

Fort Vale Engineering Ltd, Simonstone Lane, Burnley

Phase 1 Geo-Environmental Appraisal



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Executive Summary

This Phase 1 Geo-Environmental Appraisal was commissioned by Fort Vale Engineering Ltd, [FVEL] for the proposed development of a new Investment Casting Foundry on part of a site known as Calder Vale Park, Simonstone, Burnley, Lancashire. FVEL has existing manufacturing facilities on Calder Vale Park immediately to the east of the site now under consideration.

The Appraisal has identified features and activities both on and in the environs of '*The Site*' that could have caused, or be causing contamination. However, all are rated either **low** or **moderate** in terms of their potential perceived risk to end users and controlled water receptors. Primarily these relate to infilled ground and previous structures on '*The Site*' and activities located in its close proximity.

There are also Geotechnical considerations which should be considered as part of the structural foundation design and during construction including, compressible ground conditions and the potential need for ground gas protection measures to buildings.

A Ground Investigation [GI] is therefore recommended to address the above in more detail and in order to satisfy the requirements of the local Planning Authority with regard to Risk Assessment and development of a Remediation Strategy. The GI will focus on gaining an improved understanding of actual ground conditions and the significance of any contamination which is present.

The GI could be combined with a Geotechnical investigation to provide foundation design parameters for the proposed development.

The reader should refer to the body of this Appraisal for further details and not rely solely on this Summary.

1 Introduction

1.1 General

AECOM Limited was commissioned by Fort Vale Engineering Ltd (The Client) to undertake a Phase 1 Geo-Environmental Appraisal of a site adjacent to its existing engineering facilities on Calder Vale Park industrial estate, [hereafter referred to as '*The Site*']. '*The Site*' is proposed for development of a new single storey Investment Casting Foundry, including parking and services areas. It is situated off Simonstone Lane, Simonstone, Burnley, Lancashire and centred at National Grid Reference (NGR) 377240, 433450.

Fort Vale Engineering Ltd manufactures specialist valves and ancillaries for the safe transport, storage and processing of hazardous liquids, foodstuffs, gases and powders.

The location of '*The Site*' is shown in Figure 1.

The key objective of this study was to collate and review readily available geo-environmental information in relation to '*The Site*' and its immediate environs, with respect to potential contamination and ground conditions and to consider the consequential implications for the development of '*The Site*'.

The development has been submitted to Ribble Valley Borough Council for grant of Outline Planning Permission, and this appraisal has been undertaken to satisfy part of the requirements of the Land Contamination condition as detailed in letter correspondence Ref: CE/2010/103862/01-L01 from Ribble Valley Borough Council, dated 27 July 2010.

The application was accompanied by the following reports, which predominantly relate to parts of Calder vale Park that have already been developed:-

- Phase 1 Desk Study prepared by Bullen Consultants reference 104B101/001/A dated September 2004
- Ground Investigation and Risk Assessment prepared by Bullen Consultants reference 104B101/01/A dated June 2005

The Planning Liaison Officer commented as follows:

"We have reviewed these in terms of the risk to controlled waters. The site proposed for redevelopment is not the same as the area detailed. There is a small area of overlap (towards the east of the proposed redevelopment site) and a number of window samples are located in this area (WS1, 2, 3, 4 and 6). However, the main part of the site proposed for re-development site has not been investigated and for this reason we recommend the following condition":

CONDITION No development approved by this planning permission shall be commenced until:

a) A desktop study has been undertaken to identify all previous site uses, potential contaminants that might reasonably be expected given those uses and other relevant information. Using this information a diagrammatical representation (Conceptual Model) for the site of all potential contaminant sources, pathways and receptors has been produced.

b) A site investigation has been designed for the site using the information obtained from (a) above. This should be submitted to, and approved in writing by the local planning authority prior to that investigation being carried out on the site.

c) The site investigation and associated risk assessment have been undertaken in accordance with details approved in writing by the local planning authority.

d) A Method Statement and remediation strategy, based on the information obtained from c) above has been submitted to and approved in writing by the Local Planning Authority.

The development shall then proceed in strict accordance with the measures approved. Work shall be carried and completed in accordance with the approved method statement and remediation strategy referred to in (d) above, and to a timescale agreed in writing by the local planning authority: unless otherwise agreed in writing by the local planning authority.

If during development, contamination not previously identified, is found to be present at the site then no further development (unless otherwise agreed in writing with the local planning authority) shall be carried out until the developer has submitted, and obtained written approval from the local planning authority for, an addendum to the Method Statement. This addendum to the Method Statement must detail how this unsuspected contamination shall be dealt with.

Upon completion of the remediation detailed in the Method Statement a report shall be submitted to the local planning authority that provides verification that the required works regarding contamination have been carried out in accordance with the approved Method Statement(s). Post remediation sampling and monitoring results shall be included in the report to demonstrate that the required remediation has been fully met. Future monitoring proposals and reporting shall also be detailed in the report.

REASON

a) *To identify all previous site uses, potential contaminants that might reasonably be expected given those uses and the source of contamination, pathways and receptors.*

b) *To enable:*

- *A risk assessment to be undertaken,*
- *Refinement of the conceptual model, and*
- *The development of a Method Statement and Remediation Strategy.*

c) & d) *To ensure that the proposed site investigation and remediation strategy will not cause pollution of ground and surface waters both on and off site.*

1.2 Scope of Works

This report is designed to address part a) of the above condition and will provide a way forward for dealing with the other outstanding items. It will be achieved by considering:

- Potential *sources* of contamination;
- The *pathways* along which contamination could travel;
- The *receptors* that could be affected;

The study includes the review and assessment of the following geo-environmental information:

- Current and historical land use;
- Geology, hydrogeology and hydrology of the area;
- Environmental sensitivity;
- Potential sources, migratory pathways and receptors for contamination.

2 Site and Location Description

2.1 Data sources

In addition to the specific information referred to in the various sections below, the following data sources have *inter alia* been used and relied upon:

- Phase 1 Desk Study prepared by Bullen Consultants, Ref 104B101/001/A, dated September 2004;
- Ground Investigation and Risk Assessment prepared by Bullen Consultants, Ref 104B101/01/A, dated June 2005;
- Site Closure Report, Ref: 104B034/Re01, dated May/July 2004;
- Site Closure Lagoons and Ponds Further Analysis report, dated November 2004, produced by Francis Woodward;
- Ordnance Survey (OS) maps – historical and current;
- British Geological Survey (BGS) maps and logs;
- EA Groundwater Vulnerability Map Sheet 10 Central Lancashire, 1:100 000 scale;
- Landmark Envirocheck Data report, ref: 32133940_1_1 (Appendix A);
- Site Check Report from www.magic.gov.uk (Appendix B)
- The Environment Agency Industry Profiles.

2.2 Disclaimer

This Report has been prepared by AECOM Limited for sole use of the client entity detailed above (the “Client”) in accordance with generally accepted consultancy principles, the budget for fees and the terms of reference agreed between AECOM and the Client.

Any information provided by third parties and referred to herein has not been checked or verified by AECOM, unless otherwise expressly stated in the Report, although we have relied upon such in providing discussion and forming conclusions.

It should be noted that any risks identified in this Report are perceived risks based on the information reviewed. Actual risks can only be assessed following physical investigation of ‘The Site’.

The effects of ground and water borne contamination on the environment are constantly under review, and authoritative guidance is subject to change from time to time. The conclusions presented herein are based on the guidance available at the time of writing. No liability can be accepted for the retrospective effects of any changes or amendments to the legislation or guidance.

This Report is only valid when it is used in its entirety. Any Executive Summary or summary letter only contains an overview of the key findings and conclusions. Accordingly, no reliance should be placed on any part of an Executive Summary or summary letter unless and until the whole of this Report has been read and considered in full.

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2.3 Location

‘The Site’ is located off Simonstone Lane, Simonstone, Burnley, as shown in Figure 1.

2.4 Description

'The Site' forms part of the Fort Vale Engineering Ltd (FVE) existing factory complex within the Calder Vale Park site. The existing facility comprises the new headquarter office building and refurbished former production buildings with associated security housing and car parking facilities. The majority of the surrounding area comprises long standing industrial land uses. The site lies to the west of the main FVE premises.

'The Site' comprises of:

- Service Yard;
- Woodland;
- Rough Scrub.

2.5 Topography

'The Site' is undulating associated with its unfilled history (former water storage lagoons associated with the former television component business).

2.6 Site Walkover

2.6.1 Current Site Use

A site walkover survey of 'The Site' was undertaken by a representative of AECOM, on 16 August 2010.

'The Site' comprises a rough scrub area of grassed field and woodland with an approximate 3 metre high security fence running along its periphery. At the time of the walkover survey, fencing works were in progress.

Simonstone Brook runs in close proximity to the sites northern boundary. A ditch runs from north to south through the central site area.

To the north east of the site is situated a new storage area with an above ground bunded tank facility. Mr David Smith, Technical Director, FVE stated that the tank was a water storage facility associated with this new hydro testing facility. The bunding around the tank was formerly related to the storage of oils at this location when the former compressor house was located here. The gravel/hardcore flooring within the surrounding area showed evidence of glass debris and stockpiling.

Lighting ran from north to south through the central site area.

A concrete slab was noted within the central eastern area of the site.

An electricity sub station is located within the south western corner of the site.

2.6.2 Potential Sources of Contamination

Based upon 'The Site' walkover survey, the main sources of potential contamination at 'The Site' are:

- Earth mounds/raised areas noted within the site area.

As a potential source of contamination this land use is ranked as **medium** unless proved otherwise.

The main sources of potential contamination identified surrounding 'The Site' was;

- Former oil storage area.
- Debris/stockpile of glass debris

As a potential source of contamination these land uses are ranked as **medium** unless proved otherwise.

Capabilities on project:
Environment

2.6.3 Geotechnical issues

- A ditch runs through the central area of 'The Site'.
- Ground gas generation within infilled ground on 'The Site'.

2.6.4 Other issues

'The Site' is subject to live services running through the central area and a substation within the south eastern site area.

2.7 Findings of Previous Reports

A site closure report undertaken at the former LG Philips factory site (adjacent) identified the following:

- The factory manufactured glass screens for use in televisions and monitors;
- A number of above ground storage tanks were located on site (diesel and waste waters containing tungsten and nickel);
- Four lagoons and two ponds were created to the east of the main buildings – no impervious lining was believed to have been installed;
- Soil and water samples were taken from Simonstone Brook in July 1999, results were below target values;
- Two historical pollution incidents were identified relating to releases to atmosphere – it was not considered that significant pollution to land or water would have resulted from these incidents;
- Appendices included a list of substances used, stored and manufactured (or waste by-products from the manufacturing process).

A Phase 1 Desk Study undertaken at the Fort Vale Engineering Ltd site identified the following:

- From 1960 to 2004 the site was used for glass manufacturing processes by Mullard Colour Tubes, Philips Semiconductors Ltd and LG Philips Displays - LG Philips vacated the site during 2004;
- A registered landfill site operated by Mullard Simonstone was reported immediately adjacent to the west of the site;
- The landfill received waste materials comprising aluminium oxide, sand, pumice and glass finings;
- Staining of concrete surfaces was noted;
- Coal workings beneath the site had occurred between 270m and 320m, last date of working given as 1955;
- Ground investigations undertaken during 1959 and 2001 did not show any significant concentrations of pollutants, however, screening criteria used at the time had since been superseded and therefore no reliance upon this data could be stated.

A Ground Investigation & Risk Assessment at the Fort Vale Engineering Ltd site identified the following:

- Levels of contamination in soil were below guideline values and therefore soils on site were not considered to represent a hazard to human health;
- Leachability tests identified that soils did not present a risk to the water environment;
- Hot – spots could be encountered which would require appropriate mitigation;
- Concrete, brickwork and tiles were suitable to be re-used as bulk fill beneath new concrete floor slabs;
- Groundwater sampling down hydraulic gradient was found to contain levels of iron and magnesium – no data was collected up hydraulic gradient;
- Olfactory evidence of hydrocarbons was recorded within the area of the diesel tank (waste storage area).

Capabilities on project:
Environment

A Site Closure Lagoon and Ponds Further Analysis report identified the following:

- Groundwater samples were taken on 28 October 2004, at the request of the Environment Agency, to include for Aluminium, Calcium, Chloride, Sulphate and Nitrate analysis;
- Further analysis for Barium and pH taken from samples obtained from the tip at Close Brow (identical to sludge in lagoon) was undertaken;
- The report concluded that there were no unacceptable risks to human health or the environment in line with the requirements of Part IIa of the Environmental Protection Act.

Capabilities on project:
Environment

3 Potential Sources of Contamination.

3.1 Historical Maps

Development of the area over the past 120 years has been reviewed using the historical OS maps (1884 to 2010) obtained from the Landmark Envirocheck History Maps, presented in Appendix A.

3.2 Site History

Following a review of the historical maps, the pertinent features relating to the development of 'The Site' have been summarised in Table 1 below. The map date refers to the period when the feature was shown on the historical map.

Table 1: Site History

On Site Features	Map date	Potential contaminants associated with the land use	Justification	Classification of Consequence
Open ground/Agricultural Land	Pre 1848 – 1960	Oils/greases, hydrocarbons, pesticides.	If the open ground was used for farming land prior to development, localised leaks and spillages from machinery may have occurred. Pesticides may have been used for agricultural purposes.	Minor
Chimney within north eastern site corner associated with adjacent Glass Manufacturing Works	Pre 1977 - 2008	Heavy Metals, Phytotoxic Metals, Hydrocarbons, VOC's, SVOC's, Asbestos, PCB's.	The potential exists for contaminants to have been spilled or leaked. There may be 'hotspots' of contamination related to particular activities or plant/processes.	Medium
Settlement Lagoons/Pond associated with adjacent Glass Manufacturing Works (infilled)	Pre 1985 – Current date	Heavy Metals, Phytotoxic Metals, Hydrocarbons, VOC's, SVOC's, Asbestos, PCB's.	Waste materials comprising aluminium oxide, sand, pumice and glass finings are known to have been deposited. Potential exists for demolition rubble to have been used as infill material.	Medium
Electricity Substation	Pre 2010	PCB's	Older sub stations contained PCB's in dielectric fluids.	Minor
Area of rough grassland/earth mounds	Pre 2006 – Current date	Unknown but potentially aggressive and phytotoxic determinants.	There is a potential for locally generated waste arisings, to have been stockpiled on site.	Medium

Capabilities on project:
Environment

On Site Features	Map date	Potential contaminants associated with the land use	Justification	Classification of Consequence
Car parking/Road way	Pre 2001 – Current date	Hydrocarbons.	Minor leaks and spillages may have occurred.	Mild

3.3 History of the Surrounding Land

The pertinent features of the surrounding land, within a 250m radius of 'The Site' are summarised in Table 2 below.

Table 2: History of the Surrounding Land

Off Site Feature	Approximate distance, m	Map date	Potential contaminants	Justification	Classification of Consequence
Glass Manufacturing Works (tanks/chimneys)	10m north, east, west	Pre 1977 - 2008	Heavy Metals, Phytotoxic Metals, Hydrocarbons, VOC's, SVOC's, Asbestos, PCB's.	The potential exists for contaminants to have been spilled or leaked. There may be 'hotspots' of contamination related to particular activities or plant/processes.	Medium
Railway Line (dismantled)	130m north	Pre 1895 - 1979	Oils, greases, hydrocarbons, PAH's, asbestos.	There is a potential for leaks and spillages to have occurred. Unknown fill materials may have been used during embankment construction; asbestos containing materials may have been released by braking.	Mild/Medium
Quarries and Coal Pits (tanks/shafts)	220m southeast, 900m east, 1.5km south, 1.7m west.	Pre 1848 – 1965 (disused)	Heavy Metals, Hydrocarbons.	Infiltration or inundation into mining tunnels can lead to the release of sulphurous compounds, long chain (tarry) hydrocarbons and heavy metals which can be transported in groundwater.	Minor/Medium

3.4 Contaminated Land

3.4.1 Landfill and Waste Management

The Landmark Envirocheck Report identifies five historical landfills within 1km of '*The Site*'. One is located within the subject site area and was licensed to Mullard Simonstone, first input date given as 31st December 1950 and last input date given as 1st February 1991, deposited wastes are documented as including inert and industrial waste and liquid sludge.

Approximately 640m southeast is an inactive waste management facility, this relates to a landfill taking non-biodegradable wastes and was surrendered in 1994.

3.4.2 Contaminated Land Register Entries and Notices

The Landmark Envirocheck Report identifies no contaminated land register entries or notices within 1km of '*The Site*'.

3.5 Pollution Incidents

The Landmark Envirocheck Report identifies ten pollution incidents have occurred within 250m of '*The Site*' the closest of which relates to a Category 2 - significant incident, dated 1992, located 113m southwest. The incident is related to industrial effluent, although the cause is unknown. Two incidents dated 1994 and 1996 refer to mine water entering the Calder catchment area as Category 3 - Minor Incidents.

3.6 Pollution Prevention and Control Entries

The Landmark Envirocheck Report has identified an integrated pollution prevention control at Padiham Power Station for air releases from combustion processes within the Fuel and Power Industry at a location 387m east.

The subject site is mentioned under the Local Authority Pollution Prevention and Control authorisations, with LG Phillips Displays referenced under glass manufacturing processes (excluding lead glass), the authorisation was transferred September 1992.

3.7 Sensitive Land Use

'*The Site*' is referenced under an area of adopted green belt as well as an area of unadopted green belt under Ribble Valley Borough Council Districtwide Local Plan Alterations Review; Status First Deposit. '*The Site*' is also referenced as being within a nitrate vulnerable zone with reference to surface water.

3.8 Registered Radioactive Substances Sites

The Landmark Envirocheck Report does not identify any registered radioactive substance consents within 1km of '*The Site*'.

3.9 Contemporary Trade Directory Entries and Planning Hazardous Substance Consents

The Landmark Envirocheck Report has identified 5 contemporary trade entries within 1km of '*The Site*'. The subject site is referenced twice with LG Philips classified under Glass Products – Manufacture (Inactive) and Fort Vale Engineering Ltd, classified as an active general engineering works. Others relate to textile manufacturing at a location approximately 185m southeast.

A planning hazardous substance consent has been deemed granted to Philips Components Ltd, 194m east.

4 Geology and Hydrogeology

4.1 Introduction

The geology and hydrogeology of *'The Site'* have been determined using the following:

- BGS 1:50,000 Geology Maps (drift and solid), Sheet 68 Clitheroe (as provided within the Landmark Envirocheck Report).
- Environment Agency (EA) groundwater Vulnerability Map, Sheet 10, 1:100,000, Central Lancashire.

4.2 Published Geology

4.2.1 Superficial Geology

The published geological mapping of the area suggests that beneath any made ground the site is underlain by Till deposits within the northern site area and Alluvium deposits within the southern margins associated with the River Calder.

4.2.2 Solid Geology

The BGS map within the Landmark Envirocheck Report indicates that *'The Site'* is underlain by the Pennine Lower Coal Measures Formation. These typically comprise mudstone, siltstone and sandstone. A Coal Seam is shown to outcrop in the southern area of *'The Site'*.

The BGS map within Landmark Envirocheck Report shows there are no faults crossing the subject site area.

4.3 Borehole Logs

A review of borehole logs has been undertaken from previous investigations within the vicinity of *'The Site'*. A summary of the findings are detailed below.

Source – Wardell Armstrong Report, April 2001

"Borehole records.....immediately to the west along the course of Simonstone Brook, proved glacial boulder clay deposits with sand and gravel lenses to depths up to 7.80 metres";

"Boreholes associated with the former Calder Colliery, proved the underlying bedrocks at depths of between 14.50m and 18.50m".

Source – Bullen Consultants, Ground Investigation & Risk Assessment Report, June 2005

WS1:

0 – 1.50m	Made Ground, topsoil, brick, sand and stone, ash
1.50m - >3.00m	Firm/stiff greyish brown slightly sandy CLAY

WS2:

0 – 0.80m	Made Ground, brick, ash, glass, clay, sand and stone
0.80m - >2.00m	Firm grey and brown mottled very sandy CLAY with a little gravel

WS3:

0 – 0.30m	Made Ground, brick
0.30m - 1.40m	Firm brown and grey mottled very sandy CLAY with a little gravel
1.40m - 1.80m	Brown, orange and grey mottled very sandy CLAY with a little gravel
1.80m - >2.00m	Firm greyish brown slightly sandy CLAY with a little gravel

Capabilities on project:
Environment

WS4:

0 – 1.90m	Made Ground, brick and topsoil, sand, stone, clay and roots
1.90m – 2.60m	Firm grey sandy CLAY with fine roots
2.60m – 2.80m	Brown SAND
2.80m - >3.00m	Grey clayey SAND and GRAVEL

4.4 Mining**4.4.1 Coal Mining**

The Coal Authority Report for '*The Site*' states that the property is in the likely zone of influence from workings in 1 seam of coal at 270m to 290m depth, last worked in 1948. However, it is stated that any ground movement from these coal workings should have stopped by now.

In addition, the property is in an area where the Coal Authority believe there is coal at or close to the surface which may have been worked at some time in the past.

The property is in an area for which a notice of entitlement to withdraw support was published in 1944.

The property lies outside the Cheshire Brine Compensation District.

N.B It did not become a statutory requirement to maintain and preserve plans of abandoned mine workings until 1873 and therefore the possibility exists for unrecorded mining activities to have taken place beneath or adjacent to '*The Site*'.

A full copy of The Coal Authority Report is included in Appendix E.

4.5 Mining and Natural Cavities Data

The report obtained from Landmark Envirocheck states that there is low-moderate hazard from shallow mining risk.

The closest recorded BGS Mineral Site relates to a ceased sandstone opencast quarry located 484m to the northeast.

4.6 Radon

Consultation of the British Research Establishment press, Radon Guidance on Protection Measures for New Buildings, 2007 and the Landmark Envirocheck Report indicates that basic radon protection measures are not required for '*The Site*'.

Areas where protection measures are required are reviewed from time to time as new data becomes available and it is therefore recommended that an updated BR 211 Radon Report is obtained when construction details and relevant consents are being finalised. It is also the case that protection measures are relatively inexpensive to install when buildings are being constructed and it is recommended that consideration is given to the inclusion of these even where the BR 211 report indicates that measures are not required.

4.7 Hydrogeology**4.7.1 Groundwater Vulnerability**

The EA Groundwater Vulnerability Map Sheet 10 Central Lancashire '*The Site*' to be located upon a Minor Aquifer (Secondary A) of variable permeability.

The EA describes minor aquifers as fractured or potentially fractured rocks which do not have a high primary permeability, although not producing large quantities of water for abstraction, they are important for local supplies and in supplying base flow to rivers. The soil classification has been given as both a high and a low leaching potential, this is likely due to the variable superficial deposits overlying '*The Site*'.

Capabilities on project:
Environment

4.7.2 Groundwater Abstractions

The Landmark Envirocheck Report identifies 2 groundwater abstractions within 1km of 'The Site'. These relate to groundwater abstractions for public water supply from a borehole at Altham approximately 225m southeast operated by United Utilities Water plc and for process water at premises approximately 486m east, operated by Granville Executive Trust and The Real Indigo Co Ltd.

4.7.3 Source Protection Zone

'The Site' is not located within a Source Protection Zone for a protected groundwater source.

4.8 Geotechnical Considerations

The potential for the following geotechnical hazards to be present has been considered. Seismic hazards have not been considered, as not normally a design consideration in UK.

Table 3: Geotechnical hazard risk table

Geotechnical Hazard	Could be present	Unlikely to be present	Comment
Filled / Made Ground	✓		Evidence suggests there may be made ground/fill materials within the site boundary.
Compressible / low bearing capacity ground	✓		Information based on geological profile of Landmark Envirocheck Survey designates there may be a hazard on 'The Site'.
Subsurface structures	✓		Structures noted within area on historical mapping and concrete pad noted during walkover survey.
High groundwater		✓	'The Site' is underlain by a minor aquifer. Previous borehole logs identified water ingress at a depth of 3.30m bgl.
Slope instability	✓		Made Ground/Fill Materials are likely to exist, the soils on site may be deeply weathered and include uncemented granular material, which is also potentially unstable.
Instability due to evaporate dissolution		✓	Information based on Geological Profile of Landmark Envirocheck Survey assigns no hazard from such to 'The Site'.
Excavation instability	✓		Made Ground/Fill Materials may exist, the soils on site may be deeply weathered and include uncemented granular material, which is also potentially unstable.
Shrinkable clay soil		✓	Information based on geological profile of Landmark Envirocheck Survey designates there to be a very low hazard on 'The Site'.
Running Sands		✓	Based on geological profile of Landmark Envirocheck Survey there is a low hazard on 'The Site' with regards to running sand.
Adverse ground chemistry (inc. sulphides)	✓		Sources may exist from identified activities on site and from neighbouring industrial activities within the area.
Laterally variable ground conditions	✓		The BGS geological map indicates that 'The Site' is underlain by variable geology.

5 Environmental Setting

5.1 Hydrology

5.1.1 Watercourses

The River Calder runs from east to west approximately 150m south of 'The Site'. Simonstone Brook a tributary to the river is present running northeast to southwest along the north western boundary of 'The Site'.

The Envirocheck Report shows the most recent (year 2000) quality grade of the River Calder in the vicinity of 'The Site' to be Grade C (Fairly Good). No information on the quality of Simonstone Brook is available.

5.1.2 Flood Risk

According to the Landmark Envirocheck Report, the majority of 'The Site' is not within an area at risk to flooding from rivers or sea without defences. However, the southern boundary is within close proximity to a Flooding from Rivers without defence - Zone 3 and the northwest corner is within close proximity to an Extreme Flooding from Rivers without defences - Zone 2.

5.2 Consent to Discharge

The Landmark Envirocheck Report provides details of 2 No. Discharge Consents within 1km of 'The Site'. These are listed below in Table 4.

Table 4 Discharge consents within 1km of 'The Site'

Location	Operator	Receiving water	Status
193m W	United Utilities Water plc	River Calder	Post NRA – issued 1995 Storm sewage overflow
740m N	Taylor Little Construction Ltd	Tributary	Revoked discharge of other matter – surface water

5.3 Ecology

The Landmark Envirocheck Report identifies no Statutory Land Designations (Local and National Nature Reserves, Ramsar sites or National Parks present within a 1km radius of 'The Site'.

5.4 Site Check Report

A site specific report was obtained from www.magic.gov.uk (Appendix B) which indicates that there are no scheduled monuments, forestry commission woodlands, local nature reserves, site's of special scientific interest, countryside and rights of way access, important bird areas within 1km of 'The Site'. The report does, however, identify a greenbelt designation within the area, with reference made to adopted, first deposit and second deposit. No further details are provided.

6 Pollution Linkages

6.1 Introduction

The above information has been reviewed in the context of a *source-pathway-receptor* model for migration of contamination to generate a basic qualitative risk assessment of pollution linkages for 'The Site'.

Only those sources identified as having either a **medium** or **severe** classification of consequence with regards to contamination are considered in this assessment, unless special circumstances dictate the inclusion/omission of others with a lower/similar rating.

The potential pollution linkages associated with 'The Site' are described below, and represent the Conceptual Site Model.

6.2 Sources

Table 5 details the potential sources of contamination at 'The Site'.

Table 5: Potential Sources of Contamination.

Source Number	Nature of Land Use	
	On 'The Site'	Adjacent to 'The Site'
S1	Area of rough grassland/earth mounds	
S2	Previous buildings/chimney associated with adjacent Glass Manufacturing Works	
S3	Settlement Lagoons/Pond associated with adjacent Glass Manufacturing Works (infilled)	
S4		Glass Manufacturing Works (tanks/chimneys)
S5		Railway Line (dismantled)
S6		Quarries and Coal Pits (tanks/shafts)

6.3 Potential Pathways

Potential pathways for contamination present include the following;

- **P1** – Direct contact with soil (e.g. ingestion and dermal contact);
- **P2** – Inhalation of dust and/or vapours;
- **P3** – Inhalation of ground gas;
- **P4** – Surface water runoff;
- **P5** – Broken drains and service trenches;
- **P6** – Direct contact with contaminated soil by buildings and plants;
- **P7** – Leaching of contaminants from soil to groundwater and off-site migration of groundwater;
- **P8** – Migration of mobile contaminants in groundwater into surface waters;

Capabilities on project:
Environment

- **P9** – Migration of mobile contaminants in groundwater on to ‘*The Site*’ from adjacent sites.

6.4 Potential Receptors

It is considered that the following receptors may be impacted by the identified sources:

6.4.1 Human Health Receptors

- **R1** – Maintenance, construction and earthworks personnel, current site users;
- **R2** – End users of ‘*The Site*’;

6.4.2 Buildings

- **R3** – Buildings: effect on foundations of future buildings depending on future land use;
- **R4** – 3rd party property;

6.4.3 Ecology

- **R5** – Landscaping: flora, fauna.

6.4.4 Controlled Waters

- **R6** – Surface Water;
- **R7** – Groundwater.

6.5 Preliminary Risk Assessment

The past and present potential sources of contamination were identified and are discussed in terms of a *source-pathway-receptor* model. DEFRA Contaminated Land Reports (2004) promote a tiered approach to contaminated land risk assessment, whereby a site specific risk assessment is based upon an assessment of plausible pollutant linkages, referred to as the *source-pathway-receptor* model, based upon the current or proposed end use of ‘*The Site*’. A conceptual site model was developed in order to identify the potential contaminant sources, plausible exposure pathways and the receptors at risk from the potential contaminants.

Risks to receptors have been assessed using the guidelines given in CIRIA document 552 ‘Contaminated Land Risk Assessment, A Guide to Good Practice,’ where the probability and consequences of contamination risks being realised are evaluated. The tables presented in Appendix C summarise the elements of the risk assessment process.

The qualitative risk assessment of the possible linkages of the above sources (S1 to S6 inclusive), transport pathways (P1 to P9 inclusive) and receptors (R1 to R7 inclusive) is provided below in Table 6.

Table 6: Qualitative Risk Assessment

Source	Transport Pathway	Receptor	Consequence of risk being realised (refer to Appendix C, Table C.1)	Probability of risk being realised (refer to Appendix C Table C.2)	Risk Classification (refer to Appendix C Table C.3)	Description of Classified Risks and Likely Action Required	
S1:Area of rough grassland/earth mounds	- P1: Direct contact with soil and groundwater (e.g. ingestion and dermal contact). - P2: Inhalation of dust and/or vapours. - P3: Inhalation and/or accumulation of ground gases. - P6: Direct contact with contaminated soil by buildings, and plants. - P7: Leaching of contaminants from soil to groundwater and off-site migration of groundwater.	- R1: Maintenance and earthworks personnel, current site users. - R2: End users of ‘The Site’. - R3: Buildings. - R4:3rd Party Property. - R5: Landscaping.	Medium	Low Likelihood	Low/Moderate Risk	Low Risk: It is possible that harm could arise to a designated receptor for an identified hazard, but it is likely that this harm, if realised, would at worst be mild. Moderate Risk: It is possible that harm could arise to a designated receptor for an identified hazard. However, if it is either unlikely that any such harm would be severe, or if any harm were to occur it is more likely that the harm would be relatively mild. High Risk: Investigation is required to qualify and quantify any potential risk, and to determine the potential liability. Some remedial works may be required in the long term. Harm is likely to arise to a designated receptor from an identified hazard. The risk, if realised, is likely to result in substantial liability. Urgent investigation (if not undertaken already) is required and remedial works may be necessary in the short term and are likely in the long term.	
	- P4: Surface water runoff. - P5: Broken drains and service trenches. - P8: Migration of mobile contaminants in groundwater into surface waters.	- R1: Maintenance and earthworks personnel. - R4: 3rd Party Property. - R6: Surface Water. - R7: Groundwater.					
S2: Previous buildings/chimney associated with adjacent Glass Manufacturing Works	- P1: Direct contact with soil (e.g. ingestion and dermal contact); - P2: Inhalation of dust and/or vapours. - P3: Inhalation and/or accumulation of ground gases. - P6: Direct contact with contaminated soil by buildings, waters and plants. - P7: Leaching of contaminants from soil to groundwater and off-site migration of groundwater.	- R1: Maintenance and earthworks personnel, current site users. - R2: End users of ‘The Site’. - R3: Buildings. - R4:3rd Party Property. - R5: Landscaping.	Medium	Low Likelihood	Low/Moderate Risk		
	- P4: Surface water runoff. - P5: Broken drains and service trenches. - P8: Migration of mobile contaminants in groundwater into surface waters.	- R1: Maintenance and earthworks personnel. - R4: 3rd Party Property. - R6: Surface Water. - R7: Groundwater.					
S3: Settlement Lagoons/Pond associated with adjacent Glass Manufacturing Works (infilled)	- P1: Direct contact with soil (e.g. ingestion and dermal contact); - P2: Inhalation of dust and/or vapours. - P3: Inhalation and/or accumulation of ground gases. - P6: Direct contact with contaminated soil by buildings, waters and plants. - P7: Leaching of contaminants from soil to groundwater and off-site migration of groundwater.	- R1: Maintenance and earthworks personnel, current site users. - R2: End users of ‘The Site’. - R3: Buildings. - R4:3rd Party Property. - R5: Landscaping.	Medium	Low Likelihood	Low/Moderate Risk		
	- P4: Surface water runoff. - P5: Broken drains and service trenches. - P8: Migration of mobile contaminants in groundwater into surface waters	- R1: Maintenance and earthworks personnel. - R4: 3rd Party Property. - R6: Surface Water. - R7: Groundwater.					

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Source	Transport Pathway	Receptor	Consequence of risk being realised (refer to Appendix C, Table C.1)	Probability of risk being realised (refer to Appendix C Table C.2)	Risk Classification (refer to Appendix C Table C.3)	Description of Classified Risks and Likely Action Required
S4: Glass Manufacturing Works (tanks/chimneys)	- P1: Direct contact with soil (e.g. ingestion and dermal contact). - P2: Inhalation of dust and/or vapours. - P3: Inhalation and/or accumulation of ground gases. - P6: Direct contact with contaminated soil by buildings, waters and plants. - P7: Leaching of contaminants from soil to groundwater and off-site migration of groundwater.	- R1: Maintenance and earthworks personnel, current site users. - R2: End users of ‘<i>The Site</i>’. - R3: Buildings.	Medium	Low Likelihood	Low/Moderate Risk	
	- P4: Surface water runoff. - P5: Broken drains and service trenches. - P9: Migration of mobile contaminants in groundwater on to ‘<i>The Site</i>’ from adjacent sites.	- R1: Maintenance and earthworks personnel. - R5: Landscaping floras and fauna. - R6: Surface Water. - R7: Groundwater.				
S5: Railway Line (dismantled)	- P2: Inhalation of dust and/or vapours. - P3 Inhalation and/or accumulation of ground gases.	- R1: Maintenance and earthworks personnel, current site users. - R2: End users of ‘<i>The Site</i>’. - R3: Buildings.	Medium	Low Likelihood	Low/Moderate Risk	
	- P4: Surface water runoff. - P5: Broken drains and service trenches. - P9: Migration of mobile contaminants in groundwater on to ‘<i>The Site</i>’ from adjacent sites.	- R5: Landscaping, floras and fauna. - R6: Surface Water. - R7: Groundwater.				
S6: Quarries and Coal Pits (tanks/shafts)	- P2: Inhalation of dust and/or vapours. - P3 Inhalation and/or accumulation of ground gases.	- R1: Maintenance and earthworks personnel, current site users. - R2: End users of ‘<i>The Site</i>’. - R3: Buildings.	Medium	Low Likelihood	Low/Moderate Risk	
	- P4: Surface water runoff. - P5: Broken drains and service trenches. - P9: Migration of mobile contaminants in groundwater on to ‘<i>The Site</i>’ from adjacent sites.	- R5: Landscaping, floras and fauna. - R6: Surface Water. - R7: Groundwater.				

7 Summary and Discussion

7.1 Geo-Environmental Considerations

This Phase 1 Geo-Environmental Appraisal has found activities both past and present on and within the vicinity of *'The Site'* that may have caused or be causing contamination, although all are currently rated either **low** or **moderate** in terms of their potential perceived risk to end users and controlled water receptors.

The potential source of contaminants on *'The Site'* includes;

- The potential for contaminated Made Ground/Fill Materials to be present on *'The Site'*.
- The potential for 'hotspots' of contamination associated with previous buildings formerly located on *'The Site'*.

The potential source of contaminants off *'The Site'* includes;

- Glass Manufacturing Works.
- Railway Line.
- Quarries and Coal Pits

7.2 Geotechnical Considerations

A number of geotechnical hazards, both on and within the immediate environs of *'The Site'*, have been identified which are included in Section 4.8 Geotechnical Considerations.

7.3 Ground Investigation

7.3.1 Aim of Investigation

A Ground Investigation [GI] is warranted to establish a better understanding of the ground conditions, and to identify whether contamination is present which would be likely to represent a significant possibility of significant harm to either human health, controlled waters or flora/fauna in line with the requirements of Part IIa of the Environmental Protection Act.

This would focus on the material content of the apparent made ground/earth mounds and whether there has been/is any impact on *'The Site'* from its former uses as part of the wider Glass Manufacturing Works facility. We note the presence of infilled lagoons on *'The Site'* and although the Desk Study has not uncovered any evidence indicating significant contamination in these areas, they will be targeted due to the generic concerns normally associated with such features.

The Ground Investigation should be designed in accordance with BS10175:2001 and BS5930:1999.

The findings of the GI will be used to satisfy the requirements of the local Planning Authority with regard to Risk Assessment and development of a Remediation Strategy, should such subsequently be required.

7.3.2 Laboratory Testing

Appropriate chemical laboratory testing of soils and waters would be required to assess the absence or presence of potential contaminants that may be present on site, as identified in this study, and the potential for such to migrate from soils towards identified receptors, as well as proving an indication of actual ground conditions.

All laboratory testing should be undertaken at suitably accredited facilities.

7.3.3 Gas Monitoring

The potential for ground gas generation has been identified at *'The Site'* and therefore gas monitoring is considered appropriate. This could be undertaken as part of the GI or once development proposals are confirmed, subject to LPA approval. It is recommended that the ground gas monitoring programme be designed and undertaken in accordance with the recommendations of CIRIA C665 - Assessing risks posed by hazardous gases to buildings to ensure that appropriate gas protection measures are incorporated into building designs, if required.

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7.3.4 *Other Issues*

'The Site' contains trees and security fencing which restrict access. Dependent on the GI details/methods, some trees/fences may need to be removed. This could have other implications on development, [e.g. tree preservation orders, presence of bats]. An assessment of access requirements should be made by the ground investigation contractor prior to work commencing.

Capabilities on project:
Environment

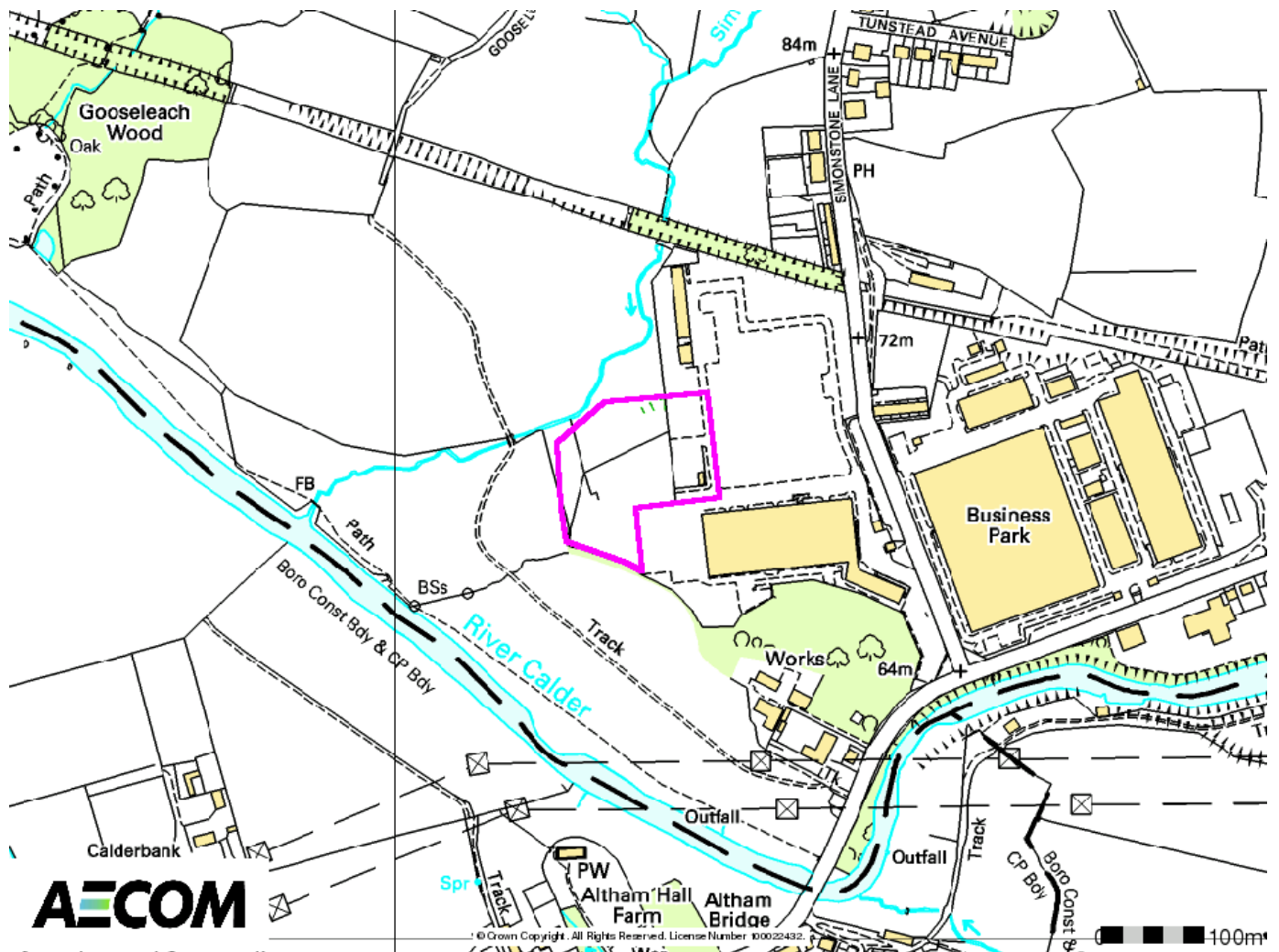
References

- BGS 1:50,000 Geology Maps (drift and solid);
- CIRIA document 552 'Contaminated Land Risk Assessment, A Guide to Good Practice';
- CIRIA C665 - Assessing risks posed by hazardous gases to buildings;
- EA 1:100,000 Groundwater Vulnerability Map;
- EA DEFRA (2002) Contaminated Land Exposure Assessment (CLEA) and the associated CLR and Tox report series;
- Human health toxicological assessment of contaminants in soil. Science Report Final SC050021/SR2;
- Updated technical background to the CLEA model. Science Report Final SC050021/SRC;
- A review of body weight and height data used within the Contaminated Land Exposure Assessment model (CLEA). Project SC050021/Final technical review 1.
- EA Pollution Prevention Guidelines (PPG) 6 2003;
- Environmental Protection Act 1990, Part IIA, as introduced by the Environment Act 1995;
- Environmental Protection Act 1990, Parts I and II;
- Landmark Site Check Report;
- Landmark History Maps;
- Magic report www.magic.gov.uk;
- BS5930:1999 Code of practice for site investigations;
- BS10175:2001 Investigation of potentially contaminated sites code of practice.

Capabilities on project:
Environment

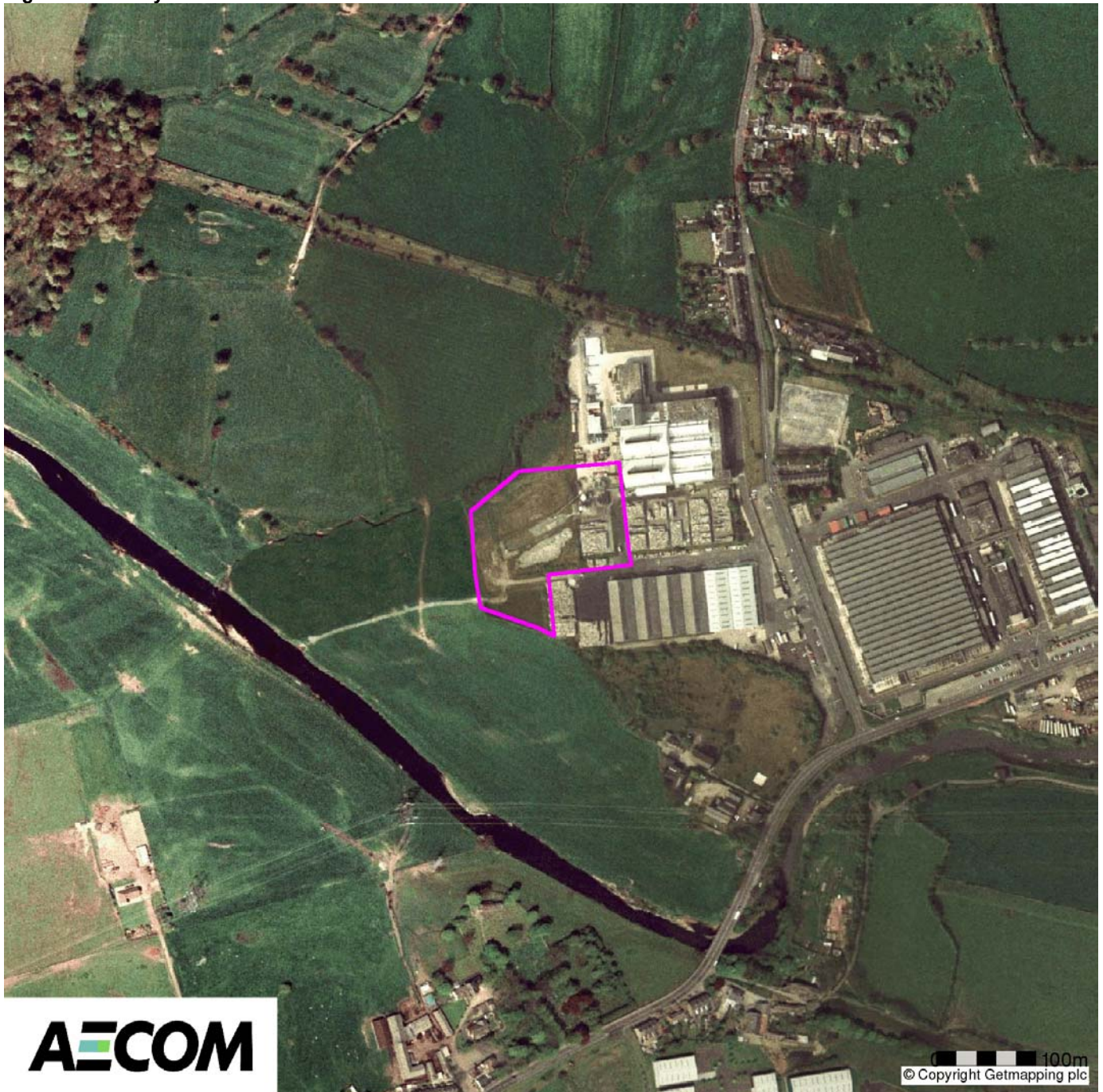
Figures

Figure 1: Site Location Plan



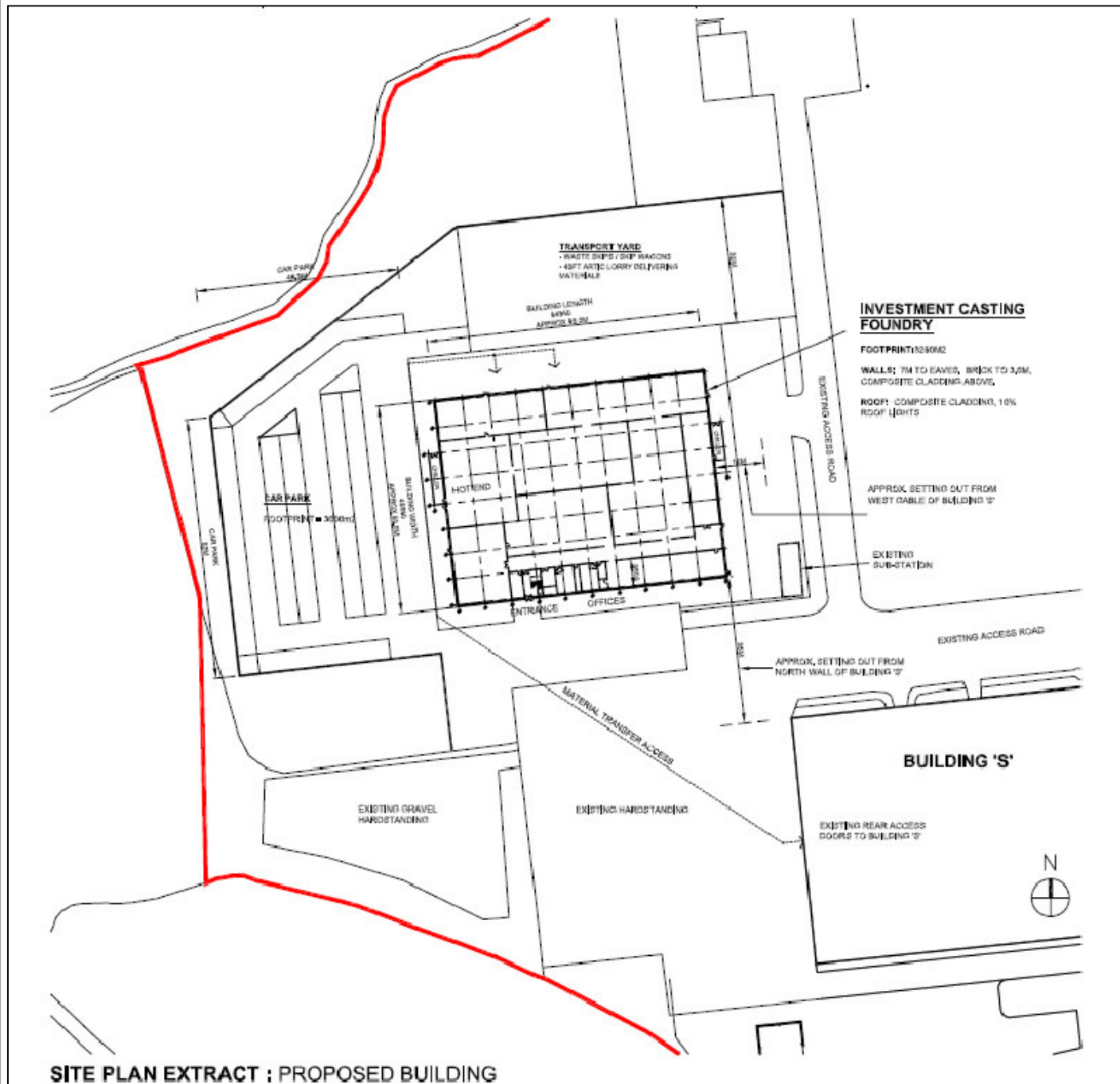
Capabilities on project:
Environment

Figure 2: Site Layout Plan



Capabilities on project:
Environment

Figure 3: Proposed Site Layout Plan



Title :
PROPOSED SITE LAYOUT PLAN

Eng : CAD	CAD : DAR	Date : 31/08/10
Chk'd : CAD	App'd : DJV	Scale : NTS

Status :

AECOM

5th Floor
 2 City Walk,
 LEEDS, LS11 9AR

Tel: +44 (0) 113 391 6800
 Fax: +44 (0) 113 391 6899
 www.aecom.com

No. 60161156 FIGURE 3

Rev:

Plates – Photographs

The following photographs were taken on '*The Site*' walkover survey conducted on 16 August 2010.

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P01 – Looking across *'The Site'* to the south.



P02 – Looking northeast across *'The Site'*



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P03 – Looking northeast from northern end of site



P04 – Earth mounds/raised area on *'The Site'*.



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P05 – Looking west towards Simonstone Brook.



P06 – Looking east, stockpiled mound of glass fragments.



Appendices



Capabilities on project:
Environment

Appendix A: Landmark Reports

Appendix B: Magic Report

Site Check Report

Report generated on August 31 2010.

You clicked on the point:

Grid Ref: **SD 772 334**

Full Grid Ref: **377240 , 433450**

The following features have been found within 1,000 metres of your search point:

Counties, Metropolitan Districts and Unitary Authorities (GB)

Geographic Level	Name
COUNTY	LANCASHIRE

NUTS1 - Government Office Regions (GB)

Hotlink	Name	Reference
http://www.statistics.gov.uk/geography/nuts_nw.asp	NORTH WEST	UKD

Forestry Commission Woodland (England)

There are no features within your search area.

Environmentally Sensitive Area Agreements (England)

There are no features within your search area.

Nitrate Vulnerable Zones (England)

There are no features within your search area.

Local Nature Reserves (England)

There are no features within your search area.

National Nature Reserves (England)

There are no features within your search area.

Ramsar Sites (England)

There are no features within your search area.

Special Protection Areas (England)

There are no features within your search area.

Sites of Special Scientific Interest (England)

There are no features within your search area.

Countryside and Rights of Way Act 2000 - Access Layer (England)

There are no features within your search area.

Important Bird Areas (England)

There are no features within your search area.

Nitrate Sensitive Areas (England)

There are no features within your search area.

Capabilities on project:
Environment

Green Belt (England)

Authority	Scale of Original Plan	Date Local Plan was Published	Name of Local Plan	Reference	Status
BURNLEY BOROUGH COUNCIL	1:10,000	31/10/1991	BURNLEY DISTRICT LOCAL PLAN	13615240	ADOPTED
HYNDBURN BOROUGH COUNCIL	1:10,000	30/11/1996	BOROUGH OF HYNDBURN LOCAL PLAN	13756409	ADOPTED
RIBBLE VALLEY BOROUGH COUNCIL	1:50,000	30/06/1998	RIBBLE VALLEY DISTRICT WIDE LOCAL PLAN	13885761	ADOPTED
HYNDBURN BOROUGH COUNCIL	1:10,000	30/11/1996	BOROUGH OF HYNDBURN LOCAL PLAN	21650166	ADOPTED
BURNLEY BOROUGH COUNCIL	1:10,000	31/05/2003	BURNLEY LOCAL PLAN	20969507	SECOND DEPOSIT
RIBBLE VALLEY BOROUGH COUNCIL	1:50,000	31/03/2004	RIBBLE VALLEY DISTRICTWIDE LOCAL PLAN ALTERATIONS REVIEW	22132412	FIRST DEPOSIT

Areas of Outstanding Natural Beauty (England)

There are no features within your search area.

Undetermined Grassland (England)

There are no features within your search area.

Scheduled Monuments (England)

There are no features within your search area.

Appendix C: Contamination Risk Tables

After CIRIA document 552: 'Contaminated Land Risk Assessment; A Guide to good practice' (Ref. 11).

Table C1: Classification of Consequence

Classification	Definition
Severe	Short-term (acute) risk to human health likely to result in "significant harm" as defined in the Environmental Protection Act, Part IIA. Short-term risk of pollution of sensitive water resource (note: Water Resources Act contains no scope for considering significance of pollution). Catastrophic damage to buildings/property. A short-term risk to a particular ecosystem, or organism forming part of such ecosystem (note: the definitions of ecological systems within the Draft Circular on Contaminated Land, DETR, 2000)
Medium	Chronic damage to Human Health ("significant harm" as defined in DETR, 2000). Pollution of sensitive water resources (note: Water Resources Act 1991 contains no scope for considering significance of pollution). A significant change in a particular ecosystem, or organism forming part of such ecosystem. (note: the definitions of ecological systems within Draft Circular on Contaminated Land, DETR, 2000)
Mild	Pollution of non-sensitive water resources. Significant damage to crops, buildings, structures and services ("significant harm" as defined in the Draft Circular on Contaminated Land, DETR, 2000). Damage to sensitive buildings/services or the environment
Minor	Harm, although not necessarily significant, which may result in a financial loss, or expenditure to resolve. Non-permanent health effects to human health (easily prevented by means such as personal protective clothing etc.). Easily repairable effects of damage to buildings, structures and services.

Table C2: Classification of Probability

Classification	Definition
High likelihood	There is a pollution linkage and an event that either 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	There is a pollution linkage and all the elements are present and in the right place, which means that it is probable that an event will occur. Circumstances are such that an event is not inevitable, but possible in the short term and likely over the long term.
Low Likelihood	There is a pollution linkage and circumstances are possible under which an event could occur. However, it is by no means certain that even over a longer period such an event would take place, and is less likely in the shorter term.
Unlikely	There is a pollution linkage but circumstances are such that it is improbable that an event would occur even in the very long term.

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Table C3: Comparison of Consequence against Probability

Probability	Consequence			
	Severe	Medium	Mild	Minor
High Likelihood	Very High Risk	High risk	Moderate risk	Moderate Risk/low risk
Likely	High Risk	Moderate risk	Moderate/ low risk	Low risk
Low Likelihood	Moderate risk	Moderate risk/low risk	Low risk	Very low risk
Unlikely	Moderate/Low risk	Low risk	Very low risk	Very low risk

Table C4: Description of Classified Risks and Likely Action Required

Risk Descriptor	Definition
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 the designated receptor is currently happening. The risk, if realised, is likely to result in 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. The risk, if realised, is likely to result in substantial liability. Urgent investigation (if not undertaken already) is required and remedial works may be necessary in the short term and are likely in the long term.
Moderate Risk	It is possible that harm could arise to a designated receptor for an identified hazard. However, if it is either unlikely that any such harm would be severe, or if any harm were to occur it is more likely that the harm would be relatively mild. Investigation (if not already undertaken) is normally required to clarify the risk, and to determine the potential liability. Some remedial works may be required in the long term.
Low Risk	It is possible that harm could arise to a designated receptor for an identified hazard, but it is likely that this harm, if realised, would at worst 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 not likely to be severe.

Capabilities on project:
Environment

Appendix D: Coal Authority Report

Issued by:

The Coal Authority, Mining Reports Office, 200 Lichfield Lane, Berry Hill, Mansfield, Nottinghamshire NG18 4RG
ON-Line Service: www.groundstability.com - Phone: 0845 762 6848 - DX 716176 MANSFIELD 5

CUSTOMER SERVICES,
LANDMARK INFORMATION GROUP LIMITED,
ABBAY COURT UNIT 5/7,
EAGLE WAY,
SOWTON INDUSTRIAL ESTATE,
EXETER,
DEVON,
EX2 7HY

Person dealing with this matter:	Eric Fretwell
Our reference:	00035416-10
Your reference:	32133940
Electronic Ref:	EME_00014345490004_005
RRUID:	005.00014345490004
Date of your enquiry:	10 August 2010
Date we received your enquiry:	10 August 2010
Date of issue:	11 August 2010

This report is for the property described in the address below and the attached plan.

Non-Residential Coal and Brine Report

Site At Calder Vale Park, Simonstone Lane, Simonstone, Burnley, Lancashire

This report is based on and limited to the records held by, the Coal Authority, and the Cheshire Brine Subsidence Compensation Board's records, at the time we answer the search.

Coal mining	Yes
Brine Compensation District	No

Information from the Coal Authority

Underground Coal Mining

Past

The property is in the likely zone of influence from workings in 1 seam of coal at 270m to 290m depth, and last worked in 1948.

Any ground movement from these coal workings should have stopped by now.

In addition the property is in an area where the Coal Authority believe there is coal at or close to the surface. This coal may have been worked at some time in the past.

Present

The property is not in the likely zone of influence of any present underground coal workings.

Future

The property is not in an area for which the Coal Authority is determining whether to grant a licence to remove coal using underground methods.

The property is not in an area for which a licence has been granted to remove coal using underground methods.

The property is not in an area that is likely to be affected at the surface from any planned future workings.

However reserves of coal exist in the local area which could be worked at some time in the future.

No notice of the risk of the land being affected by subsidence has been given under section 46 of the Coal Mining Subsidence Act 1991.

Mine entries

There are no known coal mine entries within, or within 20 metres of, the boundary of the property.

Records may be incomplete. Consequently, there may exist in the local area mine entries of which the Coal Authority has no knowledge.

Coal-mining geology

The Authority is not aware of any evidence of damage arising due to geological faults or other lines of weakness that have been affected by coal mining.

Opencast Coal Mining

Past

The property is not within the boundary of an opencast site from which coal has been removed by opencast methods.

Present

The property does not lie within 200 metres of the boundary of an opencast site from which coal is being removed by opencast methods.

Future

The property is not within 800 metres of the boundary of an opencast site for which the Coal Authority is determining whether to grant a licence to remove coal by opencast methods.

The property is not within 800 metres of the boundary of an opencast site for which a licence to remove coal by opencast methods has been granted.

Coal-mining subsidence

The Coal Authority has not received a damage notice or claim for the property since 1 January 1984. There is no current Stop Notice delaying the start of remedial works or repairs to the property.

The Authority is not aware of any request having been made to carry out preventive works before coal is worked under section 33 of the Coal Mining Subsidence Act 1991.

Mine gas

There is no record of a mine gas emission requiring action by the Coal Authority within the boundary of the property.

Hazards related to coal mining

The property has not been subject to remedial works, by or on behalf of the Authority, under its Emergency Surface Hazard Call Out procedures.

Withdrawal of Support

The property is in an area for which a notice of entitlement to withdraw support was published in 1944.

The property is not in an area for which a notice has been given under section 41 of the Coal Industry Act 1994, revoking the entitlement to withdraw support.

Working Facilities Orders

The property is not in an area for which an Order has been made under the provisions of the Mines (Working Facilities and Support) Acts 1923 and 1966 or any statutory modification or amendment thereof.

Payments to Owners of Former Copyhold Land

The property is not in an area for which a relevant notice has been published under the Coal Industry Act 1975/Coal Industry Act 1994.

Comments on Coal Authority information

In view of the mining circumstances a prudent developer would seek appropriate technical advice before any works are undertaken.

Therefore if development proposals are being considered, technical advice relating to both the investigation of coal and former coal mines and their treatment should be obtained before beginning work on site. All proposals should apply good engineering practice developed for mining areas. No development should be undertaken that intersects, disturbs or interferes with any coal or mines of coal without the permission of the Coal Authority. Developers should be aware that the investigation of coal seams/ former mines of coal may have the potential to generate and/or displace underground gases and these risks both under and adjacent to the development should be fully considered in developing any proposals. The need for effective measures to prevent gases entering into public properties either during investigation or after development also needs to be assessed and properly addressed. This is necessary due to the public safety implications of any development in these circumstances.

Information from the Cheshire Brine Subsidence Compensation Board

The property lies outside the Cheshire Brine Compensation District.

Additional remarks

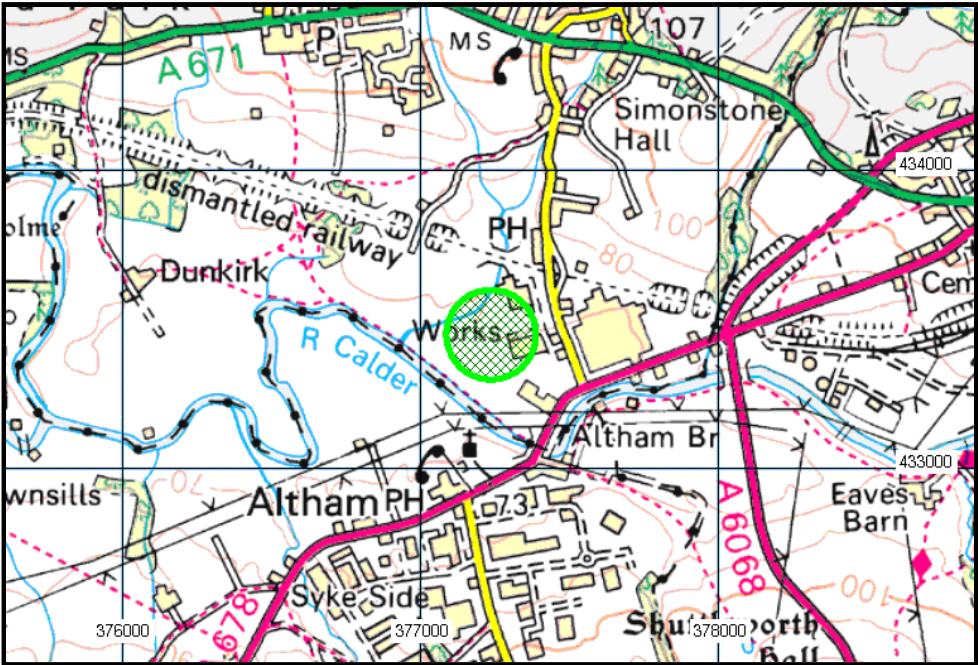
This report is prepared in accordance with the Law Society's Guidance Notes 2006, the User Guide 2006 and the Coal Authority and Cheshire Brine Board's Terms and Conditions 2006. The report is compliant with Home Information Pack requirements.

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Location map



Approximate position of property



Enquiry boundary

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Key

Approximate position of enquiry boundary shown

