7. Flora and Fauna.
No. 2 Historic works (hydrocarbons, phenols, solvents, PCBs, metals).	1. Inhalation. 2. Dermal contact. 3. Ingestion. 4. Surface runoff. 5. Groundwater migration. 6. Direct contact (aggressive attack). 7. Gas migration.	1. Current occupiers. 2. Future occupiers. 3. Construction workers. 4. Groundwater. 5. Surface water. 6. Subsurface building materials and plastic service pipes. 7. Flora and Fauna.
No. 3 Manvers Colliery (hydrocarbons, PAH, Phenols, metals, cyanide).	1. Inhalation. 2. Dermal contact. 3. Ingestion. 4. Surface runoff. 5. Groundwater migration. 6. Direct contact (aggressive attack). 7. Gas migration.	1. Current occupiers. 2. Future occupiers. 3. Construction workers. 4. Groundwater. 5. Surface water. 6. Subsurface building materials and plastic service pipes. 7. Flora and Fauna.
No. 4 Potential made ground present across the site (heavy and phytotoxic metals, PAH).	1. Inhalation. 2. Dermal contact. 3. Ingestion. 4. Surface runoff. 5. Groundwater migration. 6. Direct contact (aggressive attack). 7. Gas migration.	1. Current occupiers. 2. Future occupiers. 3. Construction workers. 4. Groundwater. 5. Surface water. 6. Subsurface building materials and plastic service pipes. 7. Flora and Fauna.
No. 5 Potential made ground (asbestos).	1. Disturbance and inhalation.	1. Current occupiers. 2. Future occupiers. 3. Construction workers.
No. 6 Coal seams (ground gas).	1. Inhalation. 7. Gas migration.	1. Current occupiers. 2. Future occupiers.

TABLE VI		
SOURCE (CONTAMINANT)	**PATHWAY**	**RECEPTOR**
No. 7a Historic landfill (infilled canal) leachate.	1. Inhalation. 2. Dermal contact. 3. Ingestion. 4. Surface runoff. 5. Groundwater migration. 6. Direct contact (aggressive attack). 7. Gas migration.	1. Current occupiers. 2. Future occupiers. 3. Construction workers. 4. Groundwater. 5. Surface water. 6. Subsurface building materials and plastic service pipes. 7. Flora and Fauna.
No. 7b Historic landfill and mining gas (methane and/or carbon dioxide).	1. Inhalation. 5. Groundwater migration. 7. Gas migration.	1. Current occupiers. 2. Future occupiers. 3. Construction workers. 7. Flora and Fauna.
No. 8 Surrounding historical industry including a works and landfills (hydrocarbons, solvents, metals, phenols).	1. Inhalation. 2. Dermal contact. 3. Ingestion. 4. Surface runoff. 5. Groundwater migration. 6. Direct contact (aggressive attack). 7. Gas migration.	1. Current occupiers. 2. Future occupiers. 3. Construction workers. 4. Groundwater. 5. Surface water. 6. Subsurface building materials and plastic service pipes. 7. Flora and Fauna.

7 ENVIRONMENTAL RISK ASSESSMENT

7.1 Introduction

7.1.1 The main issues considered in the risk assessment are:

- The environmental risks identified, if any, that may have implications for the current use of the site.
- The environmental risks identified, if any, that may have implications for the proposed use of the site if different from its current use.
- How likely it is that the environmental risks identified may affect the site. This is considered against a background of continuation of the current use and potential for the site to be redeveloped in accordance with the proposed use.
- Other areas of primary concern from a ground engineering and environmental viewpoint that may have been revealed as a result of the research carried out. These features are limited to the scope of work/research carried out and may not cover such factors as the wider planning constraints, archaeology, ecology etc.

7.1.2 For ease of reference and understanding the risks are assessed against 3 possible levels/categories:

- **Low risk** - site considered suitable for use and environmental setting. Contaminants may be present but unlikely to have an unacceptable impact on key targets. Action unlikely to be needed;
- **Moderate risk** - site may not be suitable for use and environmental setting. Contaminants probably or certainly present and likely to have an unacceptable impact on key targets. Action may be needed in the medium term; and
- **High risk** - site probably or certainly not suitable for use and environmental setting. Contaminants probably or certainly present and very likely to have an unacceptable impact on key targets. Urgent action needed in short term.

7.1.3 Under each of the categories the environmental issues which have been identified have been assessed with regard to a wide range of topics including (where appropriate):

- the 'source-pathway-receptor' concept;
- the behaviour of potential contaminants within the environment;
- environmental processes;

- industrial operations and best practice;
- current environmental legislation;
- the views and practices of the environmental regulators;
- the likelihood of environmental notices, orders or other enforcement action;
- any requirements to remove waste, contaminated or hazardous materials;
- the health and safety of occupiers or neighbours;
- any redevelopment plans for the site;
- effects on the fabric of buildings caused by contamination; and
- financial and cost implications.

7.2 Qualitative Risk Assessment

7.2.1 From the combination of the foregoing information a qualitative assessment of the contamination risk is provided in Table VII. Where indicated, these risks may need to be considered for any future redevelopment of the land.

7.2.2 The effect of the present site use on the surrounding area is assessed with regard to the possible contaminant migration from the site off site and with regard to the general environmental setting and land quality of the surrounding area in order to put the on site assessment in context.

Table VII

Issue	Summary	Risk Category	
		Humans	Property/ Environment
Contamination Potential:			
Present site use.	Commercial office units.	Low	Low
Past site use.	Coal mine, railway, tanks, infilled canal and works.	Mod.	Mod.
Impact to site from past and present adjacent land uses.	Coal mine, railway, tanks, landfill, infilled clay pits, spoil tips and works.	Mod.	Mod.
Mining history.	Historic underground mining, shafts.	Mod.	Mod.
Emissions, pollution incidents, discharges etc.	There is 1 Local Authority Pollution Prevention Control within influencing distance of the site.	Low	Low

Table VII			
Issue	**Summary**	**Risk Category**	
		Humans	Property/ Environment
Asbestos	Asbestos containing material is unlikely to be present in the buildings given construction since 2000. There may be asbestos present in the made ground beneath the site.	Low to moderate.	Low to moderate.
Environmental Sensitivity:			
Geology.	Potential made ground overlying alluvium and middle coal measures strata.	n/a	n/a
Groundwater vulnerability.	This site is situated on a Secondary A aquifer. One groundwater abstraction was within 2km of the site at 1.99km east.	Low	Low – Mod.
Surface water vulnerability.	The nearest graded surface watercourse is the Brook Dike approximately 300m north. Seven surface water abstraction licences were within 2km of the site with the nearest at 1.16km north.	Low	Low – Mod.
Geological constraints:			
Made ground / superficials / solid geology	A geotechnical investigation is likely to be required for redevelopment.	Low	Low
Mining setting	Deep mining, mine entries.	Mod.	Mod.
Risks relating to other constraints (miscellaneous):			
Flooding.	The site does not lie within a designated floodplain.	Low	Low
Liability Issues:			
Risk of liability with past use of site.	Coal mine, railway sidings, tanks, infilled canal and works.	Mod.	Mod.
Risk of liability with current use of site.	Commercial office units.	Low	Low
Risk of liability for proposed use of site.	Commercial office units.	Low	Low
Overall Risk for Site:	**Moderate**		

8 CONCLUSIONS AND RECOMMENDATIONS

8.1 Continued Use

Contamination

8.1.1 The history of the site indicates a Moderate potential for contamination from both on site past use and adjacent operations that may have impinged upon the site. Therefore, it is considered that the site may represent a significant risk of hazard or environmental liability.

8.1.2 However, it is clear from a site visit and our general knowledge of the area that the site and the surrounding area have been remediated/restored from the variety of past industrial uses; e.g. works, coal mine, infilled railway lines and canal, clay pits, and a number of landfill sites.

8.1.3 The details and quality of remediation/restoration are not known. Given the date and extent of the past general restoration it could be expected that site remediation reports should be available and should be sourced and reviewed. Particular regard should be taken of the overall quality of compaction, the contamination results and mine shaft/workings treatment records.

8.1.4 Whilst we are unable to confirm that remediation work has been carried out to a satisfactory standard it is considered likely that any contamination issues are likely to have been dealt with satisfactorily for commercial use.

8.1.5 It is likely that the remediation works carried out at the site, and site investigation works carried out prior to the remediation, will be recorded as part of the site development CDM Health and Safety file for the development and as a requirement to discharge planning conditions. It is recommended that the current site owners, Environment Agency and Local Authority are consulted regarding their records of the contamination sources at the site and records of the discharge of conditions.

8.1.6 The present land use of the site is commercial offices and it is understood that it is proposed that this use will continue. Subject to confirmation that any remediation work has been carried out to a suitable standard, the site may have a low potential for contamination and it may be considered that the site does not represent a significant risk of hazard or environmental liability for continued use.

Other

8.1.7 Historic deep workings and a number of mine shafts are recorded in the site area with 3 being recorded as being treated with a fourth shaft having no details. Therefore the following work is recommended:

- A visit to the Coal Authority offices to research mining records regarding the untreated shaft; and
- If required, Intrusive investigation to identify the untreated shaft beneath the site; comprising rotary open-hole drilling;
- If required, remedial works to treat any untreated mine shafts shallow workings beneath the site.

8.2 Redevelopment

Contamination

8.2.1 For redevelopment of the site for a more sensitive end use, it is considered likely that the regulator will require a further Phase II intrusive investigation of the site if this is not already available and this is likely to include:

- Consultation with the Environment Agency and Local Authority regarding their records of the contamination sources at the site;
- Re-assessment of past reports and data in line with current guidance;
- Drilling and testing of soil, groundwater and ground gas to target potential sources of contamination within and outside of the current buildings;
- A quantitative risk assessment to determine if significant contamination is present; and
- If significant contamination is identified, calculation of site specific remedial targets, liaison with the regulators and remediation.

Other

8.2.2 In addition, if further development is proposed, the following areas of further work should be undertaken:

- It is considered that a Flood Risk Assessment will be required as part of the planning process as the site is greater than 1 hectare.
- Investigation and treatment of mine workings as above

APPENDIX I

Standard Terms and Conditions and Limitations to Reports

STANDARD TERMS AND CONDITIONS AND LIMITATIONS TO REPORTS

This report is provided for the stated purpose and for the sole use of the client. It is confidential to the client and his professional advisors and cannot be shown to any other party without prior written consent. Wardell Armstrong LLP accepts no responsibility whatsoever to any person other than the client.

The findings of this report are based upon information relating to the property supplied by the client or their agents. The information has been accepted and used in good faith and unless otherwise stated, no attempt has been made to verify the information supplied. Should any of these factors or information change then the conclusions of the report may need to be amended. The information supplied is detailed at Appendix III along with details of the other published and archive sources of information used in the preparation of the report.

The opinions and findings of this report are given without the benefit of any physical site investigation, sampling and testing. A walk over site visit has been carried out.

The findings and recommendations are considered to be valid and appropriate at the time of preparation and for the specific purpose or purposes intended. Wardell Armstrong LLP will not be liable if any findings are used by third parties, without the written agreement of the company, or if an interpretation is made and action taken without further consultation.

APPENDIX II

Guidance on Contamination and Land Quality Statements

CONTAMINATION

Background

In 1990 the Government published the Environmental Protection Act which amongst other matters introduced the concept of a public register of contaminated land. The relevant section (section 143) of the Act met with a great deal of criticism and concern and was not implemented. The possibility of such a register did however create and heighten concerns and awareness of contaminated land issues that remain to date.

In the following five years there was a great deal of discussion on this issue and in particular the Government issued a consultative paper entitled "Paying for the Past" in March 1994. The Government's conclusions from this exercise were published in November 1994 under the title "Framework for Contaminated Land". This document set out the Government's proposals for a machinery for dealing with contaminated land and liabilities. Many of the main elements of this proposal remain in the present strategy for assessing and solving contaminated land problems.

A number of important points were raised:

- there is a commitment to sustainable development and to the "polluter pays" principle.
- there is a commitment to the 'suitable for use' approach to the control and treatment of existing contamination. This approach identifies that remedial action should only be required where:
- the contamination poses unacceptable actual or potential risks to health or the environment; and
- there are appropriate and cost effective means available to do so, taking into account the actual or intended use of the site.

ENVIRONMENT AGENCY

In order to regulate and offer guidance on issues of contaminated land the Government established the "Environment Agency". The Agency took over all the functions of the former National Rivers Authority (NRA), the Waste Regulation Authorities and Her Majesty's Inspectorate of Pollution as well as some of the functions of the Secretary of State for the Environment. It is part of the role of the Environment Agency to provide technical research and guidance in matters concerning contaminated land.

Although the need for a public register of contaminated land as set out in section 143 of the EPA 1990 has been repealed there remains within the now enacted Environment Act 1995 a

role for Borough and District Councils in identifying and acting on land contamination. This has now been further defined and is outlined in the following guidance notes.

Summary Guidance Notes on the Implementation of Part IIA of the Environmental Protection Act 1990 – Contaminated Land

Introduction

The following is intended as a general guide outlining the main issues that land and property owners and developers will have to consider with regards to the contaminated land regime, which came into force on 1 April 2000.

This is the first time that contaminated land issues in England have been brought under an integrated legislative framework. In addition to the Act it is also expected during the next few years to have clarification of such issues as specific guideline values for various contaminants along with mechanisms for quantitative risk assessment. The assessment techniques are likely to develop more clearly towards a health based risk assessment utilising the significance of toxicological and ecotoxicological parameters.

Government Policy and Objectives of New Regime

There are a number of important government policies and priorities underlying the Act. The first priority is to prevent the creation of new contamination by use of this Act and other controls such as Integrated Pollution Prevention and Control and Waste Management licensing. The second is to identify and remove unacceptable risks to human health and the environment. In addition there is a desire to bring contaminated land back into beneficial use whilst seeking to ensure that the cost burdens faced by individuals, companies and society as a whole are proportionate, manageable and economically sustainable. These policy objectives are also underlain by the "suitable for use" approach to the remediation of contaminated land, which the Government considers is the most appropriate approach to achieving sustainable development. In essence the approach is not aiming at a "Garden of Eden" but a removal of unacceptable risks and a long term goal of reduction and progressive improvement in land quality.

The main objective underlying the introduction of the Part IIA Contaminated Land regime is to provide an improved system for the identification and remediation of land where contamination is causing unacceptable risks to human health or the wider environment, assessed in the context of the current use and circumstances of the land.

The new regime broadly reflects the approaches already in place under the statutory nuisance regime and Part VII of the Water Resources Act 1991. The Government's primary objectives for introducing the new regime are:

1. to improve the focus and transparency of the controls, ensuring authorities take a strategic approach to problems of land contamination;
2. to enable all problems resulting from contamination to be handled as part of the same process; previously separate regulatory action was needed to protect human health and to protect the water environment;
3. to increase the consistency of approach taken by different authorities; and
4. to provide a more tailored regulatory mechanism, including liability rules, better able to reflect the complexity and range of circumstances found on individual sites.

In addition to providing a more secure basis for direct regulatory action, the Government considers that the improved clarity and consistency of the new regime, in comparison with its predecessors, is also likely to encourage voluntary remediation. This forms an important secondary objective for implementation of the Part IIA regime.

Companies who may be responsible for contamination, for example on land they currently own or on former production sites, will be able to assess the likely requirements of regulators acting under Part IIA. They will then be able to plan their own investment programmes to carry out remediation in advance of actual regulatory intervention.

Similarly, the Part IIA regime will assist in the recycling of previously developed land. The new regime cannot be used directly to require the redevelopment of land, only its remediation. However, the Government considers that implementation of the regime will assist developers by reducing uncertainties about so-called "residual liabilities", in particular the perceived risk of further regulatory intervention. In particular it will:

1. reinforce the "suitable for use" approach, enabling developers to design and implement appropriate and cost-effective remediation schemes as part of their redevelopment projects;
2. clarify the circumstances in which future regulatory intervention might be necessary (for example, if the initial remediation scheme proved not to be effective in the long term); and
3. set out the framework for statutory liabilities to pay for any further remediation, should that be necessary.

"Suitable for Use" Approach

This approach to dealing with contaminated land recognises that the risks presented by any given level of contamination will vary greatly on a site by site basis. The approach considers 3 elements:

1. ensuring that land is suitable for current use
2. (i.e. identifying unacceptable risks)
3. ensuring that land is made suitable for any new use, as planning permission is given for that new use (i.e. identify unacceptable risks to new use).

Limiting requirements for remediation to the work necessary to prevent unacceptable risks to human health or the environment in relation to current use or future use of the land for which planning permission is being sought (i.e. identify risk to specific uses)

Main Feature of Regime

There are two main players in the new regime with differing but complementary roles as set out in Table I below.

TABLE I

Local Authority Role	Environment Agency Role	Remarks
Enforcing Authorities for all contaminated land not designated as Special Sites.	Enforcing Authority for Special Sites.	Special Sites are to be designated by Local Authority Environment Agency based on descriptions in the regulations.
Identification and inspection of contaminated land.	Assist in identification of contaminated land particularly where water pollution is involved	A written strategy should have been published by July 2001 by each Local Authority.
Establish who should bear responsibility for remediation (appropriate person and proportion of costs).	Provide specific guidance e.g. toxicological data and assistance to Local Authorities	This is likely to be complex in some situations of multiple pollutants and multiple substances.

TABLE I - continued		
Local Authority Role	**Environment Agency Role**	**Remarks**
Issue remediation notices for contaminated sites.	Issue remediation notices for special sites.	
Hold a register of information.	Technical research.	
	Publish periodic reports on contaminated land.	

This definition is: A strategic approach is designed to enable a Local Authority to identify, in a rational, ordered and efficient manner, the land which merits detailed individual inspection, identifying the most pressing and serious problems first and concentrating resources on the areas where contaminated land is most likely to be found. In developing a strategy many factors will apply such as the history of the area and the geological and hydrogeological aspects of the area. The strategic approach has been likened to a "land MOT" picking up those features of most importance.

Definition of Contaminated Land/Risk Assessment

Contaminated land has been defined for the first time under Part 11A EPA 1990. This definition is: Contaminated land is land which appears to the local authority to be in such a condition, by reason of substances in, or under the land, that significant harm is being caused, or there is a significant possibility of such harm being caused, or that pollution of controlled waters is being, or is likely to be, caused.

The definition of contaminated land is based upon the principles of risk assessment. Risk is defined as the probability of frequency of occurrence of a defined hazard and the magnitude of the consequences.

The statutory guidance uses the concept of a POLLUTANT LINKAGE – that is a linkage between a CONTAMINANT (source) and a RECEPTOR, by means of a PATHWAY. Detailed definitions and guidance are given with regard to types of receptor and significance of harm. A Local Authority in assessing and identifying contaminated land must therefore identify A SIGNIFICANT POLLUTANT LINKAGE.

A contaminant is a substance which is in, on or under the land and which has the potential to cause harm to a receptor or to cause pollution of controlled waters. A receptor is a living

organism, a group of living organisms, an ecological system, a piece of property or controlled water. A pathway is one or more routes or means by, or through, which a receptor is being or could be exposed to or affected by a contaminant.

A Local Authority will need to satisfy itself that both a pollutant linkage exists and that it is resulting in significant harm or there is significant possibility of significant harm to a receptor or pollution to controlled water is occurring or pollution may result. In assessing significance the Local Authority will look at the nature and degree of harm, susceptibility of the receptor and timescale associated with use.

A detailed definition of significant harm is provided which includes such areas as death, disease, birth defects, genetic mutation or serious injury to humans (Number of people, effect, intake and exposure to contaminant) irreversible adverse change to ecological systems (ecotoxicological properties), harm to species of special interest, crop damage, death and disease of livestock and pets, structural failure or substantial damage.

Provision for Payment

In general the responsibility for paying for remediation will, where feasible, follow the "polluter pays" principle. In the first instance, any person who caused or knowingly permitted the contaminating substance to be in, or under the land will be the appropriate person(s) to undertake the remediation and meet its costs. If it is not possible to find such a person, responsibility will pass to the current owner or occupier of the land (excluding water pollution sec 1.10).

Appropriate Person

Part 11A EPA defines two different categories (Class A and B) of Appropriate Person and sets out the circumstances in which persons may be responsible for remediation. The designation of the 'appropriate person' is classified as "any person, or any of the persons, who caused or knowingly permitted the substances, or any of the substances, by reason of which the contaminated land in question is such land to be in, on or under the land is an appropriate person. This person is a Class A person and as such the Polluter Pays. Where a Class A person cannot be found after reasonable enquiry then the owner or the occupier of the land (for the time being) becomes the appropriate person and is a Class B person.

Caused or Knowingly Permitted

The test of 'causing' will require that the person concerned was involved in some active operation, or series of operations, to which the presence of the pollutant is attributable. Such involvement may also take the form of a failure to act in certain circumstances. The meaning of the term "knowingly permit" is likely to require both knowledge that the substances in question were in, on or under the land and the possession of the power to prevent such a substance being there. In the Government's view, the test would be met only where the person had the ability to take steps to prevent or remove that presence and had a reasonable opportunity to do so. This situation is likely to become particularly complex in some instances with multiple past polluters, owners and substances perhaps with varying significance of harm.

Planning

Land contamination, or the possibility of it is a material consideration for the purposes of town and country planning. This means that the planning authority has to consider the potential implications of contamination both when it is developing structure or local plans and when it is considering individual applications for planning permission. Under the suitable for use approach, risks should be assessed and remediation requirements set, on the basis of both the current use and circumstances of the land and its proposed new use. It is intended, by DETR, to prepare further guidance on land contamination, which will amplify the guidance in PPG 23, explain the interface with Part IIA EPA from a planning perspective, and provide planning authorities with technical and practical advice on land contamination.

Water Resources Act 1991

Whilst not part of the EPA Part IIA this Act should not be forgotten. This allows an enforcement mechanism by way of a works notice served under section 161A. This is served on any person who has "caused or knowingly permitted" the potential pollutants to be in place from which it is likely to enter controlled water, or to have caused or knowingly permitted a pollutant to enter controlled waters. This is particularly appropriate for historic pollution of groundwater where the Part 11A regime does not apply. The first successful prosecution under section 161A has already occurred.

Other Matters

The importance of contamination and other environmental issues and liabilities may also need to be addressed with regard to such areas as Accountancy rules (FRS 12) which deals with provisions for contingent liabilities and also the regulations that will apply to Integrated Pollution Prevention and Control (IPPC) which will mean that baseline information regarding

the status of land will be required with each permit application. Permit holders will not be able to pollute the land whilst the permit is in operation and will have to clean up to the state the land was in prior to the IPPC permit on cessation of works.

LAND QUALITY STATEMENTS

In February 1995 and in recognition of the growing need for some form of land assessment the RICS published guidance notes for Chartered Surveyors in dealing with land contamination. This guidance was further enhanced and widened with publication of "Contamination and its implications for Chartered Surveyors" in September 1997.

The RICS promoted the concept of Land Quality Statement (LQS) as the written output of an environmental risk assessment. Originally the LQS was used to identify the environmental characteristics of a site which was the subject of a planning application but its use has now expanded into a more generic role. The LQS is now routinely used by developers, purchasers, funding institutions and other professional advisers.

Wardell Armstrong produce the LQS as the first stage in the process of identifying the environmental and technical constraints affecting a site according to the proposed future use.

The LQS should generally fulfil the following:

- categorise the site according to its environmental risk;
- reassure potential purchasers about the environmental risk of a site;
- assist a vendor by removing or confirming concerns about the quality of land and its impact on sale;
- provide insurance companies with the information that is required to underwrite environmental risk;
- reassure lenders or investors about the environmental quality of land used for security or investment;
- assess the impact of environmental factors on development proposals; and
- where necessary, define the scope of a site investigation and risk assessment for the current or intended future use of the land.

The Wardell Armstrong LQS will typically assess the following:

- the current and former uses of the site and its environs in order to identify contaminative uses;
- the geological conditions pertaining to the site;
- the mining context of the site and standard Coal Authority Mining report (where applicable);

- natural cavities database search (where appropriate);
- the hydrogeological setting of the site;
- site walkover survey;
- enquiries to the Environment Agency concerning recorded landfills and water pollution incidents; and
- any other readily accessible information relevant to the context of the site.

The majority of site contamination has been caused since the beginning of the industrial revolution. A schedule of past uses which may have caused contamination is attached to the report as applicable.

APPENDIX III

Sources of Information

The following principal sources of information have been consulted in the preparation of this report:

- Landmark Envirocheck report (*a review of information provided by Landmark Information Group Ltd who were commissioned to provide an "Envirocheck" report consisting of published historical plans, environmental data sheets and environmental sensitivity plans;*
- Ordnance Survey County and National Grid Series Plans;
- British Geological Survey published maps and memoirs;
- Environment Agency/NRA Groundwater Vulnerability Map Series;
- Environment Agency.

APPENDIX IV

Site Visit Record

SITE VISIT RECORD

Date of Visit:	28 February 2014
Client:	Crowther Turnbull Booth
Site Name:	Rightwell House
Refer to Drawing No:	SH11352-002
Visited by:	M Kelly
Job No:	SH11352
Site Contact Name:	Steve Evans – Royal Haskoning DHV
Access (key required):	n/a
Site Area (Ha):	0.82Ha

GENERAL SITE DETAILS

Relevant Identification (*names of buildings, roads etc*):

Rightwell House, Bretton Centre, Peterborough, PE3 8DW

Present Land Use:

Offices and associated parking

Adjacent Land Uses:

Offices to the north and south, offices, shops and a bar to the west and woodland to the east.

Adjacent public highways, roads leading to / crossing / servicing the site:

Rightwell East to the west of the site

Site Access (*main access points, dimensions, by rig/excavator etc, footpaths*):

Off Rightwell East to the north west of the site.

Site Boundary (*hedges, walls and fences open etc*):

Metal fencing to the west and east, hedges and shrubs to the north and south.....

Topography (*general site setting, land gradients, slopes etc*):

Flat.....

EVIDENCE OF LAND USE:

Archaeology (*old buildings, monuments, mounds, ditches, artefacts in soil, pottery/glass*):

No evidence.....

Site Relics (*evidence of past land use, building remains, roads, humps, bumps, hollows etc*):

No evidence .....

Buildings (*general condition/construction, eg: brick/steel framed, asbestos, pits / basement, use*):

All in very good condition, southern building built in 90's eastern building built in 2007. .....

Storage Facilities (*eg: tanks/drums/chemicals/ capacity/condition/bunding/containment*):

Electrical substation on western boundary. .....

Activities/Processes on Site (past and present/materials/equipment):

Office. .....

Observable Environment (*noise/dust/odours/emissions*):

None. .....

Waste Management (*fly tipping/waste disposal/fires*):

No issues. .....

Underground Services (*evidence of manholes, grates, culverts, water supply, telephone*):

Manholes in car park, nothing of note.

Overhead Services (*overhead cables/pipes etc*):

None.

EVIDENCE OF GROUND CONDITIONS

Vegetation (*description and condition, tree, frequency and age, bare patches, saplings, new growth*):

Grass in central landscaped area, semi-mature and mature trees, shrubs and hedges along site boundaries and in landscaped areas.

Ecology (*woodland, trees, hedges, ponds, running water, water loving plants, wild flowers, wildlife*):

Woodland adjacent to the east, hedges and shrubs along northern and southern site boundaries.

Soil Cover (*vegetated/unvegetated soil/made ground/hardstanding/condition/cracks/staining*):

Vegetated in landscaped areas, block paving on walkways around the building and rolled tarmac in the car park.

Evidence of Geological Setting (*made ground, natural superficials and underlying rock*):

No evidence.

Groundwater and Drainage (*ponding, streams, springs, wells, marshes, tides, rivers, etc*):

None.

Subsidence (*fissures, abrupt changes in slope, collapse, tilting trees/posts, property damage*):

No evidence.

Evidence of Mining (*surface features, shafts, trenches, tunnels, caves, wells, boreholes, gas, etc*):

No evidence.

HAZARDS identified:

Electrical substation. .....

Additional Remarks: ……..

.....

Photographs/Video:……

.....

APPENDIX V

Data from Landmark Report

STATUTORY SOURCES OF INFORMATION

Information from the Landmark Information Group Ltd has been summarised in the Table below. The site sensitivity map and full copy of the Envirocheck data is available on request.

Distance from an Approximate Central Point on Site*				
Agency & Hydrological	**On Site**	**0 to 250m**	**251 to 500m**	**501 to 1000m (*up to 2000m)**
Contaminated Land Register Entries and Notices				
Discharge Consents				1
Enforcement and Prohibition Notices				
Integrated Pollution Controls				
Integrated Pollution Prevention and Control				
Local Authority Integrated Pollution Prevention and Control				
Local Authority Pollution Prevention and Controls		1	1	
Local Authority Pollution Prevention and Control Enforcements				
Nearest Surface Water Feature		Yes		
Pollution Incidents to Controlled Waters				1
Prosecutions Relating to Authorised Processes				
Prosecutions Relating to Controlled Waters				
Registered Radioactive Substances			3	
River Quality				
River Quality Biology Sampling Points				
River Quality Chemistry Sampling Points				
Substantiated Pollution Incident Register				
Water Abstractions				7 (*4)
Water Industry Act Referrals				
Groundwater Vulnerability	Yes	n/a	n/a	n/a
Bedrock Aquifer Designations	Yes	n/a	n/a	n/a
Superficial Aquifer Designations		n/a	n/a	n/a
Source Protection Zones				
Extreme Flooding from Rivers or Sea without Defences			n/a	n/a
Flooding from Rivers or Sea with Defences			n/a	n/a
Areas Benefiting from Flood Defences			n/a	n/a
Flood Water Storage Areas			n/a	n/a
Flood Defences			n/a	n/a
Waste	**On Site**	**0 to 250m**	**251 to 500m**	**501 to 1000m (*up to 2000m)**
BGS Recorded Landfill Sites				
Historic Landfill Sites				
Integrated Pollution Control Registered Waste Sites				
Licensed Waste Management Facilities (Landfills Boundaries)				
Licensed Waste Management Facilities (Locations)			1	
Local Authority Recorded Landfill Sites				
Registered Landfill Sites				
Registered Waste Transfer Sites			1	
Registered Waste Treatment or Disposal Sites				
Hazardous Substances	**On Site**	**0 to 250m**	**251 to 500m**	**501 to 1000m (*up to 2000m)**

Control of Major Accident Hazards Sites (COMAH)				
Explosive Sites				
Notification of Installations Handling Hazardous Substances (NIHHS)				
Planning Hazardous Substance Consents				
Planning Hazardous Substance Enforcements				
Geological	**On Site**	**0 to 250m**	**251 to 500m**	**501 to 1000m (*up to 2000m)**
BGS 1:625,000 Solid Geology	Yes	n/a	n/a	n/a
BGS Recorded Mineral Sites				1
Brine Compensation Areas		n/a	n/a	n/a
Coal Mining Affected Areas		n/a	n/a	n/a
Mining Instability		n/a	n/a	n/a
Man-Made Mining Cavities				
Natural Cavities				
Non Coal Mining Areas of Great Britain			n/a	n/a
Potential for Collapsible Ground Stability Hazards	Yes		n/a	n/a
Potential for Compressible Ground Stability Hazards			n/a	n/a
Potential for Ground Dissolution Stability Hazards		Yes	n/a	n/a
Potential for Landslide Ground Stability Hazards	Yes		n/a	n/a
Potential for Running Sand Ground Stability Hazards			n/a	n/a
Potential for Shrinking or Swelling Clay Ground Stability Hazards	Yes		n/a	n/a
Radon Potential - Radon Affected Areas		n/a	n/a	n/a
Radon Potential - Radon Protection Measures		n/a	n/a	n/a
Industrial Land Use	**On Site**	**0 to 250m**	**251 to 500m**	**501 to 1000m (*up to 2000m)**
Contemporary Trade Directory Entries		6	5	15
Fuel Station Entries		1		
Sensitive Land Use	**On Site**	**0 to 250m**	**251 to 500m**	**501 to 1000m (*up to 2000m)**
Areas of Adopted Green Belt				
Areas of Unadopted Green Belt				
Areas of Outstanding Natural Beauty				
Environmentally Sensitive Areas				
Forest Parks				
Local Nature Reserves			1	
Marine Nature Reserves				
National Nature Reserves				
National Parks				
National Sensitive Areas				
Nitrate Vulnerable Zones	1		1	
RAMSAR Sites				
Sites of Special Scientific Interest				
Special Areas of Conservation				
Special Protection Areas				

*The distances recorded are approximate and measured from the site boundary.

** Where 'Yes' and 'No' are referred to this indicates the presence or absence of data and does not imply a potential risk or hazard.

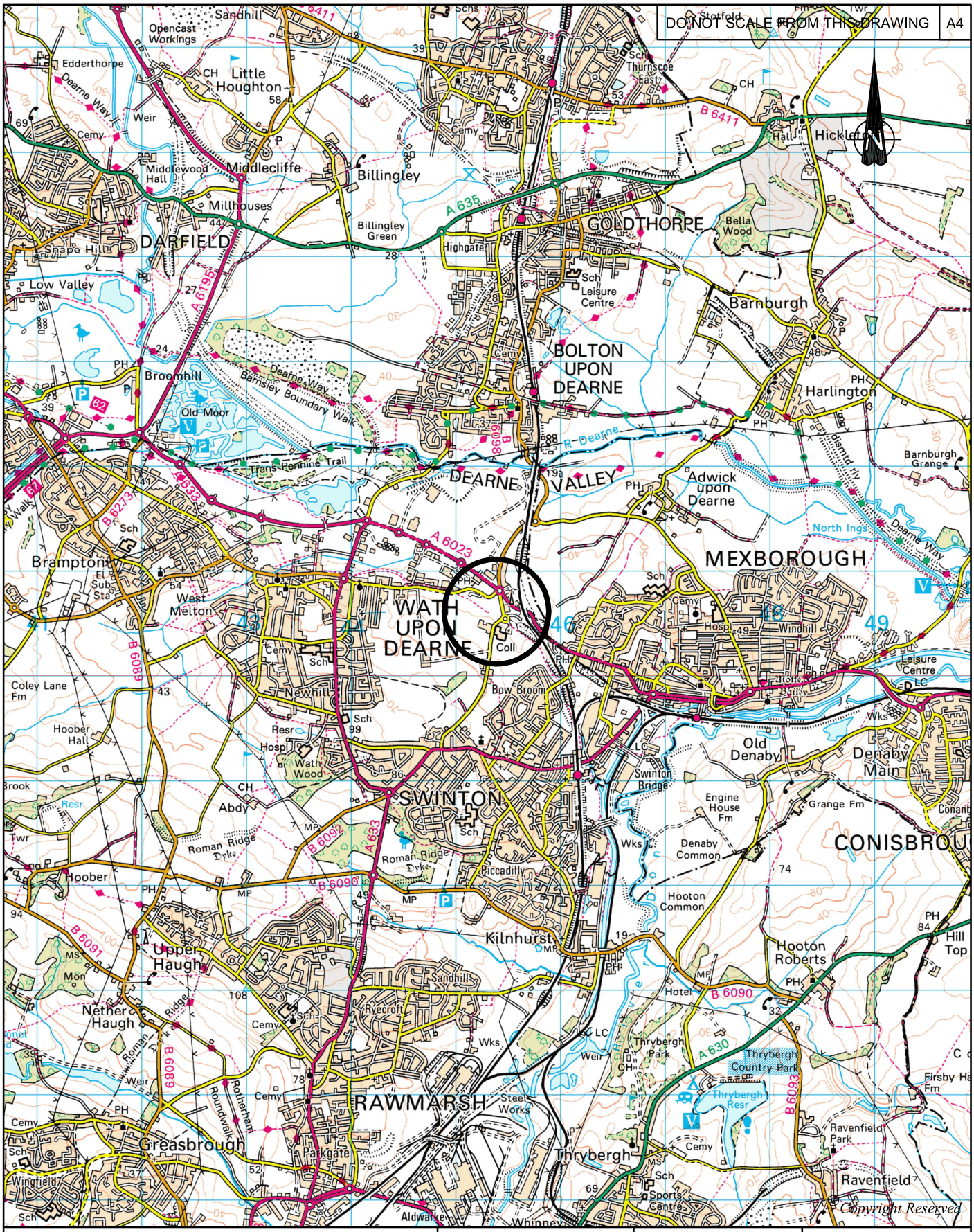
APPENDIX VI

List of Land Uses and Associated Chemicals of Potential Concern

Industry		Metals and non-metals					Inorganics					Organics						Other chemicals and compounds
		Common metal suite (Cd, Cr, Cu, Ni, Pb, Zn)	Hg	As	B	Se	CN	Nitrate	Sulphate	Asbestos	pH	Phenol	Acetone	Hydro-carbons	PAHs	Chlorinated hydro-carbons	PCBs	
Airports		✓					✓			✓	✓		✓	✓		✓	✓	
Animal and animal products processing works		✓		✓					✓			✓		✓	✓	✓		Dieldrin
Asbestos manufacturing works		✓							✓	✓				✓	✓	✓	✓	
Ceramics, cement and asphalt manufacturing works		✓	✓	✓					✓	✓	✓		✓	✓	✓		✓	
Charcoal works		✓	✓	✓		✓	✓	✓	✓	✓	✓		✓	✓		✓	✓	
Chemical works	coatings (paints and printing inks) manufacturing	✓							✓	✓	✓	✓		✓	✓	✓		Ba, S, organotin compounds
	cosmetics and toiletries manufacturing works	✓							✓	✓	✓		✓	✓	✓	✓		
	disinfectants manufacturing works	✓	✓						✓	✓	✓	✓		✓	✓	✓	✓	Ba, chloro-phenol, dioxins/furans
	explosives, propellants and pyrotechnics works	✓	✓	✓	✓			✓	✓	✓	✓	✓	✓	✓		✓	✓	Ba
	fertiliser manufacturing works	✓								✓	✓			✓	✓		✓	
	fine chemical manufacturing works	✓	✓	✓				✓	✓	✓		✓	✓	✓	✓		✓	V, dioxins/furans
	inorganic chemicals manufacturing works	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				✓			Ba
	linoleum, vinyl and bitumen-based floor coverings	✓		✓					✓	✓	✓	✓		✓	✓	✓	✓	organotin compounds
	mastics, sealants, adhesives, roofing felt works.	✓	✓	✓					✓	✓	✓	✓		✓	✓	✓		Ba
	organic chemicals manufacturing works	✓		✓			✓		✓	✓	✓	✓	✓	✓		✓		V
	pesticides manufacturing works	✓	✓	✓						✓	✓	✓		✓		✓	✓	chloro-phenol, hexachloro-cyclohexane, Dieldrin, dioxins/furans, organotin
	pharmaceuticals manufacturing works	✓	✓	✓						✓	✓			✓	✓	✓	✓	
	rubber processing works (including tyres)								✓			✓		✓		✓	✓	S, Zn,
	soap and detergent manufacturing works										✓		✓	✓	✓			
Dockyards and dockland		✓	✓	✓					✓	✓		✓		✓	✓	✓	✓	hexachloro-cyclohexane
Dry cleaners		✓	✓	✓		✓	✓	✓	✓	✓	✓			✓		✓	✓	
Engineering work	aircraft manufacturing works	✓					✓	✓	✓	✓	✓		✓	✓		✓	✓	
	electrical and electronic equipment works	✓	✓	✓	✓			✓	✓	✓	✓			✓		✓	✓	
	mechanical engineering and ordnance works	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	V, Be
	railway engineering works	✓		✓					✓	✓	✓			✓	✓	✓	✓	S
	shipbuilding repair and shipbreaking	✓		✓			✓			✓	✓		✓	✓		✓		organotin compounds
	vehicle manufacturing works	✓				✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	
Fibreglass and fibreglass resin manufacturing works		✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	
Gasworks, coke works and coal carbonisation plants		✓	✓	✓			✓		✓	✓	✓	✓		✓	✓			V, S
Glass manufacturing works		✓	✓	✓	✓		✓	✓	✓	✓	✓		✓	✓		✓	✓	
Metal works	electroplating and other metal finishing works	✓			✓		✓	✓	✓	✓	✓	✓		✓		✓		
	iron and steelworks	✓		✓			✓		✓	✓	✓	✓		✓	✓		✓	V, S
	lead works	✓		✓					✓	✓	✓			✓	✓		✓	
	non-ferrous metals (excluding lead works)	✓	✓		✓				✓	✓				✓	✓		✓	V
	precious metal recovery works	✓	✓	✓				✓	✓	✓	✓			✓		✓	✓	
Oil refineries and bulk storage		✓					✓		✓	✓	✓	✓	✓	✓			✓	organolead compounds
Photographic processing industry		✓	✓	✓		✓	✓	✓	✓	✓	✓		✓	✓		✓	✓	
Power stations (excluding nuclear power stations)		✓	✓	✓		✓			✓	✓	✓			✓	✓	✓	✓	V, Ba, Be
Printing and bookbinding works		✓	✓	✓		✓	✓	✓	✓	✓	✓		✓	✓		✓	✓	
Pulp and paper manufacturing works		✓							✓	✓	✓			✓		✓	✓	hexachloro-cyclohexane, dioxins/furans
Railway land		✓							✓	✓					✓	✓	✓	V
Road vehicle: garages and filling stations		✓								✓	✓			✓	✓	✓		organolead compounds
Road vehicle: transport and haulage centres		✓								✓	✓		✓	✓	✓	✓		V, S, organolead compounds
Sewage works and sewage farm		✓	✓	✓			✓	✓	✓	✓	✓			✓		✓	✓	
Textile works and dye works		✓	✓		✓			✓	✓	✓	✓	✓	✓	✓		✓	✓	Dieldrin
Timber products and manufacturing works		✓		✓	✓				✓			✓	✓	✓	✓			
Timber treatment works		✓		✓	✓				✓	✓	✓	✓		✓	✓	✓		chloro-phenol, hexachloro-cyclohexane, Dieldrin, organotin
Waste management	drum and tank cleaning and recyling plants								✓	✓			✓	✓			✓	
	hazardous waste treatment plants	✓	✓	✓		✓		✓		✓	✓	✓				✓	✓	V, Ba, hexachloro-cyclohexane, Dieldrin
	landfills and other waste treatment/disposal sites	✓		✓					✓	✓	✓			✓	✓	✓	✓	dioxins/furans
	solvent recovery works	✓									✓					✓		
	metal recyling sites	✓	✓	✓			✓		✓	✓	✓			✓		✓	✓	Ba

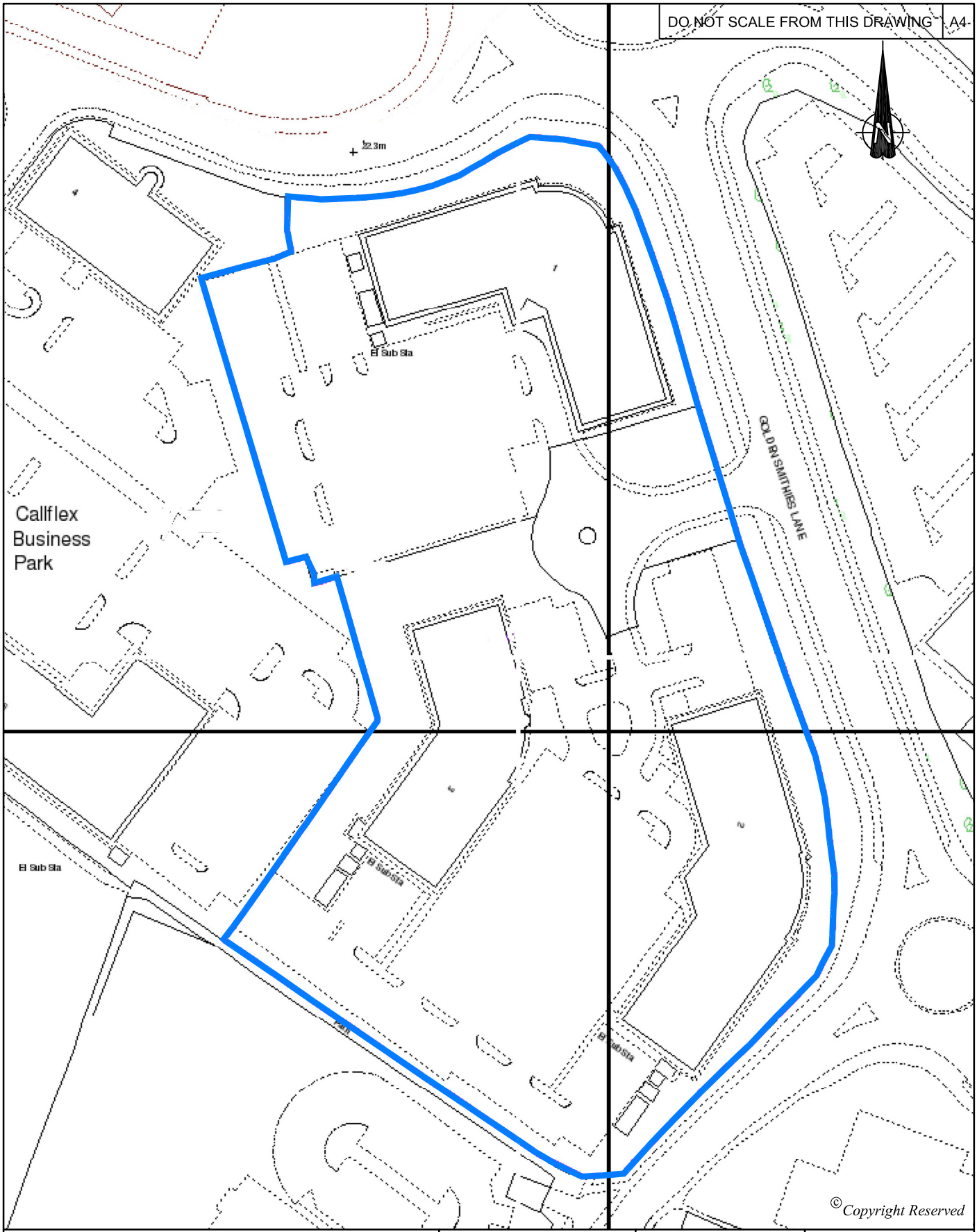
* The information in this table is indicative only and does not present a comprehensive review. The data is summarised from R&D Publication CLR 8, Potential Contaminants for the Assessment of Land, DEFRA and EA, 2002. Assessment of individual sites requires knowledge of historic land use and specific site processes. Irrespective of the information present above there are several contaminants of concern such as hydrocarbons and PCBs, that can be found on any industrial site of significant size.

DRAWINGS



CLIENT: LONGBOW INVESTMENT NO.3 SARL BOURDON HOLDINGS SARL AND BOURDON LTD	DRG No.: SH11353-001	SCALE: 1:50000 @ A4	DATE: 24/02/14
PROJECT: UNITS 1-3 CALLFLEX BUSINESS PARK WATH UPON DEARNE, ROTHERHAM	DRAWN BY: DP	CHECKED BY: JAS	APPROVED BY: GW
DRAWING TITLE: SITE LOCATION PLAN	wardell armstrong — your earth our world		

DO NOT SCALE FROM THIS DRAWING A4



CLIENT: LONGBOW INVESTMENT NO.3 SARL BOURDON HOLDINGS SARL AND BOURDON LTD	DRG No.: SH11353-002	SCALE: 1:1250 @ A4	DATE: 24/02/14
PROJECT: UNITS 1-3 CALLFLEX BUSINESS PARK WATH UPON DEARNE, ROTHERHAM	DRAWN BY: DP	CHECKED BY: JAS	APPROVED BY: GW
DRAWING TITLE: SITE PLAN	wardell armstrong your earth our world		