PHASE 1 PRELIMINARY RISK ASSESSMENT FOR BARNBURGH LANE, BARNBURGH

ISSUE 1.0

TE1069PRA

19 MARCH 2018

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DOCUMENT CONTROL

Project No. :	TE1069PRA
Report Status:	Final
Issue No.:	V 1.0
Project Engineer:	Callum Jones
Date of Issue:	19/03/2018
Signature:	



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Issue No.	Description of Issue / Revision	Date of Issue	Reviewed By	Author Initial
1.0	Final	19/03/2018	AR	CJ

CONTENTS

1. INTRODUCTION 1
2. SITE DETAILS AND DESCRIPTION 3
3. ENVIRONMENTAL SETTING 4
3.1. Site History 4
3.2. Geology 5
3.3. Mining and Quarrying 6
3.4. Hydrogeology 7
3.5. Hydrology 7
3.6. Ecological Features 8
3.7. Landfill and Waste Management Activity 8
3.8. Local Potentially Contaminative Activities 9
3.9. Radon Risk 10
4. PROPOSED DEVELOPMENT 11
5. CORRESPONDENCE WITH SYMAS 12
6. LOCAL AUTHORITY AND ENVIRONMENT AGENCY SEARCH 13
7. PRELIMINARY CONCEPTUAL MODEL 14
7.1. Justification 14
7.2. Uncertainties 16
8. FURTHER WORKS 19
9. REGULATORY APPROVALS 21
10. REFERENCES 22

TABLES

Table 2.1. Current Site Overview.....3

Table 3.1. Site History. 4

Table 3.2. Geological Summary.....5

Table 3.3. Coal Mining Activities. 6

Table 3.4. Other Extractive Industries.....6

Table 3.5. Groundwater Occurrence and Abstraction. 7

Table 3.6. Surface Water Features.....7

Table 3.7. Ecological Features.....8

Table 3.8. Waste Management Activities.....8

Table 3.9. Other Potentially Contaminative Processes in the Locality. 9

Table 3.10. Radon Risk Status..... 10

Table 7.1. Preliminary Assessment of Potential Pollutant Linkages..... 17

APPENDICES

APPENDIX A – FIGURES AND DRAWINGS

APPENDIX B – GLOSSARY OF TERMS

APPENDIX C – DEFINITION OF SOURCE PROTECTION ZONES AND GROUNDWATER VULNERABILITY ASSESSMENTS

APPENDIX D – DEFINITIONS OF TERMS USED IN QUALITATIVE AND QUANTITATIVE RISK ASSESSMENTS

APPENDIX E – GROUNDSURE REPORT

APPENDIX F – LOCAL AUTHORITY PRE-APPLICATION ENQUIRY RESPONSE, LOCAL AUTHORITY CORRESPONDENCE AND REGULATOR ENVIRONMENTAL SEARCH RESPONSES

EXECUTIVE SUMMARY

Introduction	Tier Environmental was commissioned by MHH Contracting Ltd to undertake a desk study and Phase I Preliminary Risk Assessment for land west of Barnburgh Lane, Barnburgh, Doncaster. The purpose of the investigation was to establish land use history and review available information to determine the environmental setting of the Site and potential risks associated with soil and groundwater contamination, hazardous gases and mining in the context of the proposed railway cutting infilling works. Due consideration has been made of 5 No. items raised in the Pre-Application Enquiry Response from Doncaster Metropolitan Borough Council in a document reference: 17/00356/PREAPP, dated 24th October 2017, when producing this report.
Site location	The site is located west of Barnburgh Lane, Barnburgh, Doncaster, near postcode S63 9NT. A site location plan is included as Drawing No. TE1069PRA1 within Appendix A.
Site history	The Site historically comprised agricultural land until development Circa 1904 when construction began on Dearne Valley Railway until c1980 when the railway was dismantled. Pertinent surrounding land uses include Barnburgh colliery immediately south of the Site with potentially infilled ponds, reservoirs and baths within 250m, with former tanks annotated within the former colliery Site.
Probable ground conditions	BGS information indicates that part of the Site is underlain by Alluvium, comprising clay, silt and sand. The solid geology is shown to comprise both the Ackworth Rock – sandstone, and the Pennine Upper Coal Measures Formation. Made Ground is anticipated given the historic uses of the Site.
Ground stability	The Site is located within a former Coal Mining area; however it is anticipated that historic coal mining will not present a risk to the proposed redevelopment of the Site.
Potential soil and groundwater contamination	Potential moderate risks have been identified associated with human health risks from existing and proposed imported Made Ground materials with moderate / low risks identified associated with hazardous ground gas generation for off-site receptors from future imported materials. Moderate / low risks have been identified for the controlled waters environment from proposed imported materials.
Ground gas generation potential	Whilst potentially infilled ponds, reservoirs and landfill have been reported within the vicinity of the Site, it is deemed that the risk posed by ground gas is low due to the proposed end land use and the absence of indoor space for any ground gases to build up. There is a risk that material brought onto site may be a source of ground gas generation for off-site receptors, therefore it is proposed that Total Organic Carbon (TOC) analysis and assessment of ground gas generation potential is undertaken in accordance with BS8485:2015 (BSEN13137 method).
Further works	It is recommended that an intrusive site investigation is undertaken in order to confirm the chemical and geotechnical nature and extent of the pre-existing Made Ground and natural deposits beneath the Site, the nature and extent of any landfill material on Site, the chemical analysis, including combustibility of materials being brought onto site, and Plate Bearing Tests being undertaken to ensure that the materials are being emplaced in accordance with any future earthworks specification.

1. INTRODUCTION

Tier Environmental was commissioned by MHH Contracting Limited to undertake a desk study and Phase I Preliminary Risk Assessment (PRA) of land west of Barnburgh Lane, Barnburgh, Doncaster, near post code S63 9NT.

The Site location is shown on Drawing No. TE1069PRA1, presented in Appendix A.

This report covers a parcel land shown on Drawing No. TE1069PRA2. It is understood that the Site comprises an overgrown disused railway cutting which is to be infilled with inert granular material to restore contours to pre-industrial levels and includes underfilling of a steel bridge. This will provide for a landscape strategy to create linear woodland along the former railway cutting and create a public right of way with new connections to existing local amenities.

The pre-application requirements for this project have been set out by Doncaster Metropolitan Borough Council in a document reference: 17/00356/PREAPP, dated 24th October 2017 (included in Appendix F) and include:

- *[Item 1] The area in question adjoins a former colliery site which is noted to have run off by inspections undertaken by the South Yorkshire Mining Advisory Service (SYMAS), as such advice should be sought from SYMAS about the implications this may have on the development.*
- *[Item 2] Council records show the railway cutting has already been partially in filled and as such is on our landfill register; there is concern that the works proposed could have a detrimental effect on the landfill, for example may release waste or damage any cap which is in place.*
- *[Item 3] With regards to the infilled material, to safeguard future site users Pollution Officers would need to ensure the material in question is not combustible, does not pose a ground gas risk, and is not above the POS generic assessment criteria for soils.*
- *[Item 4] Consideration should also be given to any controlled waters in the vicinity, with any leachable material being risk assessed to ensure it doesn't pose a risk to surface/ ground waters in the vicinity.*
- *[Item 5] It is advised the above areas of concern should be investigated/ risk assessed further, it may be specific conditions are required to safeguard human health and the wider environment.*

Taking into account these conditions, it is proposed that this PRA will facilitate the production of a Preliminary Conceptual Site Model, inform the nature and extent of proposed investigations, sampling rates and suites of laboratory chemical analysis in accordance with CLR11.

Taking into account the planned future use of the Site, the objectives of this appraisal were:

- To determine the land use history from review of available historical documentation and maps.
- To establish the environmental setting of the Site.
- To determine the likely soil and groundwater conditions, including whether significant contamination could have resulted from past or current land use(s).

- To determine the potential risks posed by any pre-existing ground contamination and provide recommendations on potential remedial measures to manage such risks.
- To determine the potential for risks posed to the Site from hazardous ground gases.
- To evaluate whether past mining or other extractive industries could have an influence on the Site.
- To provide information relating to any potential soil management issues.
- To consider the sensitivity of the surrounding environment with respect to the proposed imported infill material.
- To provide an outline proposal for testing and assessment for the proposed imported infill material, in light of the surrounding environment's sensitivity and future site uses.

The desk-study part of this investigation included the assessment of information provided by GroundSure. The information provided by this organisation is provided in Appendix E.

This report, which was designed to meet the requirements of all relevant current guidance including the remaining CLR reports, presents the factual information available during this appraisal, interpretation of the data obtained and recommendations relevant to the defined objectives.

It has been assumed in the production of this report that the Site is to be redeveloped for Public Open Space (POS) end land use. In addition, it is assumed that the final ground levels will not change significantly *from those described* in this report. If this is not the case, then amendments to the recommendations made in this report may be required.

Where the report refers to the potential presence of invasive plants (such as Japanese Knotweed) or asbestos-containing materials, such observations are for information only and should be verified by a suitably qualified expert.

The comments and opinions presented in this report are based on the findings of the desk study. There may be other conditions prevailing on the Site which have not been revealed by this investigation and which have not been taken into account by this report. Responsibility cannot be accepted for any conditions not revealed by this investigation. Any diagram or opinion on the possible configuration of the findings is conjectural and given for guidance only. Confirmation of intermediate ground conditions should be undertaken if deemed necessary.

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2. SITE DETAILS AND DESCRIPTION

Table 2.1. Current Site Overview.

Site name	Barnburgh Lane, Barnburgh, Doncaster
Site address	Barnburgh Lane, Barnburgh, Doncaster, near postcode S63 9NT. A site location plan is included as Drawing No. TE1069PRA1 within Appendix A.
National Grid Reference	447409, 403624
Location description	The Site is located within a mixed agricultural, residential and former industrial area.
Approximate Site area	1.97 ha
Site shape	The site area as a whole is irregularly shaped, best described as long, thin approximately rectangular in a general northwest – southeast orientation.
General topography and ground levels	The Site is a former railway line within an artificial cutting. The surrounding land is approximately 40.00m AOD. It is understood that the cutting is between 3.00m and 8.00m below this level.
Current land use	The Site is an overgrown, abandoned former railway cutting.
Surrounding land uses	The site is currently surrounded at large by open fields. A small number of residential dwellings, farm buildings and a possible electricity substation are annotated around the site with associated road infrastructure.
Existing structures	It is understood the former railway infrastructure has been removed from the cutting.
Site ground surfaces	The Site is currently overgrown with vegetation.
Sub-surface structures	The precise nature and extent of any below ground structures is unknown; however, unrecorded structures and services should be anticipated.
Fly Tipping	Unknown.
Invasive plant species	The presence/absence of invasive plant species should be confirmed by a qualified specialist.

The main Site features are shown on Drawing No. TE1069PRA2 within Appendix A.

3. ENVIRONMENTAL SETTING

3.1. Site History

Extracts of Ordnance Survey (OS) plans dated from 1854 to 2014 were reviewed. These were obtained as part of the GroundSure report for the Site, which is presented in Appendix E.

Table 3.1 presents a summary of the main aspects of the Site from 1854 to 2014 relevant to the current and proposed future end uses. It is not the intention of this report to describe in detail all of the changes that have occurred on or adjacent to the Site, where these are not relevant to contaminative land use.

Table 3.1. Site History.

Source (Map edition, scale)	On-Site features	Off-Site features
1854, 1:10,560	• The Site largely comprises agricultural fields. • An unspecified lane is annotated cutting through the centre of the Site in a north – south orientation.	• Barnbrough Lane is annotated immediately north of the Site in a general northwest – southeast orientation. • The Site is surrounded by agricultural fields. • A spring is annotated 300m northwest. • An 'engine house' is annotated 430m southwest. • Westmoor Dyke is annotated immediately west of the site in a general north – south orientation.
1890, 1:10,560	• The Site is not shown.	• The surrounding site area is not shown.
1893, 1:10,560	• The Site is not shown.	• The surrounding site area is not shown.
1904, 1:10,560	• The Site is annotated "Railway in course of construction".	• No significant changes.
1907, 1:10,560	• No significant changes.	• No significant changes.
1930, 1:2,500	• Dearne Valley Railway is now annotated across the entire Site in the form of a railway cutting and railway line. • The unspecified lane is now annotated Green Lane.	• Barnboro' Main Colliery is now annotated immediately south of the Site. There are numerous unspecified buildings associated with the colliery annotated immediately south. • Numerous 'shafts' associated with the colliery are annotated. • Structures including 'water cooler', 'engine house' 'baths', 'reservoir', and 'railway sidings' are annotated immediately south of the Site. • Dearne Valley Railway is annotated entering and leaving the site at the northwest – southeast boundaries. • A 'filter bed' is annotated 250m south of the Site. • 7 No. unspecified buildings (likely residential dwellings) are annotated along Green Lane.
1932, 1:10,560	• No significant changes.	• Goldthorpe Colliery is annotated 480m northwest of the Site.
1939, 1:10,560	• The Site is not shown.	• The surrounding site area is not shown.
1948, 1:10,560	• No significant changes.	• No significant changes.
1951, 1:10,560	• No significant changes.	• 2 No. unspecified buildings are annotated 45m north of the northwest most end of the Site.

Source (Map edition, scale)	On-Site features	Off-Site features
1961, 1:2,500	• No significant changes	• A 'slag heap' is annotated from 110m north. • A pond is annotated 250m north. • 3 No. unspecified buildings are annotated 250m north.
1966, 1:10,560	• No significant changes.	• The 2 No. previously unspecified buildings north of the Site are now annotated as one building annotated 'works'. • Dovecote Farm is annotated immediately south of the Barnboro' Main Colliery, 315m from Site. • Allotment Gardens are annotated immediately south of the Site.
1976, 1:10,000	• No significant changes.	• 'Active workings' are annotated 300m north. • A track and possible pond are annotated 150m southwest of the Site.
1981-1984, 1:2,500	• The railway track on Site is now annotated 'Dismantled Railway'	• An electricity substation is annotated to the north alongside the buildings annotated 'works'.
1988, 1:10,000	• No significant changes.	• A spoil heap is annotated 50m north of the Site.
1993, 1:2,500	• No significant changes.	• A spoil heap is annotated from 100m north.
2002, 1:10,000	• No significant changes.	• Barnboro' Main Colliery is no longer annotated. • A number of cuttings and tracks associated with the former railway and colliery are still annotated immediately southeast and south of the Site. • A disused 'tip' is annotated 90m north of the Site. • An electricity line is annotated in the north-western most corner of the Site. • 3 No. unspecified structures are annotated 150m west of the Site. • A number of 'drains' are annotated in the vicinity of the Site in general north – south orientations.
2010, 1:10,000	• No significant changes.	• The tip is no longer annotated to the north.
2014, 1:10,000	• No significant changes.	• No significant changes.

3.2. Geology

Table 3.2. Geological Summary.

Maps and publications referenced	GroundSure Report.
Worked Ground	BGS information indicates that the Site comprises worked ground in the form of a void.
Made ground	It is anticipated that Made Ground may be present given the historical redevelopment of the Site.
Drift geology	BGS information indicates that part of the Site is underlain by Alluvium- clay, silt and sand.
Solid geology	The Site is shown to be underlain by both the Ackworth Rock – sandstone, and the Pennine Upper Coal Measures Formation. The majority of the Site is shown to be underlain by the Ackworth Rock, a section of the site towards the north-western side of the Site is shown to be underlain by the Pennine Upper Coal Measures Formation.

Dip of solid strata	Not established.
Faults	• On-Site – Normal fault – inferred. • 60m northwest – Normal fault, inferred.
Coal seams	4 No. seams of coal at 270m to 710m depth, last worked in 1891.

3.3. Mining and Quarrying

Table 3.3. Coal Mining Activities.

	Yes/No	Comments
Is the Site in an area of potential shallow coal workings?	Yes	The property is in a surface area that could be affected by underground mining in 4 No. seams of coal at 270m to 710m depth, last worked in 1891. According to the Coal Authority any movement in the ground due to coal mining activity should have stopped.
Are there any known shafts, adits, tips, lagoons, or opencast workings likely to affect the Site?	No	There are no known coal mine entries within, or within 20m of the boundary of the Site.
Is exploratory work required to investigate the potential risk from shallow mining or quarrying?	No	

Table 3.4. Other Extractive Industries.

	Yes/No	Comments
Superficial drift deposits		
Evidence of extraction on or within 250 m of the Site?	Yes	Evidence on Site and in the vicinity relating to the disused railway cutting and lagoon associated with the former colliery.
Action required?	No	
Solid Strata		
Any evidence of mineral extraction on or within 250 m of the Site?	NA	
Action required?	No	

Other, undocumented mineral workings on or close to the Site cannot be completely dismissed.

3.4. Hydrogeology

Table 3.5. Groundwater Occurrence and Abstraction.

	Presence/location	Comments
Depth(s)	Unknown	
Aquifer classifications	On Site	Secondary A Aquifer - Alluvium
	On Site	Secondary A Aquifer – Pennine Upper Coal Measures Formation / Ackworth Rock
Direction of flow	Anticipated to be to the northwest	Based on local topography and towards West Moor Dyke
Licensed abstractions	NR within 1km	
Potable abstractions	NR within 2km	
Source Protection Zones	NR within 500m	
Springs	NR	

NR - none recorded. For definition of Source Protection Zones, see Appendix C.

3.5. Hydrology

Table 3.6. Surface Water Features.

	Presence/location	Comments
Environment Agency GQA classified watercourses	190m northeast	West Moor Dyke – Biological Grade C
	1350m southwest	River Dearne – Chemical grade D
Unclassified watercourse(s)	On Site	West Moor Dyke
	165m southwest	Drain – tertiary river
Licensed abstractions	NR within 1km	
Canals, ponds, lakes, etc.	NR	
Flood risk status	On Site	NR
Surface run-off and Site drainage	The nature and extent of an existing surface water system is unknown; however it is anticipated that precipitation will infiltrate directly into the ground in the areas of existing grass/vegetation.	

NR - none recorded. Environment Agency GQA assessments: A = very good to E = poor

3.6. Ecological Features

Table 3.7. Ecological Features.

	Presence/location	Comments
Designated locations	NR within 1000m	
Other sensitive locations	On Site	Liverpool, Manchester and West Yorks Greenbelt, Barnsley District (B), Doncaster District (B).
	370m northeast	Ancient Replanted Woodland
Land use controls	On Site	Nitrate Vulnerable Zone
Invasive plants		A survey by a qualified invasive plant consultant is required to confirm the absence or extent of invasive species.
Trees and shrubs	On Site	Dense vegetation across the Site.

NR - none recorded

3.7. Landfill and Waste Management Activity

Table 3.8. Waste Management Activities.

	Presence/location	Comments
Local authority recorded landfills	NR within 500m	
BGS recorded landfills	NR within 500m	
Environment Agency historic landfills	On-Site	Hollow Gate Bridge – licensed to British Coal – last recorded Dec 1990, waste type unknown. Applies to approximately 1/6th of the Site.
	295m southeast	Hollowgate, Barnburgh – licensed to British Rail – waste type unknown.
Other licensed waste management facilities within 250 m	NR	
Is there evidence of other landfilling on or within 250 m of Site?	Historical evidence of potentially infilled ponds, shafts, reservoir and baths within 250m of the site.	
Walkover evidence of fly-tipping on Site?	NR	
Is a landfill/ground gas risk assessment required?	Yes	It is recommended that works are undertaken to confirm the nature and extent of Made Ground at the Site. Including the nature of material previously land-filled on-site and in the southeast and the extent of any capping layer if present.
Records of Nitrate Vulnerable Zones	On-Site	

NR - none recorded.

3.8. Local Potentially Contaminative Activities

Other potentially contaminative activities are shown in Table 3.9. The entries relate to activities within *circa* 250 m of the Site, with the exception of COMAH facilities where the assessment is extended to a distance of *circa* 500m from the Site.

Table 3.9. Other Potentially Contaminative Processes in the Locality.

	Location	Comments
Active Discharge Consents	NR within 500m of the Site	
	230m southwest	Sewer storm overflow – revoked 2005
Prosecutions relating to controlled waters	NR	
Substantiated pollution incidents	NR within 500m	
Historic IPC Authorisations	NR	
Part A(1) and IPPC Authorised Activities	NR	
Part A(2) and Part B Activities and Enforcements	325m northwest	Part B – British Coal – coal/ gypsum/ carbon process
List 1 Dangerous Substance Inventory Sites	NR	
Registered radioactive substances	NR	
Prosecutions relating to authorised processes	NR	
Enforcement and prohibition notices	NR	
Planning - hazardous substances consents and enforcements	NR	
COMAH sites	NR	
NIHHS sites	NR	
Fuel station entries	NR	
Pertinent contemporary trade directory entries	On Site	Cuttings
	On Site	Colliery
	5m southwest	Colliery
	10m north	Colliery
	10m north	Railway sidings
	20m north	Unspecified works
	25m north	Electricity substation – given the low mobility of PBCs in the environment, this is not considered to pose a significant risk.
	60m north	Refuse heap
	160m southwest	Unspecified pit/ ground workings

	Location	Comments
	160m northwest	Railway building
	185m south	Colliery
	240m south	Unspecified tank
	240m northwest to 500m southwest	Numerous refuse heaps, unspecified shafts, cuttings and railway buildings.

NR - none recorded

COMAH – Control of Major Accident Hazards (regulations); NIHHS – Notification of Installations Handling Hazardous Substances (regulations)

3.9. Radon Risk

Table 3.10. Radon Risk Status.

	Radon protection measures required? (Yes/No)	Comments
BRE (1999), Report 211	No	The Site is not located within a Radon Affected Area as less than 1% of properties are above the Action Level. As such, no radon protection measures are required.
BGS Site-specific report	Not requested	

4. PROPOSED DEVELOPMENT

It is understood that the Site is to be developed by infilling a former railway cutting with inert granular material to restore contours to pre-industrial levels and includes underfilling of a steel bridge. This will provide for a landscape strategy to create linear woodland along the former railway cutting and create a public right of way with new connections to existing local amenities, the former Barnburgh colliery site and expanding residential areas east of Goldthorpe.

The proposed site layout is as shown on Sectional Elevations Drawing 192-SK-003, dated 22nd December 2016 (produced by Urban Wilderness) and appended to this report.

5. CORRESPONDENCE WITH SYMAS

Following on from correspondence with the Local Authority, contact has been made to SYMAS (South Yorkshire Mining Advisory Service) regarding the issue of run-off from the former Barnburgh Colliery.

> *"The area in question adjoins a former colliery site which is noted to have run off by inspections undertaken by the South Yorkshire Mining Advisory Service (SYMAS), as such advice should be sought from SYMAS about the implications this may have on the development."* Barnburgh Railway Cutting Development Management, Pre-Application response, Doncaster Metropolitan Borough Council, ref 17/00356/PREAPP.

Initial discussions with SYMAS have found no evidence to support any reference to run-off being generated from the former Barnburgh Colliery entering the Site.

Communications with Mark Lyons of SYMAS on 16th January 2018 has revealed that according to their records "*there are no leachate issues known for the cutting/ disused railway route in question; I believe that the 'run-off of 2013' relates to the Barnburgh Colliery Tip which is located around 1km to the south (on the southern side of the river Dearne)".*

6. LOCAL AUTHORITY AND ENVIRONMENT AGENCY SEARCH

Doncaster Council has been contacted for a response to an Environmental Search request. A letter (reference: EIR00954, dated 15th February 2018) has been received which revealed the presence of 3 No. landfill sites within 1km of the Site, the nearest being 252m southeast (Hollow Gate Bridge) and the other two being >600m from the Site; however, Tier Environmental considers that these records may be taken from the centre of the landfill as Hollow Gate Bridge has been shown on mapping to extent into the site boundary as described in Table 3.8 of this report.

The Council does not hold any records concerning pollution incidents for the site, nor do they have any records of any fuel storage tanks within 1km if the Site. There are no records concerning asbestos for the site.

Doncaster Council has previously requested that the neighbouring Barnsley Metropolitan Borough Council (MBC) (John Scott – Contaminated Land Officer and the planning department) are notified with regards to the scheme and Tier Environmental's involvement. An email response was received by Tier Environmental from Hannah Andrew, Senior Planner at Planning and Building Control at Barnsley MBC dated 17th January 2018. The email stated:

"Adrian,

I have been passed your email to respond to. I dealt with the original query on relation to this project on Barnsley's side so I will probably be your best first point of contact at BMBC moving forward, albeit I think it is likely Doncaster will deal with the final application.

I have liaised with John Scott regarding his proposal and he has no comments / concerns to raise.

Kind regards"

Finally, an Environmental Search has been undertaken by the Environment Agency who responded in a letter (letter reference: RFI/2018/75814, dated 12th March 2018) who have confirmed the presence of the nearby landfills, consistent with that described in Table 3.8 of this report; however, the Environment Agency have confirmed that the Hollow Gate Bridge site took inert waste materials comprising construction and demolition material between 1989 and 1990.

The Environment Agency confirmed that the Ackworth Rock is a Secondary A Aquifer and that there is no overlying drift materials making it vulnerable to pollution, as such it has a high class for groundwater vulnerability. No further information was held with regards to pollution, asbestos, fuel storage, previous site uses or previous investigations.

The responses from the regulators are provided as Appendix F.

7. PRELIMINARY CONCEPTUAL MODEL

Based on the desk study, a combined preliminary conceptual site model and conceptual exposure model has been developed for the proposed future land use. This summarises the understanding of surface and sub-surface features, the potential contaminant sources, transport pathways and receptors. In assessing the likely contaminants present at the Site, reference has also been made to Defra and Environment Agency supporting documentation. A preliminary qualitative risk assessment has also been made of the likelihood of the linkage operating and its potential significance.

The potential pollutant linkages identified and the qualitative risk assessment for these are presented in Table 7.1. The terms used in the preliminary qualitative risk assessment are defined in Appendix D.

7.1. Justification

The following factors are considered pertinent in defining the conceptual model.

Land Use

- The Site currently comprises a cutting for a former railway line, which has become overgrown.
- The Site historically comprised open fields with a single track/ road until approximately 1904 when construction began on Dearne Valley Railway.
- The Site has been redundant since the c1980s when the railway line was removed.
- Pertinent surrounding land uses include a former colliery which ran along the southern boundary, infrastructure associated with the colliery is no longer annotated after maps dated 2002, with possible infilled ground associated with reservoirs and baths. Unspecified works are annotated north of the Site.
- The anticipated groundwater flow direction is towards the west based on local topography and towards West Moor Dyke.
- The Site is shown to be underlain by Alluvium Secondary (A) Aquifer underlain by the Pennine Upper Coal Measures Formation (Secondary A Aquifer), and the Ackworth Rock (Secondary A Aquifer).
- The Site is not located within a Source Protection Zone. There are no active water abstraction licenses located within 1km of the Site and the nearest surface water feature is located immediately west of the Site which has a current EA biological rating of Grade C. Overall, the sensitivity of the controlled waters environment is regarded as being low/ moderate.
- Part of the Site is reported to have been previously landfilled (indicated by the EA to have been inert construction / demolition waste); however, this would need to be investigated to determine the nature and extent of any landfill material on Site and the nature and extent of any capping layer (if present).
- A low risk with regards to generation from off-Site ground gas generation is present. The Site is to be developed for POS; therefore, the risk to the final land user is deemed to be negligible, given the absence of enclosed spaces (e.g. buildings). There is a risk however, that material brought on to Site may be a source of ground gas which may migrate via pore spaces

within soils into nearby residential properties. Therefore, all material brought onto site must be analysed for organic content to determine ground gas generation potential.

- The Site is not located in a Radon Affected Area.
- The Site is not located within an ecologically sensitive area; however, the presence/absence of invasive species should be confirmed by a suitably qualified specialist. The Site is located within an area of Green Belt.

Potential Sources

- Possible metal, PAH, TPH, sulphate and asbestos contamination of existing on-site Made Ground soils based on historical land uses within and within the vicinity of the Site;
- Hazardous ground gases generated from existing on-site Made Ground and natural soils (Alluvium), potential of migration via pore spaces within granular Made Ground and natural soils into nearby residential dwellings and commercial properties;
- Hazardous ground gases generated from future on-site imported Made Ground;
- Possible metal, PAH, TPH, phenol, sulphate and asbestos contamination of future imported fill material;
- Possible combustion of imported fill material.

Potential Pathways

- Dermal contact, ingestion and inhalation of contaminants on Site.
- Combustion of future imported materials.
- Migration of contaminated dusts during redevelopment works.
- Horizontal migration of mobile contaminants through underground services and manmade conduits.
- Leaching and horizontal migration of mobile contaminants through the granular Made Ground soils, or through damage to any capped landfill material.

Potential Receptors

- Future, current and adjacent users of the Site.
- Site investigation and construction staff from hazardous short term exposure.
- Secondary (A) Aquifers beneath the Site.
- West Moor Dyke located in the vicinity of the Site.

7.2. Uncertainties

The following uncertainties exist in the preliminary conceptual model.

- The nature of ground conditions beneath the Site including the potential emplacement of Made Ground soils and landfill material in the southeastern most part of the Site.
- Any unrecorded geological features.
- Any unreported pollution events during the site's history.

Table 7.1. Preliminary Assessment of Potential Pollutant Linkages.

Pollutant linkage				Qualitative risk assessment
	Source	**Pathway(s)**	**Receptor(s)**	
1	Possible metal, PAH, sulphate and asbestos contamination of existing on-site Made Ground soils based on historical land uses within and within the vicinity of the Site.	Dermal contact, ingestion and inhalation of contaminants on Site. Migration of contaminated dusts during redevelopment works.	Future, current and adjacent users of the Site. Site investigation and construction staff and from hazardous short term exposure.	Medium x Likely = Moderate Risk
2		Migration of mobile contaminants	Buildings, hardstanding and services.	Mild x Likely = Moderate /Low Risk
3			Future, current and adjacent users to Site. Site investigation and construction staff from short term exposure.	Medium x Likely = Moderate Risk
4		Horizontal migration of mobile contaminants through underground services and manmade conduits associated with the former railway. Leaching and horizontal migration of mobile contaminants through granular Made Ground and natural soils, or via breaching any landfill cap.	Secondary (A) Aquifer	Mild x Low likelihood = Low Risk
5			West Moor Brook	Mild x Low likelihood = Low Risk
6	Hazardous ground gases generated from existing on-site Made Ground and natural soils (Alluvium), potential of migration via pore spaces within granular Made Ground and natural soils into nearby residential dwellings and commercial properties.	Migration and accumulation into buildings via soil pore spaces.	Future, current and adjacent users of the Site.	Medium x Low Likelihood= Low Risk
7	Hazardous ground gases generated from future on-site imported Made Ground.	Migration and accumulation into buildings via soil pore spaces.	Nearby buildings, hardstanding and services.	Medium x Low Likelihood= Moderate/Low Risk

Pollutant linkage				Qualitative risk assessment
	Source	**Pathway(s)**	**Receptor(s)**	
8	Possible metal, PAH,TPH, phenol, sulphate and asbestos contamination and combustion potential of imported fill material.	Dermal contact, ingestion and inhalation of contaminants on Site. Migration of contaminated dusts during redevelopment works.	Future, current and adjacent users of the Site. Site investigation and construction staff and from hazardous short term exposure.	Medium x Likely = Moderate Risk
9		Combustion of imported fill material.		Severe x Low likelihood = Moderate Risk
10		Horizontal migration of mobile contaminants through underground services and manmade conduits associated with the former railway. Leaching and horizontal migration of mobile contaminants through the granular Made Ground and natural soils.	Secondary (A) Aquifer	Mild x Likely = Moderate /Low Risk
11			West Moor Brook	Mild x Likely = Moderate /Low Risk

For definition of the terms used in the qualitative risk assessment, please see Appendix D.

8. FURTHER WORKS

With respect to further proposed works, reference has been made to the pre-application requirements for this project, set out by Doncaster Metropolitan Borough Council in a document reference: 17/00356/PREAPP, dated 24th October 2017 (included in Appendix F):

- *[Item 1] The area in question adjoins a former colliery site which is noted to have run off by inspections undertaken by the South Yorkshire Mining Advisory Service (SYMAS), as such advice should be sought from SYMAS about the implications this may have on the development.*

  This has been addressed in Section 5 of this report.

- *[Item 2] Council records show the railway cutting has already been partially in filled and as such is on our landfill register; there is concern that the works proposed could have a detrimental effect on the landfill, for example may release waste or damage any cap which is in place.*

  It is proposed that site investigation works are undertaken in the vicinity of the area where the landfill is shown to encroach onto the Site. The investigations are likely to comprise a combination of mechanical excavation and/or boreholes but the precise nature and extent of these investigations will be subject to assessments of access (health and safety and physical access constraints assessment such as slopes and immovable objects) and vegetation removal works in the first instance. The investigation's objectives will be to determine the presence / absence of any capping layer and soil sampling to determine the chemical nature and presence / absence of asbestos of the landfilled materials. The soil samples will be analysed for soil and soil leachate analysis at a UKAS accredited (and where appropriate – MCerts accredited) laboratory and the results assessed against suitable published generic assessment criteria protective of human health and controlled waters. Due consideration will be given in each instance to the conceptual site model, such as the potential for direct contact between these materials and future land users for instance.

- *[Item 3] With regards to the infilled material, to safeguard future site users Pollution Officers would need to ensure the material in question is not combustible, does not pose a ground gas risk, and is not above the POS generic assessment criteria for soils.*

  Tier Environmental understands that Circa 50,000m^3 to 70,000m^3 of materials are anticipated to be imported to achieve the proposed levels shown on the Section Elevation Drawing 192-SK-003, dated 22nd December 2016.

  Tier Environmental considers that it is critical that there are a number of robust lines of evidence to demonstrate that the materials to be emplaced are:

  1. 'inert'; and,
  2. Do not constitute a 'waste;

  Laboratory chemical testing of the 'inert' granular material brought to Site will satisfy conditions to safeguard future Site users by ensuring the material is not combustible, does not pose a ground gas risk, and is not above the Public Open Space (POS) generic assessment criteria for soils, this will be completed in accordance with LQM/ CIEH 2015 GACs for POS park land use.

Tier Environmental proposes to test the imported fill material at a rate of 1 No. sample per 1000m^3, with the material sampled using Tiers standard soil suite (metals, PAHs, pH etc), Total Organic Carbon (TOC) (in accordance with BS8485:2015 (BSEN13137 method)) / calorific value and asbestos. It is proposed that composite samples are formed from samples obtained every 1,000m^3 and these be submitted for speciated TPH analysis on one in every 3 No. samples (i.e. speciated TPH analysis will be undertaken on a 1 No. per 3,000m^3 basis but that these samples will be formed from composites on a 1 per 1,000m^3 basis). Statistical assessment, in accordance with CIEH Stats guidance may reasonably be undertaken on the data assuming distinct populations of imported materials may be identified.

To ensure the imported fill material poses no risk of combustion, the material will be analysed for TOC and Calorific Value. Dry British coal has a calorific value of between 20 and 30 MJ/kg. Values in excess of 10 MJ/kg are almost certainly combustible with calorific values in excess of 7 MJ/kg may present risks of smouldering.

TOC data will be assessed in accordance with BS8485:2015 to determine potential risk to off-site receptors with respect to hazardous ground gas generation potential.

Tier Environmental proposes that a review of information pertaining to the original source of the materials, the treatment processes to produce the end 'product' and review any geotechnical laboratory test certificates to demonstrate that the required classification in accordance with Series 600 has been achieved, and that all available information will be reviewed in order to demonstrate that the WRAP Quality for 'Aggregates from inert waste' has and will be followed throughout.

Geotechnical testing in the form of Plate Bearing Tests (PBTs) as the granular material is placed in strips, this will allow confidence that the material is being sufficiently compacted as is it being laid and will thus reduce the risk of differential settlement on Site.

- *[Item 4] Consideration should also be given to any controlled waters in the vicinity, with any leachable material being risk assessed to ensure it doesn't pose a risk to surface/ ground waters in the vicinity.*

Tier Environmental proposes to test the imported fill material at a rate of 1 No. sample per 1000m^3, with the material sampled using Tiers standard leachate suite (metals, PAHs, and pH). Appropriate Water Quality Standards will be used to undertake a quantitative risk assessment to determine risks to controlled waters. Statistical assessment, in accordance with CIEH Stats guidance may reasonably be undertaken on the data assuming distinct populations of imported materials may be identified.

- *[Item 5] It is advised the above areas of concern should be investigated/ risk assessed further, it may be specific conditions are required to safeguard human health and the wider environment.*

Agreed, outline proposals are as described above.

9. REGULATORY APPROVALS

The conclusions and recommendations presented above are considered reasonable based on the findings of the site investigation. However, these cannot be guaranteed to gain regulatory approval and, therefore, the report should be passed to the appropriate regulatory authorities and/or other organisations for their comment and approval prior to undertaking any works on site.

It is recommended that conditions placed on any planning permission are discharged prior to commencement of site works.

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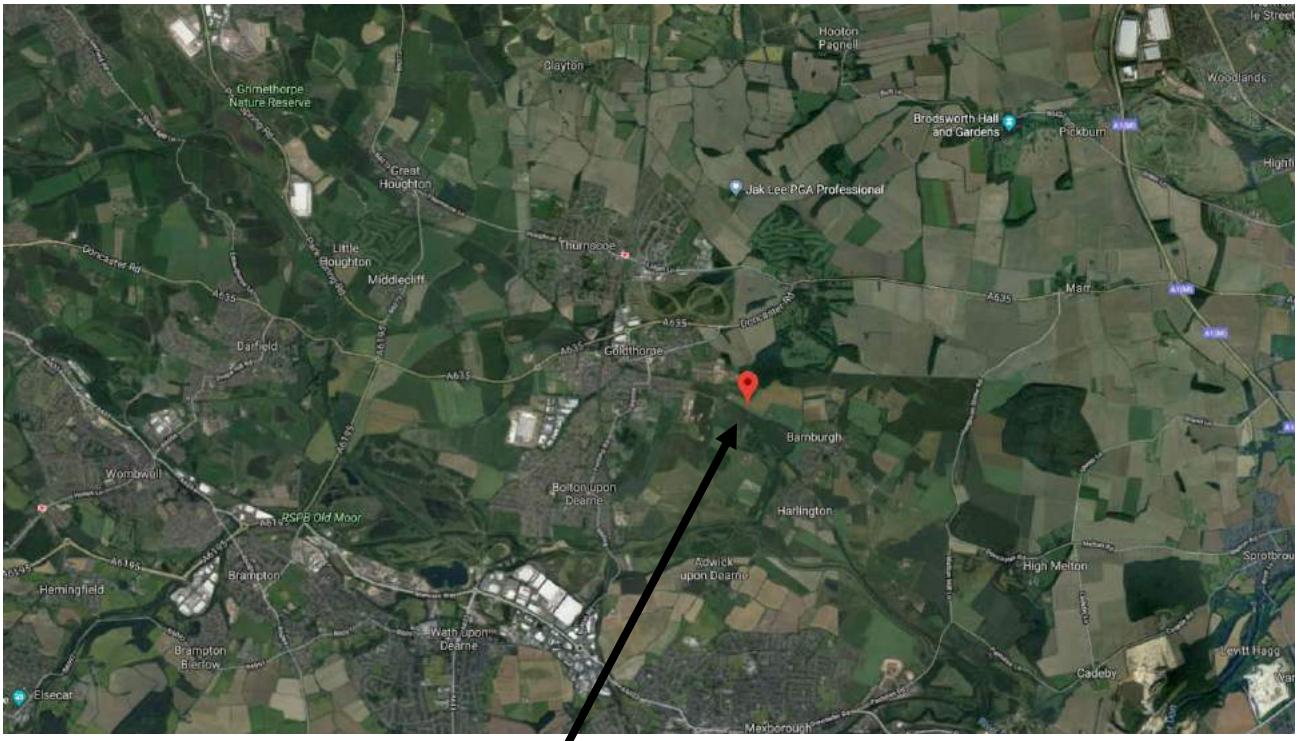
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APPENDIX A – FIGURES AND DRAWINGS

Contract Number	**TE1069**
Contract	Barnburgh Lane, Goldthorpe
Client	MHH Contracting Ltd

Site Location Plan



Scale	**NTS**		
Drawn by	CJ	**Approved**	AR
Drawing Number	**TE1069/PRA/01**		

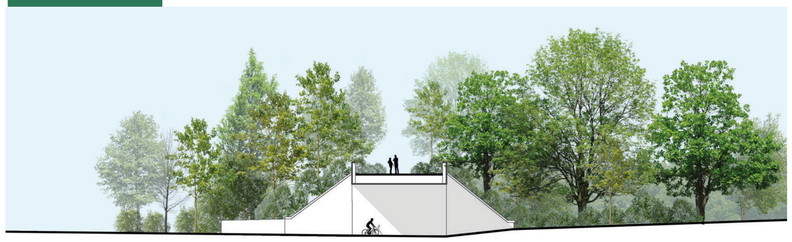
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Contract	Barnburgh Lane, Goldthorpe
Client	MHH Contracting Ltd

Site Location Plan

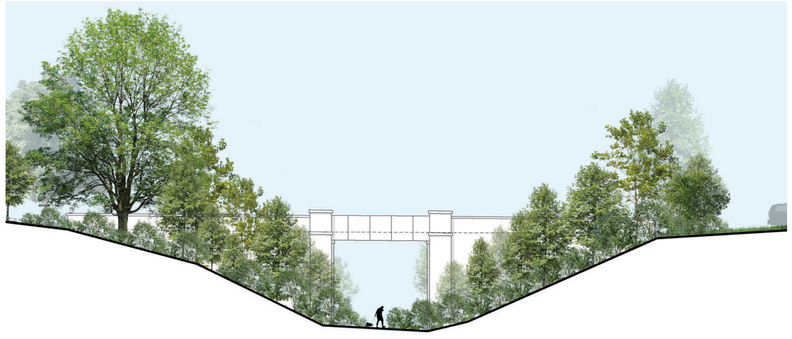


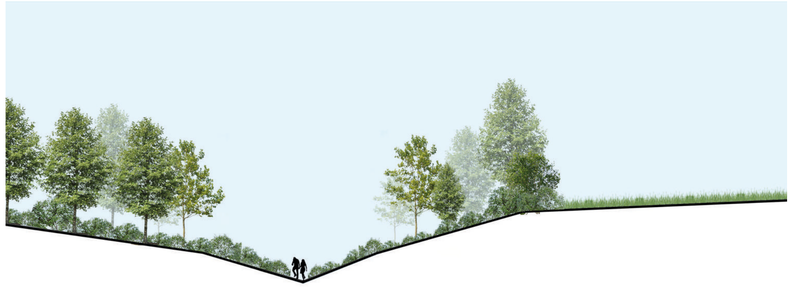
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Drawn by	CJ	**Approved**	AR
Drawing Number	**TE1069/PRA/2**		

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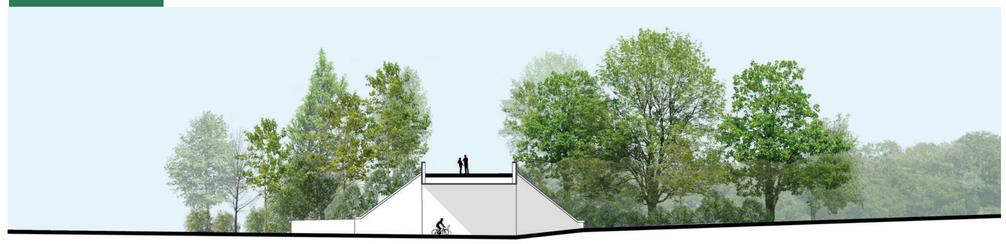




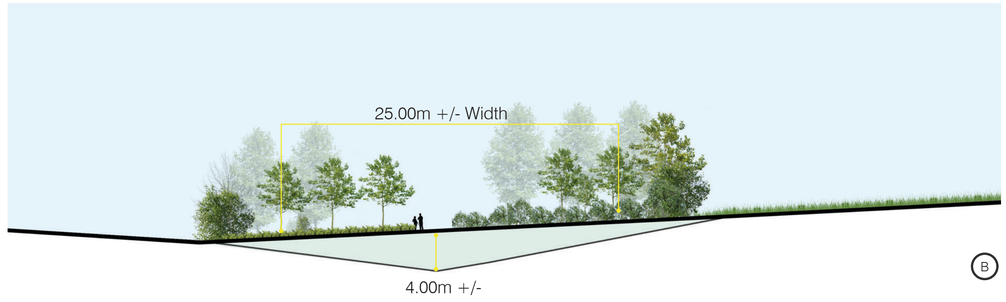




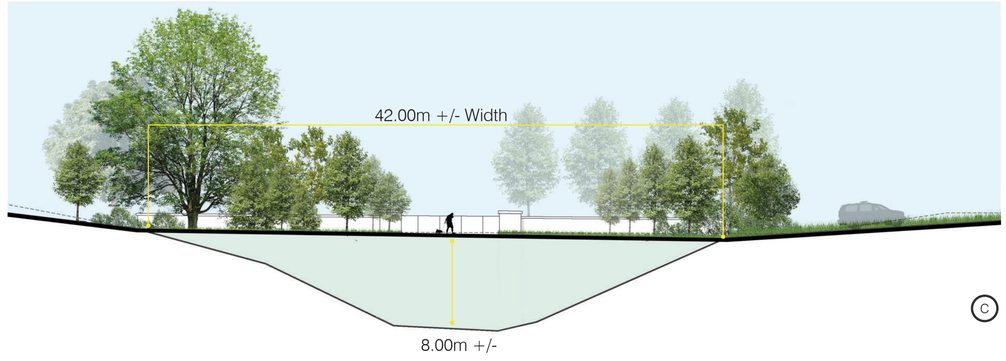
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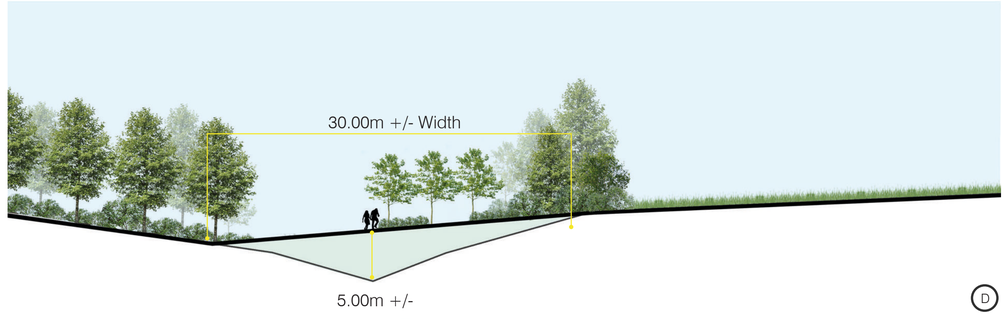
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(B)



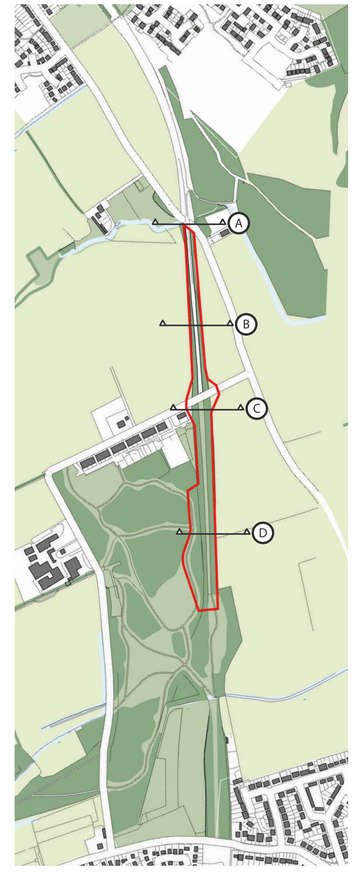
(C)



(D)

NOTES

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KEY PLAN
Not to Scale

rev	date	details
A	12 May 17	Company Contact details revised & minor layout revisions

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project
Barnburgh Railway Cutting

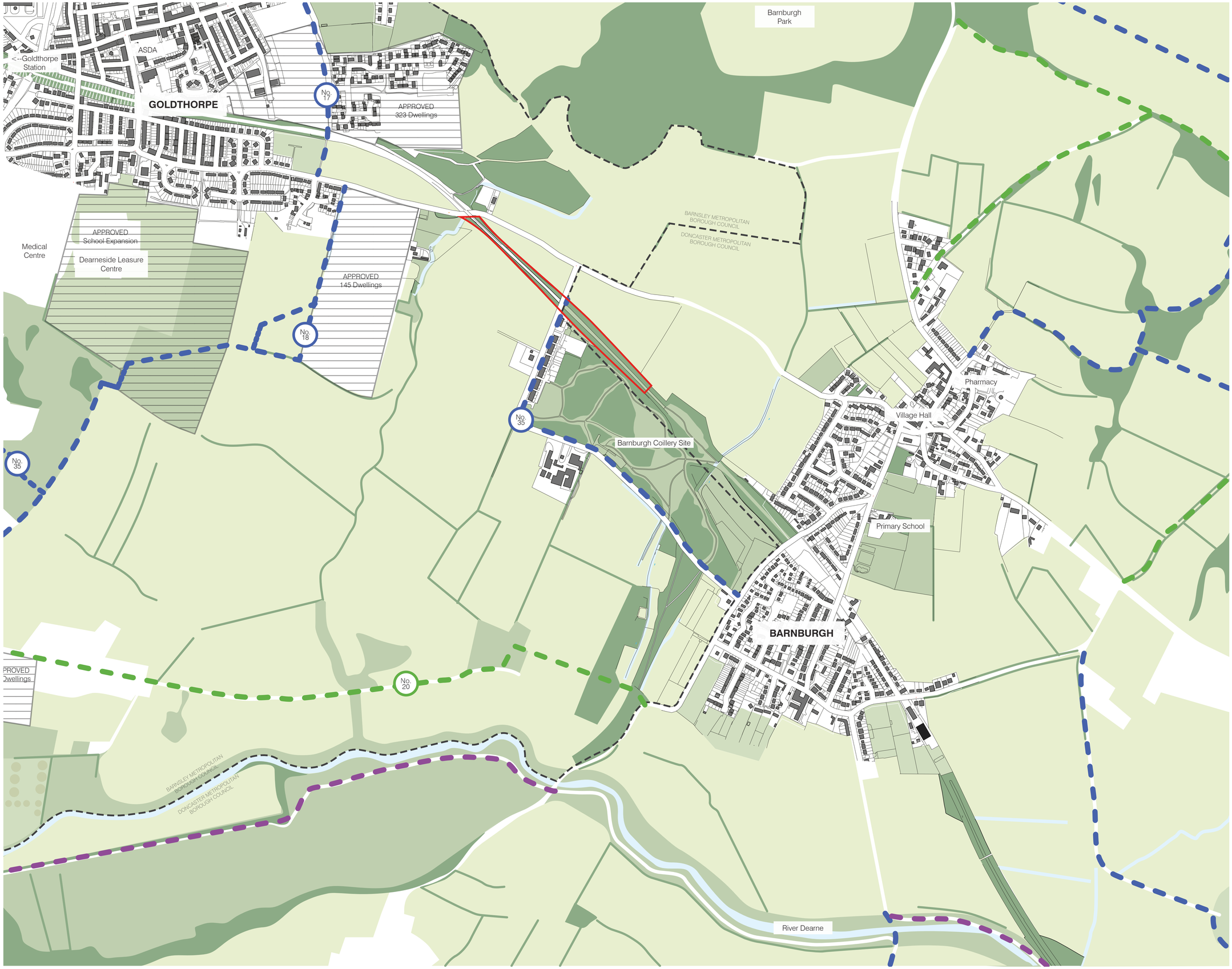
drawing title
Sectional Elevations

drawing status
Concept

drawn by	checked by	date
JAT	*TBR*	*22 Dec 16*

scale	paper size
1:5000	*A1*

job/dwg no.	rev.
192-SK-003	*A*



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LEGEND

- Property Line
- Footpath
- Bridleway
- Trans Pennine Way
- Barnsley/Doncaster City Limits
- Aggricultural Land
- Woodland
- Private Land
- Settlement Areas

rev	date	details
A	12 May 17	Council boundaries corrected and drawing title revised

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client: *MHH Contracting Ltd.*

project: *Barnburgh Railway Cutting*

drawing title: *Landscape Survey*

drawing status: *Concept*

drawn by	checked by	date
JAT	TBR	22 Dec 16

scale	paper size
1:5000	A1

job/dwg no.	rev.
192-SK-002	A

APPENDIX B – GLOSSARY OF TERMS

ACEC	Aggressive Chemical Environment for Concrete (classification)
aOD	Above Ordnance Datum
bgl	Below ground level
BGS	British Geological Survey
BRE	Building Research Establishment
CBR	California Bearing Ratio (test)
COMAH	Control of Major Accident Hazards (regulations)
Designated location	Site (and the ecosystem on that site) protected under national of international legislation. A potential ecological receptor to be considered as part of the assessment of land contamination. Example designated locations include SSSIs (q.v.), SACs (q.v.), national nature reserves, Ramsar sites and bird special protection areas.
DQA	Data Quality Assessment
DQO	Data Quality Objective
DQRA	Detailed Quantitative Risk Assessment
DWS	Drinking Water Standard
EQS	Environmental Quality Standard
GAC	Generic Assessment Criterion
GQA	General Quality Assessment (Environment Agency)
GSV	Gas Screening Value
HCV	Health Criteria Value
IPPC	Integrated Pollution Prevention and Control (regulations)
K_{ow}	Octanol-water partition coefficient
LEL	Lower Explosive Limit
LL	Liquid Limit
LoD	Limit of Detection (analytical)
LoQ	Limit of Quantification (analytical)
Mean Value Test	Statistical test (described in CLR7) to estimate the mean value of a normally distributed population of data at a given level of confidence. Normally for contaminated land assessment, the 95th percentile (referred to as the 95%UCL or US95) is applied as a reasonable but conservative estimate of the mean concentration for comparison with the relevant assessment criteria.
Maximum Value Test	Statistical test (described in CLR7) to identify whether an elevated concentration within a normally distributed data set forms part of the underlying population from which it has been sampled or whether it is an outlier (such as a localised area of contamination) that merits further consideration.
MC	Moisture Content
NGR	National Grid Reference
NIHHS	Notification of Installations Handling Hazardous Substances (regulations)
OS	Ordnance Survey
PI	Plasticity Index
PID	Photoionisation Detector
PL	Plastic Limit
ppm	Parts per million
ppmv	Parts per million by volume
QA	Quality Assurance
QC	Quality Control
SAC	Special Area of Conservation
SOM	Soil Organic Matter
SPT	Standard Penetration Test
SPZ	Source Protection Zone (see Appendix C)
SSAC	Site-Specific Assessment Criterion
SSSI	Site of Special Scientific Interest
SVOC	Semi-Volatile Organic Compound

TEF	Toxicity Equivalent Factor
TPH	Total Petroleum Hydrocarbons
TWA	Time Weighted Average
US95	95^{th} percentile estimate of the true mean value of a data population (also known as 95%UCL).
VOC	Volatile Organic Compound

APPENDIX C – DEFINITION OF SOURCE PROTECTION ZONES AND GROUNDWATER VULNERABILITY ASSESSMENTS

Source Protection Zones

Source Protection Zones (SPZs) are defined by the Environment Agency (for England and Wales), SEPA (Scotland) and the Environment and Heritage Service (Northern Ireland) for groundwater sources such as wells, boreholes and springs that are used for public drinking water supply. The zones show the risk of contamination from activities that might cause groundwater pollution in the area. The size and shape of a zone depends upon subsurface conditions, how the groundwater is removed, and other environmental factors.

SPZs are classified into four categories:

- **Zone 1 (Inner protection zone).** Any pollution that can travel to the abstraction point within 50 days from any point within the zone is classified as being inside Zone 1. This applies at and below the groundwater table. This zone also has a minimum 50 m protection radius around the abstraction point. These criteria are designed to protect against the transmission of toxic chemicals and water-borne disease.

- **Zone 2 (Outer protection zone).** The outer zone covers pollution that takes up to 400 days to travel to the abstraction point, or 25% of the total catchment area, whichever area is the largest. This travel time is the minimum period over which the Environment Agency considers that pollutants need to be diluted, reduced in strength or delayed by the time they reach the abstraction point.

- **Zone 3 (Total catchment).** This is the total area needed to support removal of water from the abstraction point, and to support any discharge from this.

- **Zone of special interest.** This may occasionally be defined as a special case. This is usually where local conditions mean that industrial sites and other potential sources of contamination could affect the groundwater source, even though they are outside the normal catchment area.

Groundwater Vulnerability Assessments

From 1 April 2010 The Environment Agency Groundwater Protection Policy began to use aquifer designations which are consistent with the Water Framework Directive. These designations reflect the importance of aquifers in terms of groundwater as a resource (drinking water supply) but also their role in supporting surface water flows and wetland ecosystems.

The aquifer designation data is based on geological mapping provided by the British Geological Survey. It is updated regularly to reflect their ongoing programme of improvements to these maps. The maps are split into two different type of aquifer designation:

- Superficial (Drift) - permeable unconsolidated (loose) deposits. For example, sands and gravels, Glacial Till.

- Bedrock -solid permeable formations e.g. sandstone, chalk and limestone.

The maps display the following aquifer designations:

Table 1. Aquifer Classification ("Geological Classification").

Classification	Definition
Principal Aquifers (Highly Permeable)	These are layers of rock or drift deposits that have high intergranular and/or fracture permeability - meaning they usually provide a high level of water storage. They may support water supply and/or river base flow on a strategic scale. In most cases, principal aquifers are aquifers previously designated as major aquifer.
Secondary A Aquifers	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers.
Secondary B Aquifers	Predominantly lower permeability layers which may store and yield limited amounts of groundwater due to localised features such as fissures, thin permeable horizons and weathering. These are generally the water-bearing parts of the former non-aquifers.
Secondary Undifferentiated Aquifers	This has been assigned in cases where it has not been possible to attribute either category A or B to a rock type. In most cases, this means that the layer in question has previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type.
Unproductive Strata	These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow.

APPENDIX D – DEFINITIONS OF TERMS USED IN QUALITATIVE AND QUANTITATIVE RISK ASSESSMENTS

For the qualitative and quantitative assessment of risks posed by potential pollutant linkages to all receptors, a common terminology has been employed throughout this report.

Evaluated significance of pollutant linkage	Definition
Very High	There is a high probability that severe harm or pollution by the identified contaminant could arise at the identified receptor unless appropriate remedial action is taken.
High	It is probable that harm to, or pollution of, the identified receptor by the identified contaminant could occur unless appropriate remedial action is taken.
Moderate	It is possible that harm to, or pollution of, the identified receptor by the identified contaminant could occur unless appropriate remedial action is taken. However, it is relatively unlikely that the consequences would be severe.
Low	It is possible that harm to, or pollution of, the identified receptor by the identified contaminant could occur. However, if any harm is realised it is likely that any effects will be mild.
Negligible	The presence of an identified contaminant will not cause significant harm or pollution to the identified receptor *via* the specified pathway(s).

APPENDIX E – GROUNDSURE REPORT

TIER ENVIRONMENTAL

SUIT 513, CHADWICK HOUSE, WARRINGTON ROAD,
WARRINGTON, WA3 6AE

Groundsure Reference:	GS-4610386
Your Reference:	QE1089
Report Date	19 Dec 2017
Report Delivery Method:	Email - pdf

Enviro Insight

Address: BARNBURGH ROAD NORTH ALLOTMENTS, BARNBURGH LANE, GOLDTHORPE, BARNSLEY, S63 9NT

Dear Sir/ Madam,

Thank you for placing your order with Groundsure. Please find enclosed the **Groundsure Enviro Insight** as requested.

If you need any further assistance, please do not hesitate to contact our helpline on 08444 159000 quoting the above Groundsure reference number.

Yours faithfully,

Managing Director
Groundsure Limited

Enc.
Groundsure Enviroinsight

Enviro Insight

Address:	**BARNBURGH ROAD NORTH ALLOTMENTS, BARNBURGH LANE, GOLDTHORPE, BARNSLEY, S63 9NT**
Date:	**19 Dec 2017**
Reference:	**GS-4610386**
Client:	**TIER ENVIRONMENTAL**

NW N NE

W E



SW S SE

Aerial Photograph Capture date: 07-Jun-2013
Grid Reference: 447409,403624
Site Size: 1.97ha

Report Reference: GS-4610386
Client Reference: QE1089

Contents Page

Contents Page 3
Overview of Findings 6
Using this report 10
1. Historical Land Use 11
1. Historical Industrial Sites 12
1.1 Potentially Contaminative Uses identified from 1:10,000 scale Mapping 12
1.2 Additional Information – Historical Tank Database 14
1.3 Additional Information – Historical Energy Features Database 15
1.4 Additional Information – Historical Petrol and Fuel Site Database 15
1.5 Additional Information – Historical Garage and Motor Vehicle Repair Database 15
1.6 Potentially Infilled Land 16
2. Environmental Permits, Incidents and Registers Map 19
2. Environmental Permits, Incidents and Registers 20
2.1 Industrial Sites Holding Licences and/or Authorisations 20
2.1.1 Records of historic IPC Authorisations within 500m of the study site: 20
2.1.2 Records of Part A(1) and IPPC Authorised Activities within 500m of the study site: 20
2.1.3 Records of Red List Discharge Consents (potentially harmful discharges to controlled waters) within 500m of the study site: 20
2.1.4 Records of List 1 Dangerous Substances Inventory Sites within 500m of the study site: 20
2.1.5 Records of List 2 Dangerous Substance Inventory Sites within 500m of the study site: 21
2.1.6 Records of Part A(2) and Part B Activities and Enforcements within 500m of the study site: 21
2.1.7 Records of Category 3 or 4 Radioactive Substances Authorisations: 21
2.1.8 Records of Licensed Discharge Consents within 500m of the study site: 21
2.1.9 Records of Water Industry Referrals (potentially harmful discharges to the public sewer) within 500m of the study site: 23
2.1.10 Records of Planning Hazardous Substance Consents and Enforcements within 500m of the study site: 23
2.2 Dangerous or Hazardous Sites 23
2.3 Environment Agency/Natural Resources Wales Recorded Pollution Incidents 24
2.3.1 Records of National Incidents Recording System, List 2 within 500m of the study site: 24
2.3.2 Records of National Incidents Recording System, List 1 within 500m of the study site: 24
2.4 Sites Determined as Contaminated Land under Part 2A EPA 1990 24
3. Landfill and Other Waste Sites Map 25
3. Landfill and Other Waste Sites 26
3.1 Landfill Sites 26
3.1.1 Records from Environment Agency/Natural Resources Wales landfill data within 1000m of the study site: 26
3.1.2 Records of Environment Agency/Natural Resources Wales historic landfill sites within 1500m of the study site: 26
3.1.3 Records of BGS/DoE non-operational landfill sites within 1500m of the study site: 28
3.1.4 Records of Landfills from Local Authority and Historical Mapping Records within 1500m of the study site: 28
3.2 Other Waste Sites 28
3.2.1 Records of waste treatment, transfer or disposal sites within 500m of the study site: 28
3.2.2 Records of Environment Agency/Natural Resources Wales licensed waste sites within 1500m of the study site: 29
4. Current Land Use Map 30
4. Current Land Uses 31
4.1 Current Industrial Data 31
4.2 Petrol and Fuel Sites 31
4.3 National Grid High Voltage Underground Electricity Transmission Cables 31
4.4 National Grid High Pressure Gas Transmission Pipelines 32

5. Geology 33
5.1 Artificial Ground and Made Ground 33
5.2 Superficial Ground and Drift Geology 33
5.3 Bedrock and Solid Geology 33
6 Hydrogeology and Hydrology 34
6a. Aquifer Within Superficial Geology 34
6b. Aquifer Within Bedrock Geology and Abstraction Licenses 35
6c. Hydrogeology – Source Protection Zones and Potable Water Abstraction Licenses 36
6d. Hydrogeology – Source Protection Zones within confined aquifer 37
6e. Hydrology – Detailed River Network and River Quality 38
6.Hydrogeology and Hydrology 39
6.1 Aquifer within Superficial Deposits 39
6.2 Aquifer within Bedrock Deposits 39
6.3 Groundwater Abstraction Licences 40
6.4 Surface Water Abstraction Licences 40
6.5 Potable Water Abstraction Licences 41
6.6 Source Protection Zones 41
6.7 Source Protection Zones within Confined Aquifer 42
6.8 Groundwater Vulnerability and Soil Leaching Potential 42
6.9 River Quality 42
6.9.1 Biological Quality: 43
6.9.2 Chemical Quality: 43
6.10 Detailed River Network 44
6.11 Surface Water Features 45
7a. Environment Agency/Natural Resources Wales Flood Map for Planning (from rivers and the sea) 46
7b. Environment Agency/Natural Resources Wales Risk of Flooding from Rivers and the Sea (RoFRaS) Map 47
7 Flooding 48
7.1 River and Coastal Zone 2 Flooding 48
7.2 River and Coastal Zone 3 Flooding 48
7.3 Risk of Flooding from Rivers and the Sea (RoFRaS) Flood Rating 48
7.4 Flood Defences 48
7.5 Areas benefiting from Flood Defences 48
7.6 Areas benefiting from Flood Storage 49
7.7 Groundwater Flooding Susceptibility Areas 49
7.7.1 Are there any British Geological Survey groundwater flooding susceptibility areas within 50m of the boundary of the study site? Yes 49
7.7.2 What is the highest susceptibility to groundwater flooding in the search area based on the underlying geological conditions? 49
7.8 Groundwater Flooding Confidence Areas 49
8. Designated Environmentally Sensitive Sites Map 50
8. Designated Environmentally Sensitive Sites 51
8.1 Records of Sites of Special Scientific Interest (SSSI) within 2000m of the study site: 51
8.2 Records of National Nature Reserves (NNR) within 2000m of the study site: 51
8.3 Records of Special Areas of Conservation (SAC) within 2000m of the study site: 51
8.4 Records of Special Protection Areas (SPA) within 2000m of the study site: 51
8.5 Records of Ramsar sites within 2000m of the study site: 51
8.6 Records of Ancient Woodland within 2000m of the study site: 52
8.7 Records of Local Nature Reserves (LNR) within 2000m of the study site: 52
8.8 Records of World Heritage Sites within 2000m of the study site: 52
8.9 Records of Environmentally Sensitive Areas within 2000m of the study site: 52

8.10 Records of Areas of Outstanding Natural Beauty (AONB) within 2000m of the study site: 52
8.11 Records of National Parks (NP) within 2000m of the study site: 52
8.12 Records of Nitrate Sensitive Areas within 2000m of the study site: 53
8.13 Records of Nitrate Vulnerable Zones within 2000m of the study site: 53
8.14 Records of Green Belt land within 2000m of the study site: 53
9. Natural Hazards Findings 54
9.1 Detailed BGS GeoSure Data 54
9.1.1 Shrink Swell 54
9.1.2 Landslides 54
9.1.3 Soluble Rocks 54
9.1.4 Compressible Ground 55
9.1.5 Collapsible Rocks 55
9.1.6 Running Sand 55
9.2 Radon 56
9.2.1 Radon Affected Areas 56
9.2.2 Radon Protection 56
10. Mining 57
10.1 Coal Mining 57
10.2 Non-Coal Mining 57
10.3 Brine Affected Areas 57
Contact Details 58
Standard Terms and Conditions 60

Overview of Findings

For further details on each dataset, please refer to each individual section in the main report as listed. Where the database has been searched a numerical result will be recorded. Where the database has not been searched '-' will be recorded.

Section 1: Historical Industrial Sites	On-site	0-50	51-250	251-500
1.1 Potentially Contaminative Uses identified from 1:10,000 scale mapping	12	27	30	45
1.2 Additional Information – Historical Tank Database	0	0	1	12
1.3 Additional Information – Historical Energy Features Database	0	2	0	0
1.4 Additional Information – Historical Petrol and Fuel Site Database	0	0	0	0
1.5 Additional Information – Historical Garage and Motor Vehicle Repair Database	0	0	0	0
1.6 Potentially Infilled Land	12	13	25	38

Section 2: Environmental Permits, Incidents and Registers	On-site	0-50m	51-250	251-500
2.1 Industrial Sites Holding Environmental Permits and/or Authorisations				
2.1.1 Records of historic IPC Authorisations	0	0	0	0
2.1.2 Records of Part A(1) and IPPC Authorised Activities	0	0	0	0
2.1.3 Records of Red List Discharge Consents	0	0	0	0
2.1.4 Records of List 1 Dangerous Substances Inventory sites	0	0	0	0
2.1.5 Records of List 2 Dangerous Substances Inventory sites	0	0	0	1
2.1.6 Records of Part A(2) and Part B Activities and Enforcements	0	0	0	1
2.1.7 Records of Category 3 or 4 Radioactive Substances Authorisations	0	0	0	0
2.1.8 Records of Licensed Discharge Consents	0	0	3	10
2.1.9 Records of Water Industry Referrals	0	0	0	0
2.1.10 Records of Planning Hazardous Substance Consents and Enforcements within 500m of the study site	0	0	0	0
2.2 Records of COMAH and NIHHS sites	0	0	0	0
2.3 Environment Agency/Natural Resources Wales Recorded Pollution Incidents				
2.3.1 National Incidents Recording System, List 2	0	0	0	0
2.3.2 National Incidents Recording System, List 1	0	0	0	0
2.4 Sites Determined as Contaminated Land under Part 2A EPA 1990	0	0	0	0

Section 3: Landfill and Other Waste Sites	On-site	0-50m	51-250	251-500	501-1000	1000-1500
3.1 Landfill Sites						
3.1.1 Environment Agency/Natural Resources Wales Registered Landfill Sites	0	0	0	0	0	Not searched
3.1.2 Environment Agency/Natural Resources Wales Historic Landfill Sites	1	0	0	1	5	3
3.1.3 BGS/DoE Landfill Site Survey	0	0	0	0	1	0
3.1.4 Records of Landfills in Local Authority and Historical Mapping Records	0	0	0	0	2	0
3.2 Landfill and Other Waste Sites Findings						
3.2.1 Operational and Non-Operational Waste Treatment, Transfer and Disposal Sites	0	0	0	0	Not searched	Not searched
3.2.2 Environment Agency/Natural Resources Wales Licensed Waste Sites	0	0	0	0	3	0

Section 4: Current Land Use	On-site	0-50m	51-250	251-500
4.1 Current Industrial Sites Data	0	1	3	Not searched
4.2 Records of Petrol and Fuel Sites	0	0	0	0
4.3 National Grid Underground Electricity Cables	0	0	0	0
4.4 National Grid Gas Transmission Pipelines	0	0	0	0

Section 5: Geology	
5.1 Are there any records of Artificial Ground and Made Ground present beneath the study site?	Yes
5.2 Are there any records of Superficial Ground and Drift Geology present beneath the study site?	Yes
5.3 For records of Bedrock and Solid Geology beneath the study site see the detailed findings section.	

Section 6: Hydrogeology and Hydrology	0-500m
6.1 Are there any records of Strata Classification in the Superficial Geology within 500m of the study site?	Yes
6.2 Are there any records of Strata Classification in the Bedrock Geology within 500m of the study site?	Yes

	On-site	0-50m	51-250	251-500	501-1000	1000-2000
6.3 Groundwater Abstraction Licences (within 2000m of the study site)	0	0	0	0	0	4
6.4 Surface Water Abstraction Licences (within 2000m of the study site)	0	0	0	0	0	4
6.5 Potable Water Abstraction Licences (within 2000m of the study site)	0	0	0	0	0	0
6.6 Source Protection Zones (within 500m of the study site)	0	0	0	0	Not searched	Not searched
6.7 Source Protection Zones within Confined Aquifer	0	0	0	0	Not searched	Not searched
6.8 Groundwater Vulnerability and Soil Leaching Potential (within 500m of the study site)	2	0	0	2	Not searched	Not searched

Section 6: Hydrogeology and Hydrology

	0-500m					
	On-site	0-50m	51-250	251-500	501-1000	1000-1500
6.9 Is there any Environment Agency/Natural Resources Wales information on river quality within 1500m of the study site?	No	No	Yes	No	Yes	Yes
6.10 Detailed River Network entries within 500m of the site	1	0	3	18	Not searched	Not searched
6.11 Surface water features within 250m of the study site	Yes	No	Yes	Not searched	Not searched	Not searched

Section 7: Flooding

7.1 Are there any Enviroment Agency Zone 2 floodplains within 250m of the study site?	No
7.2 Are there any Environment Agency/Natural Resources Wales Zone 3 floodplains within 250m of the study site	No
7.3 What is the Risk of flooding from Rivers and the Sea (RoFRaS) rating for the study site?	Very Low
7.4 Are there any Flood Defences within 250m of the study site?	No
7.5 Are there any areas benefiting from Flood Defences within 250m of the study site?	No
7.6 Are there any areas used for Flood Storage within 250m of the study site?	No
7.7 What is the maximum BGS Groundwater Flooding susceptibility within 50m of the study site?	Potential below Surface
7.8 What is the BGS confidence rating for the Groundwater Flooding susceptibility areas?	Moderate

Section 8: Designated Environmentally Sensitive Sites

	On-site	0-50m	51-250	251-500	501-1000	1000-2000
8.1 Records of Sites of Special Scientific Interest (SSSI)	0	0	0	0	0	0
8.2 Records of National Nature Reserves (NNR)	0	0	0	0	0	0
8.3 Records of Special Areas of Conservation (SAC)	0	0	0	0	0	0
8.4 Records of Special Protection Areas (SPA)	0	0	0	0	0	0
8.5 Records of Ramsar sites	0	0	0	0	0	0
8.6 Records of Ancient Woodlands	0	0	0	1	0	2
8.7 Records of Local Nature Reserves (LNR)	0	0	0	0	0	0
8.8 Records of World Heritage Sites	0	0	0	0	0	0
8.9 Records of Environmentally Sensitive Areas	0	0	0	0	0	0

Section 8: Designated Environmentally Sensitive Sites

	On-site	0-50m	51-250	251-500	501-1000	1000-2000
8.10 Records of Areas of Outstanding Natural Beauty (AONB)	0	0	0	0	0	0
8.11 Records of National Parks	0	0	0	0	0	0
8.12 Records of Nitrate Sensitive Areas	0	0	0	0	0	0
8.13 Records of Nitrate Vulnerable Zones	1	0	0	0	0	3
8.14 Records of Green Belt land	2	0	0	0	1	0

Section 9: Natural Hazards

9.1 What is the maximum risk of natural ground subsidence?	Moderate
9.1.1 What is the maximum Shrink-Swell hazard rating identified on the study site?	Low
9.1.2 What is the maximum Landslides hazard rating identified on the study site?	Very Low
9.1.3 What is the maximum Soluble Rocks hazard rating identified on the study site?	Negligible
9.1.4 What is the maximum Compressible Ground hazard rating identified on the study site?	Moderate
9.1.5 What is the maximum Collapsible Rocks hazard rating identified on the study site?	Very Low
9.1.6 What is the maximum Running Sand hazard rating identified on the study site?	Low
9.2 Radon	
9.2.1 Is the property in a Radon Affected Area as defined by the Health Protection Agency (HPA) and if so what percentage of homes are above the Action Level?	The property is not in a Radon Affected Area, as less than 1% of properties are above the Action Level.
9.2.2 Is the property in an area where Radon Protection are required for new properties or extensions to existing ones as described in publication BR211 by the Building Research Establishment?	No radon protective measures are necessary.

Section 10: Mining

10.1 Are there any coal mining areas within 75m of the study site?	Yes
10.2 Are there any Non-Coal Mining areas within 50m of the study site boundary?	No
10.3 Are there any brine affected areas within 75m of the study site?	No

Using this report

The following report is designed by Environmental Consultants for Environmental Professionals bringing together the most up-to-date market leading environmental data. This report is provided under and subject to the Terms & Conditions agreed between Groundsure and the Client. The document contains the following sections:

1. Historical Industrial Sites

Provides information on past land uses that may pose a risk to the study site in terms of potential contamination from activities or processes. Potentially Infilled Land features are also included. This search is conducted using radii of up to 500m.

2. Environmental Permits, Incidents and Registers

Provides information on Regulated Industrial Activities and Pollution Incidents as recorded by Regulatory Authorities, and sites determined as Contaminated Land. This search is conducted using radii up to 500m.

3. Landfills and Other Waste Sites

Provides information on landfills and other waste sites that may pose a risk to the study site. This search is conducted using radii up to 1500m.

4. Current Land Uses

Provides information on current land uses that may pose a risk to the study site in terms of potential contamination from activities or processes. These searches are conducted using radii of up to 500m. This includes information on potentially contaminative industrial sites, petrol stations and fuel sites as well as high pressure gas pipelines and underground electricity transmission lines.

5. Geology

Provides information on artificial and superficial deposits and bedrock beneath the study site.

6. Hydrogeology and Hydrology

Provides information on productive strata within the bedrock and superficial geological layers, abstraction licenses, Source Protection Zones (SPZs) and river quality. These searches are conducted using radii of up to 2000m.

7. Flooding

Provides information on river and coastal flooding, flood defences, flood storage areas and groundwater flood areas. This search is conducted using radii of up to 250m.

8. Designated Environmentally Sensitive Sites

Provides information on the Sites of Special Scientific Interest (SSSI), National Nature Reserves (NNR), Special Areas of Conservation (SAC), Special Protection Areas (SPA), Ramsar sites, Local Nature Reserves (LNR), Areas of Outstanding Natural Beauty (AONB), National Parks (NP), Environmentally Sensitive Areas, Nitrate Sensitive Areas, Nitrate Vulnerable Zones and World Heritage Sites and Scheduled Ancient Woodland. These searches are conducted using radii of up to 2000m.

9. Natural Hazards

Provides information on a range of natural hazards that may pose a risk to the study site. These factors include natural ground subsidence and radon..

10. Mining

Provides information on areas of coal and non-coal mining and brine affected areas.

11. Contacts

This section of the report provides contact points for statutory bodies and data providers that may be able to provide further information on issues raised within this report. Alternatively, Groundsure provide a free Technical Helpline (08444 159000) for further information and guidance.

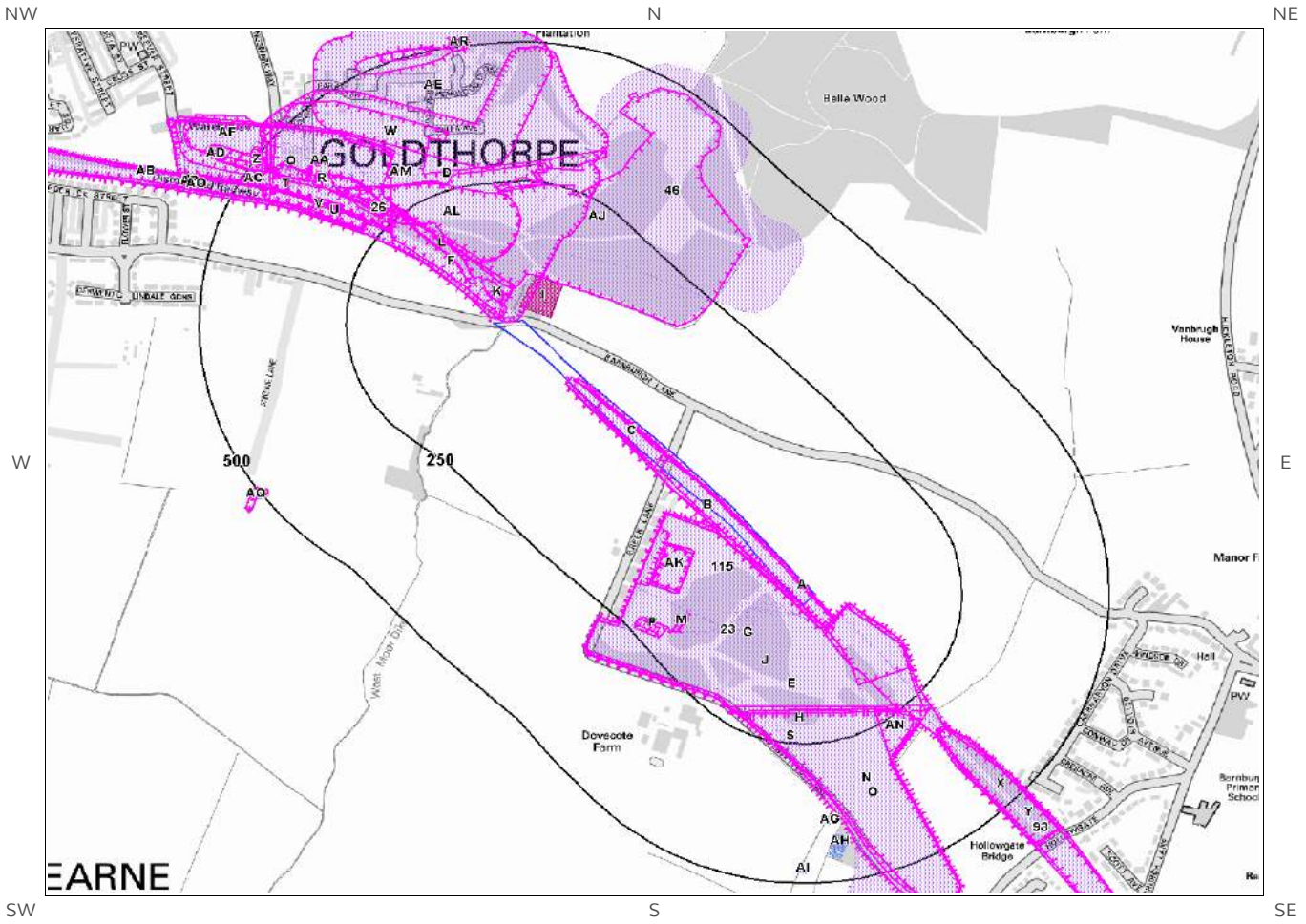
Note: Maps

Only certain features are placed on the maps within the report. All features represented on maps found within this search are given an identification number. This number identifies the feature on the mapping and correlates it to the additional information provided below. This identification number precedes all other information and takes the following format -Id: 1, Id: 2, etc. Where numerous features on the same map are in such close proximity that the numbers would obscure each other a letter identifier is used instead to represent the features. (e.g. Three features which overlap may be given the identifier “A” on the map and would be identified separately as features 1A, 3A, 10A on the data tables provided).

Where a feature is reported in the data tables to a distance greater than the map area, it is noted in the data table as “Not Shown”.

All distances given in this report are in Metres (m). Directions are given as compass headings such as N: North, E: East, NE: North East from the nearest point of the study site boundary.

1. Historical Land Use



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Site Outline

250
500
Search Buffers (m)

Historical 1:10,000 and 1:10,560 scale mapping

Industrial Land Use

Potentially Infilled Land

Historical 1:2,500, 1:1,250 and 1:500 scale mapping

Energy Features

Petrol Stations

Tanks

Garages

1. Historical Industrial Sites

1.1 Potentially Contaminative Uses identified from 1:10,000 scale Mapping

The systematic analysis of data extracted from standard 1:10,560 and 1:10,000 scale historical maps provides the following information:

Records of sites with a potentially contaminative past land use within 500m of the search boundary: 114

ID	Distance [m]	Direction	Use	Date
1A	0	On Site	Cuttings	1974
2A	0	On Site	Cuttings	1966
3A	0	On Site	Cuttings	1986
4A	0	On Site	Cuttings	1951
5B	0	On Site	Cuttings	1948
6B	0	On Site	Cuttings	1932
7C	0	On Site	Cuttings	1986
8C	0	On Site	Cuttings	1951
9C	0	On Site	Cuttings	1974
10C	0	On Site	Cuttings	1966
11D	0	On Site	Colliery	1974
12D	0	On Site	Colliery	1986
13E	3	SW	Unspecified Mine	1966
14E	3	SW	Colliery	1986
15E	3	SW	Colliery	1974
16E	4	SW	Colliery	1951
17G	7	SW	Colliery	1948
18F	9	N	Colliery	1932
19F	9	N	Colliery	1932
20F	9	N	Railway Sidings	1932
21T	9	N	Railway Sidings	1966
22G	9	SW	Colliery	1932
23	9	SW	Colliery	1932
24F	11	N	Railway Sidings	1948
25F	11	N	Colliery	1948
26	15	N	Railway Sidings	1951
27U	19	N	Railway Sidings	1974
28J	19	S	Railway Sidings	1948
29H	21	SW	Mineral Railway Sidings	1986
30H	21	SW	Mineral Railway Sidings	1974
31I	21	N	Unspecified Works	1974
32I	21	N	Unspecified Works	1966
33H	22	SW	Mineral Railway Sidings	1966
34H	22	SW	Mineral Railway Sidings	1951

35J	22	S	Railway Sidings	1932
36I	25	N	Electricity Substation	1986
37K	34	N	Unspecified Heap	1948
38K	37	N	Unspecified Heap	1932
39K	37	N	Unspecified Heap	1932
40AJ	60	N	Refuse Heap	1986
41L	78	N	Refuse Heap	1948
42L	89	NW	Refuse Heap	1932
43L	89	NW	Refuse Heap	1932
44AL	108	N	Unspecified Disused Tip	1974
45AM	112	N	Unspecified Mine	1966
46	135	N	Unspecified Works	1974
47M	160	SW	Unspecified Pit	1932
48M	160	SW	Unspecified Pit	1932
49L	161	NW	Railway Building	1951
50M	161	SW	Unspecified Ground Workings	1948
51O	183	S	Mineral Railway Sidings	1932
52N	183	S	Colliery	1932
53N	183	S	Colliery	1932
54N	190	S	Colliery	1948
55O	190	S	Mineral Railway Sidings	1948
56P	199	SW	Cuttings	1951
57P	211	SW	Cuttings	1948
58AN	227	SE	Unspecified Heap	1951
59	229	SE	Railway Sidings	1948
60Q	236	NW	Colliery	1939
61Q	236	NW	Railway Sidings	1939
62R	237	NW	Railway Sidings	1929
63Q	237	NW	Colliery	1929
64Q	238	NW	Colliery	1948
65Q	238	NW	Colliery	1948
66R	238	NW	Railway Sidings	1948
67S	239	S	Unspecified Tank	1932
68R	244	NW	Colliery	1951
69S	245	S	Unspecified Tank	1948
70T	267	NW	Refuse Heap	1948
71T	267	NW	Refuse Heap	1948
72T	268	NW	Refuse Heap	1939
73T	270	NW	Refuse Heap	1951
74T	273	NW	Refuse Heap	1929
75AO	276	NW	Cuttings	1939
76U	278	NW	Cuttings	1966
77V	278	NW	Cuttings	1951
78V	278	NW	Cuttings	1974
79AE	278	N	Unspecified Workings	1974

80AP	279	NW	Cuttings	1948
81	282	NW	Cuttings	1929
82W	295	NW	Railway Sidings	1986
83W	295	NW	Railway Sidings	1974
84Y	319	SE	Cuttings	1932
85U	324	NW	Cuttings	1986
86X	325	SE	Cuttings	1951
87X	325	SE	Cuttings	1974
88X	325	SE	Cuttings	1986
89X	325	SE	Cuttings	1966
90Y	328	SE	Cuttings	1948
91AC	347	NW	Railway Sidings	1986
92Q	403	NW	Refuse Heap	1939
93	406	SE	Railway Sidings	1951
94Z	406	NW	Refuse Heaps	1948
95Z	406	NW	Refuse Heaps	1948
96Q	407	NW	Refuse Heap	1929
97AA	408	NW	Unspecified Shaft	1986
98AA	408	NW	Unspecified Shaft	1974
99Q	410	NW	Refuse Heap	1951
100AH	421	S	Unspecified Tanks	1966
101AB	447	NW	Cuttings	1966
102AB	447	NW	Cuttings	1951
103AB	447	NW	Cuttings	1986
104AB	447	NW	Cuttings	1974
105AC	447	NW	Railway Building	1986
106AD	465	NW	Refuse Heap	1966
107AD	470	NW	Unspecified Heap	1951
108Z	473	NW	Refuse Heap	1939
109Z	478	NW	Refuse Heap	1929
110AE	480	N	Unspecified Heaps	1986
111AR	492	N	Unspecified Heap	1966
112AE	493	N	Unspecified Heap	1966
113AF	500	NW	Unspecified Disused Tip	1974
114AF	500	NW	Unspecified Disused Tip	1986

1.2 Additional Information – Historical Tank Database

The systematic analysis of data extracted from High Detailed 1:1,250 and 1:2,500 scale historical maps provides the following information.

Records of historical tanks within 500m of the search boundary: 13

ID	Distance (m)	Direction	Use	Date

115	60	SW	Unspecified Tank	1984
116T	355	NW	Unspecified Tank	1973
117AG	390	S	Unspecified Tank	1971
118AG	390	S	Unspecified Tank	1991
119AA	407	NW	Unspecified Tank	1961
120AA	407	NW	Unspecified Tank	1962
121AH	417	S	Tanks	1991
122AH	417	S	Tanks	1961
123AH	417	S	Tanks	1971
124AH	444	S	Tanks	1991
125AH	445	S	Tanks	1971
126AI	473	S	Tanks	1991
127AI	473	S	Tanks	1971

1.3 Additional Information – Historical Energy Features Database

The systematic analysis of data extracted from High Detailed 1:1,250 and 1:2,500 scale historical maps provides the following information.

Records of historical energy features within 500m of the search boundary: 2

ID	Distance (m)	Direction	Use	Date
128I	21	N	Electricity Substation	1984
129I	30	NE	Electricity Substation	1998

1.4 Additional Information – Historical Petrol and Fuel Site Database

The systematic analysis of data extracted from High Detailed 1:1,250 and 1:2,500 scale historical maps provides the following information.

Records of historical petrol stations and fuel sites within 500m of the search boundary: 0

Database searched and no data found.

1.5 Additional Information – Historical Garage and Motor Vehicle Repair Database

The systematic analysis of data extracted from High Detailed 1:1,250 and 1:2,500 scale historical maps provides the following information.

Records of historical garage and motor vehicle repair sites within 500m of the search boundary: 0

Database searched and no data found.

1.6 Potentially Infilled Land

Records of Potentially Infilled Features from 1:10,000 scale mapping within 500m of the study site: 88

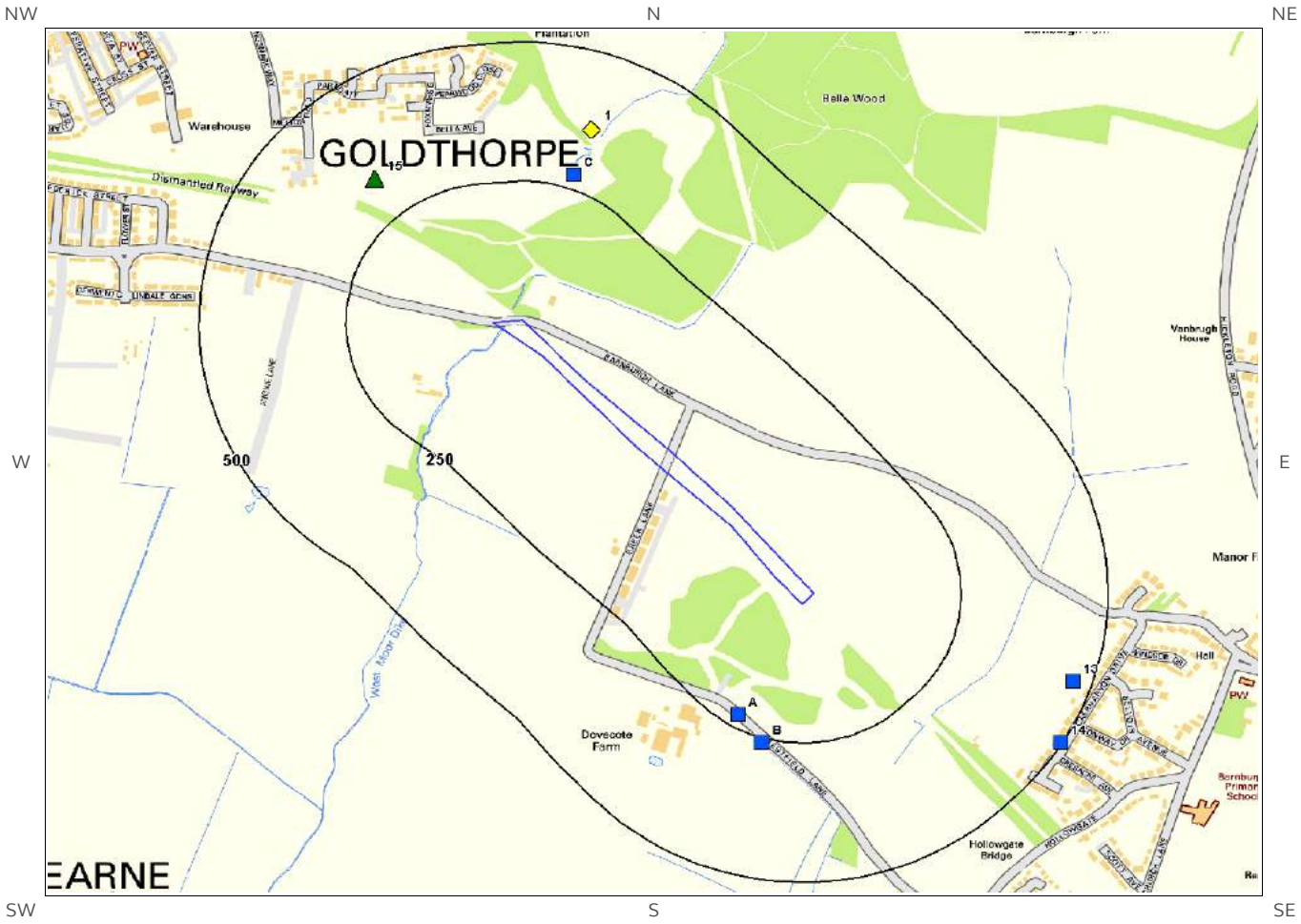
The following Historical Potentially Infilled Features derived from the Historical Mapping information is provided by Groundsure:

ID	Distance(m)	Direction	Use	Date
130A	0	On Site	Cuttings	1951
131A	0	On Site	Cuttings	1986
132A	0	On Site	Cuttings	1966
133C	0	On Site	Cuttings	1966
134C	0	On Site	Cuttings	1986
135C	0	On Site	Cuttings	1951
136B	0	On Site	Cuttings	1948
137C	0	On Site	Cuttings	1974
138B	0	On Site	Cuttings	1932
139A	0	On Site	Cuttings	1974
140D	0	On Site	Colliery	1986
141D	0	On Site	Colliery	1974
142E	3	SW	Colliery	1986
143E	3	SW	Unspecified Mine	1966
144E	3	SW	Colliery	1974
145E	4	SW	Colliery	1951
146G	7	SW	Colliery	1948
147F	9	N	Colliery	1932
148F	9	N	Colliery	1932
149G	9	SW	Colliery	1932
150G	9	SW	Colliery	1932
151F	11	N	Colliery	1948
152K	34	N	Unspecified Heap	1948
153K	37	N	Unspecified Heap	1932
154K	37	N	Unspecified Heap	1932
155AJ	60	N	Refuse Heap	1986
156AK	76	SW	Pond	1986
157AK	76	SW	Pond	1966
158AK	76	SW	Reservoir	1951
159AK	76	SW	Pond	1974
160L	78	N	Refuse Heap	1948
161AK	80	SW	Reservoir	1948
162AK	81	SW	Reservoir	1932
163L	89	NW	Refuse Heap	1932
164L	89	NW	Refuse Heap	1932
165AL	108	N	Unspecified Disused Tip	1974
166AM	112	N	Unspecified Mine	1966

167M	160	SW	Unspecified Pit	1932
168M	160	SW	Unspecified Pit	1932
169M	161	SW	Unspecified Ground Workings	1948
170N	183	S	Colliery	1932
171N	183	S	Colliery	1932
172N	190	S	Colliery	1948
173P	199	SW	Cuttings	1951
174P	211	SW	Cuttings	1948
175AN	227	SE	Unspecified Heap	1951
176Q	236	NW	Colliery	1939
177Q	238	NW	Colliery	1948
178Q	238	NW	Colliery	1948
179R	244	NW	Colliery	1951
180T	267	NW	Refuse Heap	1948
181T	267	NW	Refuse Heap	1948
182T	268	NW	Refuse Heap	1939
183T	270	NW	Refuse Heap	1951
184AO	276	NW	Cuttings	1939
185U	278	NW	Cuttings	1966
186U	278	NW	Cuttings	1951
187U	278	NW	Cuttings	1974
188AE	278	N	Unspecified Workings	1974
189AP	279	NW	Cuttings	1948
190Y	319	SE	Cuttings	1932
191U	324	NW	Cuttings	1986
192X	325	SE	Cuttings	1951
193X	325	SE	Cuttings	1974
194X	325	SE	Cuttings	1966
195X	325	SE	Cuttings	1986
196Y	328	SE	Cuttings	1948
197Q	403	NW	Refuse Heap	1939
198Z	406	NW	Refuse Heaps	1948
199Z	406	NW	Refuse Heaps	1948
200AA	408	NW	Unspecified Shaft	1974
201AA	408	NW	Unspecified Shaft	1986
202Q	410	NW	Refuse Heap	1951
203AB	447	NW	Cuttings	1951
204AB	447	NW	Cuttings	1986
205AB	447	NW	Cuttings	1966
206AB	447	NW	Cuttings	1974
207AD	465	NW	Refuse Heap	1966
208AD	470	NW	Unspecified Heap	1951
209AD	473	NW	Refuse Heap	1939
210AE	480	N	Unspecified Heaps	1986
211AQ	487	SW	Ponds	1966

212AQ	487	SW	Ponds	1986
213AQ	487	SW	Ponds	1974
214AR	492	N	Unspecified Heap	1966
215AE	493	N	Unspecified Heap	1966
216AF	500	NW	Unspecified Disused Tip	1986
217AF	500	NW	Unspecified Disused Tip	1974

2. Environmental Permits, Incidents and Registers Map



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- Site Outline
- Search Buffers (m) (250, 500)
- Recorded Pollution Incident
- Dangerous Substances (List 1)
- Dangerous Substances (List 2)
- Water Industry Referrals
- Licenced Discharge Consents
- Red List Discharge Consents
- RAS 3 & 4 Authorisations
- Part A(1) Authorised Processes and Historic IPC Authorisations
- Part A(2) and Part B Authorised Processes
- COMAH / NIHHS Sites
- Sites Determined as Contaminated Land
- Hazardous Substance Consents and Enforcements

2. Environmental Permits, Incidents and Registers

2.1 Industrial Sites Holding Licences and/or Authorisations

Searches of information provided by the Environment Agency/Natural Resources Wales and Local Authorities reveal the following information:

2.1.1 Records of historic IPC Authorisations within 500m of the study site:

0

Database searched and no data found.

2.1.2 Records of Part A(1) and IPPC Authorised Activities within 500m of the study site:

0

Database searched and no data found.

2.1.3 Records of Red List Discharge Consents (potentially harmful discharges to controlled waters) within 500m of the study site:

0

Database searched and no data found.

2.1.4 Records of List 1 Dangerous Substances Inventory Sites within 500m of the study site:

0

Database searched and no data found.

2.1.5 Records of List 2 Dangerous Substance Inventory Sites within 500m of the study site:

1

The following List 2 Dangerous Substance Inventory Site records are represented as points on the Environmental Permits, Incidents and Registers Map:

ID	Distance (m)	Direction	NGR	Details	
1	361	N	447300 404200	Name: British Coal, Goldthorpe Coll -bella Adt Status: Not Active Receiving Water: Dearne	Authorised Substances: Iron

2.1.6 Records of Part A(2) and Part B Activities and Enforcements within 500m of the study site:

1

The following Part A(2) and Part B Activities are represented as points on the Environmental Permits, Incidents and Registers Map:

ID	Distance (m)	Direction	NGR	Details	
15	325	NW	446931 404109	Address: British Coal, Goldthorpe Colliery, Goldthorpe, Rotherham, S63 9HX Process: coal/gypsum/carbon process Status: Historical Permit Permit Type: Part B	Enforcement: No Enforcements Notified Date of Enforcement: No Enforcements Notified Comment: No Enforcements Notified

2.1.7 Records of Category 3 or 4 Radioactive Substances Authorisations:

0

Database searched and no data found.

2.1.8 Records of Licensed Discharge Consents within 500m of the study site:

13

The following Licensed Discharge Consents records are represented as points on the Environmental Permits, Incidents and Registers Map:

ID	Distance (m)	Direction	NGR	Details	
2A	227	SW	447550 403150	Address: BARNBURGH STW, GREEN LANE/WESTFIELD LANE, BARNBURGH, SOUTH YORKSHIRE Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: WRA7509 Permit Version: 1	Receiving Water: TRIB OF RIVER DEARNE Status: NEW CONSENT (WRA 91, S88 & SCHED 10 AS AMENDED BY ENV ACT 1995) Issue date: 26/05/1999 Effective Date: 26-May-1999 Revocation Date: 20/04/2005

ID	Distance (m)	Direction	NGR	Details	
3A	227	SW	447550 403150	Address: BARNBURGH STW, GREEN LANE/WESTFIELD LANE, BARNBURGH, SOUTH YORKSHIRE Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - WATER COMPANY Permit Number: WRA7509 Permit Version: 1	Receiving Water: TRIB OF RIVER DEARNE Status: NEW CONSENT (WRA 91, S88 & SCHED 10 AS AMENDED BY ENV ACT 1995) Issue date: 26/05/1999 Effective Date: 26-May-1999 Revocation Date: 20/04/2005
4A	227	SW	447550 403150	Address: BARNBURGH STW, GREEN LANE/WESTFIELD LANE, BARNBURGH, SOUTH YORKSHIRE Effluent Type: SEWAGE DISCHARGES - STW STORM OVERFLOW/STORM TANK - WATER COMPANY Permit Number: WRA7509 Permit Version: 1	Receiving Water: TRIB OF RIVER DEARNE Status: NEW CONSENT (WRA 91, S88 & SCHED 10 AS AMENDED BY ENV ACT 1995) Issue date: 26/05/1999 Effective Date: 26-May-1999 Revocation Date: 20/04/2005
5B	259	S	447590 403100	Address: BARNBURGH STW, GREEN LANE/WESTFIELD LANE, BARNBURGH, SOUTH YORKSHIRE Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - WATER COMPANY Permit Number: WRA7509 Permit Version: 3	Receiving Water: TRIBUTARY OF THE RIVER DEARNE Status: MODIFIED - (WRA 91 SCHED 10 - AS AMENDED BY ENV ACT 1995) Issue date: 09/02/2006 Effective Date: 09-Feb-2006 Revocation Date: -
6B	259	S	447590 403100	Address: BARNBURGH STW, GREEN LANE/WESTFIELD LANE, BARNBURGH, SOUTH YORKSHIRE Effluent Type: SEWAGE DISCHARGES - PUMPING STATION - WATER COMPANY Permit Number: WRA7509 Permit Version: 3	Receiving Water: TRIBUTARY OF THE RIVER DEARNE Status: MODIFIED - (WRA 91 SCHED 10 - AS AMENDED BY ENV ACT 1995) Issue date: 09/02/2006 Effective Date: 09-Feb-2006 Revocation Date: -
7B	259	S	447590 403100	Address: BARNBURGH STW, GREEN LANE/WESTFIELD LANE, BARNBURGH, SOUTH YORKSHIRE Effluent Type: SEWAGE DISCHARGES - PUMPING STATION - WATER COMPANY Permit Number: WRA7509 Permit Version: 2	Receiving Water: TRIBUTARY OF THE RIVER DEARNE Status: VARIED BY APPLICATION - (WRA 91 SCHED 10 - AS AMENDED BY ENV ACT 1995) Issue date: 21/04/2005 Effective Date: 21-Apr-2005 Revocation Date: 08/02/2006
8B	259	S	447590 403100	Address: BARNBURGH STW, GREEN LANE/WESTFIELD LANE, BARNBURGH, SOUTH YORKSHIRE Effluent Type: SEWAGE DISCHARGES - STW STORM OVERFLOW/STORM TANK - WATER COMPANY Permit Number: WRA7509 Permit Version: 3	Receiving Water: TRIBUTARY OF THE RIVER DEARNE Status: MODIFIED - (WRA 91 SCHED 10 - AS AMENDED BY ENV ACT 1995) Issue date: 09/02/2006 Effective Date: 09-Feb-2006 Revocation Date: -
9B	259	S	447590 403100	Address: BARNBURGH STW, GREEN LANE/WESTFIELD LANE, BARNBURGH, SOUTH YORKSHIRE Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - WATER COMPANY Permit Number: WRA7509 Permit Version: 2	Receiving Water: TRIBUTARY OF THE RIVER DEARNE Status: VARIED BY APPLICATION - (WRA 91 SCHED 10 - AS AMENDED BY ENV ACT 1995) Issue date: 21/04/2005 Effective Date: 21-Apr-2005 Revocation Date: 08/02/2006
10B	259	S	447590 403100	Address: BARNBURGH STW, GREEN LANE/WESTFIELD LANE, BARNBURGH, SOUTH YORKSHIRE Effluent Type: SEWAGE DISCHARGES - STW STORM OVERFLOW/STORM TANK - WATER COMPANY Permit Number: WRA7509 Permit Version: 2	Receiving Water: TRIBUTARY OF THE RIVER DEARNE Status: VARIED BY APPLICATION - (WRA 91 SCHED 10 - AS AMENDED BY ENV ACT 1995) Issue date: 21/04/2005 Effective Date: 21-Apr-2005 Revocation Date: 08/02/2006

ID	Distance (m)	Direction	NGR	Details	
11C	276	N	447270 404120	Address: GOLDTHORPE COLLIERY, GOLDTHORPE, BARNSLEY, SOUTH YORKSHIRE Effluent Type: TRADE DISCHARGES - MINERAL WORKINGS Permit Number: WRA7067 Permit Version: 1	Receiving Water: WEST MOOR DIKE Status: NEW CONSENT, BY APPLICATION (WRA 91, SECTION 88) Issue date: 21/07/1994 Effective Date: 21-Jul-1994 Revocation Date: 10/10/1994
12C	276	N	447270 404120	Address: GOLDTHORPE COLLIERY, GOLDTHORPE, BARNSLEY, SOUTH YORKSHIRE Effluent Type: TRADE DISCHARGES - MINERAL WORKINGS Permit Number: WRA7067 Permit Version: 2	Receiving Water: WEST MOOR DIKE Status: CONSENT REVOKED - DISCHARGE CEASED (WRA 91, SCHED 10 & 6) Issue date: 11/10/1994 Effective Date: 11-Oct-1994 Revocation Date: 09/08/1995
13	467	E	448120 403210	Address: CAERNARVON DRIVE SEWAGE PUMPING STN, MEXBOROUGH, DONCASTER, SOUTH YORKSHIRE Effluent Type: SEWAGE DISCHARGES - PUMPING STATION - WATER COMPANY Permit Number: WRA7791 Permit Version: 1	Receiving Water: UNNAMED TRIB OF RIVER DEARNE Status: NEW CONSENT (WRA 91, S88 & SCHED 10 AS AMENDED BY ENV ACT 1995) Issue date: 26/02/2002 Effective Date: 26-Feb-2002 Revocation Date: -
14	497	SE	448100 403100	Address: CAERNARVON DRIVE SPS, BARNBURGH, DONCASTER, SOUTH YORKSHIRE Effluent Type: SEWAGE DISCHARGES - PUMPING STATION - WATER COMPANY Permit Number: WADC24 Permit Version: 1	Receiving Water: ADJ TO SW SEWER Status: TRANSFERRED FROM WATER ACT 1989 Issue date: 02/11/1989 Effective Date: 02-Nov-1989 Revocation Date: 08/06/2002

2.1.9 Records of Water Industry Referrals (potentially harmful discharges to the public sewer) within 500m of the study site:

0

Database searched and no data found.

2.1.10 Records of Planning Hazardous Substance Consents and Enforcements within 500m of the study site:

0

Database searched and no data found.

2.2 Dangerous or Hazardous Sites

Records of COMAH & NIHHS sites within 500m of the study site: 0

Database searched and no data found.

2.3 Environment Agency/Natural Resources Wales Recorded Pollution Incidents

2.3.1 Records of National Incidents Recording System, List 2 within 500m of the study site:

0

Database searched and no data found.

2.3.2 Records of National Incidents Recording System, List 1 within 500m of the study site:

0

Database searched and no data found.

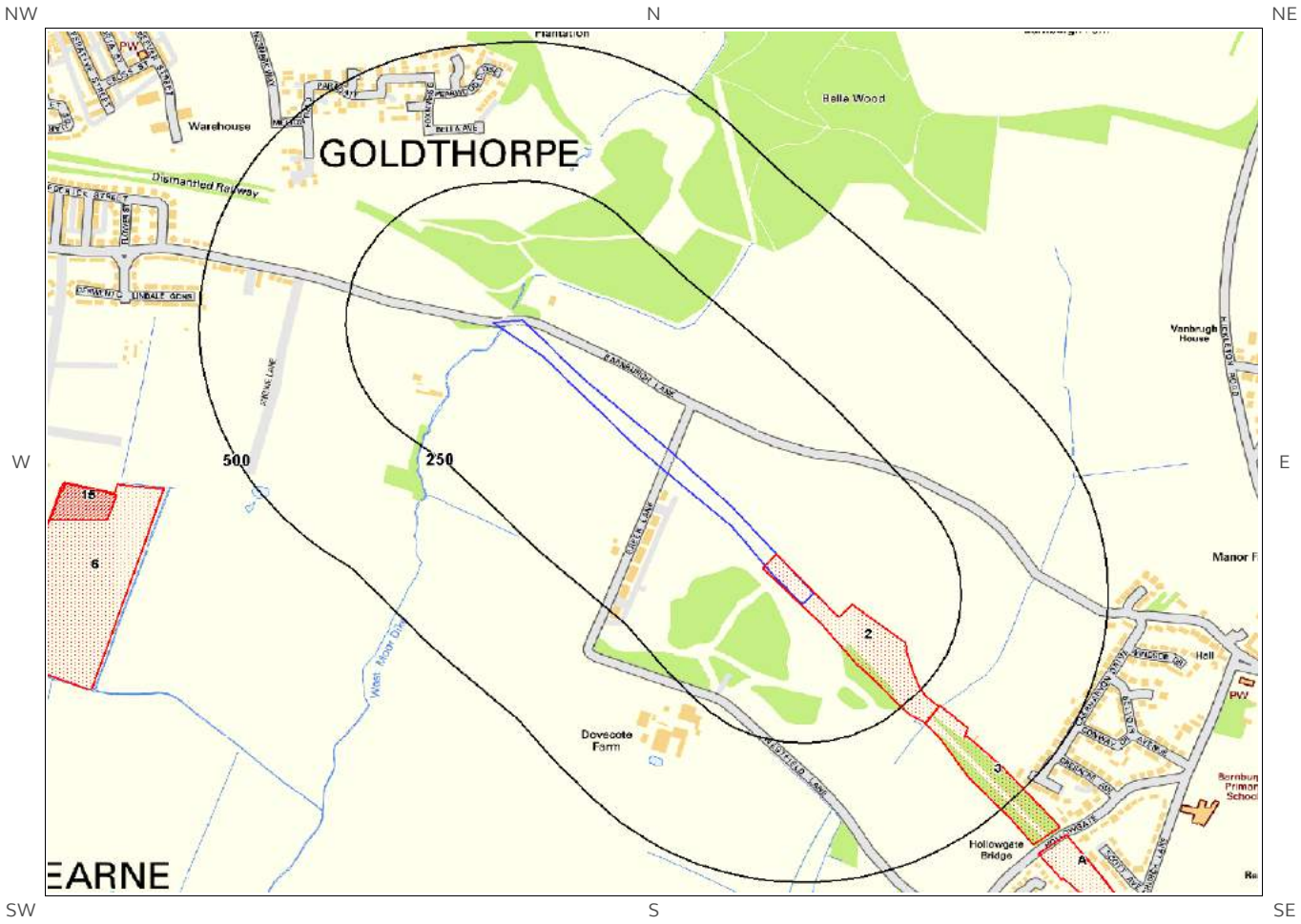
2.4 Sites Determined as Contaminated Land under Part 2A EPA 1990

How many records of sites determined as contaminated land under Section 78R of the Environmental Protection Act 1990 are there within 500m of the study site? 0

Database searched and no data found.

---

3. Landfill and Other Waste Sites Map



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Site Outline

250 / 500 Search Buffers (m)

EA/NRW Active Landfill

EA/NRW Historic Landfill

BGS / DoE Survey Landfill

Historic and Planned Waste Sites

EA/NRW Licensed Waste Site

Local Authority/Historical Mapping Landfill Records

3. Landfill and Other Waste Sites

3.1 Landfill Sites

3.1.1 Records from Environment Agency/Natural Resources Wales landfill data within 1000m of the study site:

0

Database searched and no data found.

3.1.2 Records of Environment Agency/Natural Resources Wales historic landfill sites within 1500m of the study site:

10

The following landfill records are represented as either points or polygons on the Landfill and Other Waste Sites map:

ID	Distance (m)	Direction	NGR	Details	
2	0	On Site	447700 403200	Site Address: Hollow Gate Bridge, Church Lane, Barnsley Waste Licence: Yes Site Reference: 4400/(39)D, WD20/B581, WD20/D370, 4400/0501, WD20 B350, WD20 581 Waste Type: - Environmental Permitting Regulations (Waste) Reference: -	Licence Issue: 29-Oct-1976 Licence Surrendered: Licence Holder Address: - Operator: W F Grumett Licence Holder: British Coal First Recorded: 31-Dec-1989 Last Recorded: 31-Dec-1990
3	294	SE	447900 403000	Site Address: Hollowgate, Barnburgh Waste Licence: - Site Reference: 4400/(20), WD20/D581 Waste Type: - Environmental Permitting Regulations (Waste) Reference: -	Licence Issue: Licence Surrendered: Licence Holder Address: - Operator: - Licence Holder: British Rail First Recorded: - Last Recorded: -
4A	602	SE	448100 402800	Site Address: Railway Cutting, Hollowgate Bridge-Church Lane, Barnburgh, Doncaster Waste Licence: Yes Site Reference: 87/10/1312, 4400/D350, 58, WD20 D350 Waste Type: Inert, Industrial Environmental Permitting Regulations (Waste) Reference: -	Licence Issue: 22-Mar-1982 Licence Surrendered: 09-May-1991 Licence Holder Address: 42 Mill Lane, Warmsworth, Doncaster Operator: - Licence Holder: W F Grummett First Recorded: 22-Mar-1982 Last Recorded: 09-May-1991

ID	Distance (m)	Direction	NGR	Details	
5A	603	SE	448100 402800	Site Address: Railway Cutting between Church Lane and Hollowgate, Harlington, Barnburgh, Near Doncaster Waste Licence: Yes Site Reference: WD20 D103, 4400/D103, (20)D, 20D103(34) Waste Type: Inert, Commercial Environmental Permitting Regulations (Waste) Reference: -	Licence Issue: 10-Nov-1977 Licence Surrendered: 01-Dec-1979 Licence Holder Address: Mill Road, Treeton, Rotherham Operator: - Licence Holder: Sheffield Tippers Limited First Recorded: 10-Nov-1977 Last Recorded: 13-Nov-1979
6	634	SW	446300 403400	Site Address: Marsh Tip, Goldthorpe, Rotherham, South Yorkshire Waste Licence: Yes Site Reference: 4400/B3, 2B3(5), WD2 B3 Waste Type: Inert, Industrial, Commercial, Household, Liquid sludge Environmental Permitting Regulations (Waste) Reference: -	Licence Issue: 03-Nov-1976 Licence Surrendered: 31-Dec-1979 Licence Holder Address: - Operator: Deane Urban District Councol Licence Holder: South Yorkshire County Council First Recorded: 31-Dec-1970 Last Recorded: 31-Dec-1979
Not shown	826	S	447400 402400	Site Address: Don Bait Company Limited, West Moot Lane, Harlington, Doncaster Waste Licence: Yes Site Reference: WD20 B157, 4400/B157 Waste Type: Industrial, Special, Liquid sludge Environmental Permitting Regulations (Waste) Reference: -	Licence Issue: 01-Jul-1977 Licence Surrendered: 01-Nov-1994 Licence Holder Address: Adwick Road, Mexborough Operator: Don Bait Company Limited Licence Holder: Don Bait Company Limited First Recorded: 31-Jul-1977 Last Recorded: 01-Nov-1994
Not shown	870	NE	447800 404400	Site Address: Hickleton Park - Barnburgh Park Quarry No.2, Hickleton Park, Hickleton Waste Licence: Yes Site Reference: WD20 D45, 4400/D442, WD20 D442, WD20 D44 Waste Type: Inert, Commercial Environmental Permitting Regulations (Waste) Reference: -	Licence Issue: 14-Nov-1984 Licence Surrendered: 29-Apr-1994 Licence Holder Address: Hickleton House, Manor Farm, Barnburgh, Doncaster Operator: - Licence Holder: Mr M P Burke First Recorded: 14-Nov-1984 Last Recorded: 29-Apr-1994
Not shown	1276	W	445800 404200	Site Address: Railway Cutting, Off Highfield Avenue, Goldthorpe Waste Licence: Yes Site Reference: 20B474(13), WD20 B474, 4400/B474 Waste Type: Inert, Commercial, Liquid sludge Environmental Permitting Regulations (Waste) Reference: -	Licence Issue: 17-May-1985 Licence Surrendered: 17-Nov-1986 Licence Holder Address: Amenities and Recreation Department, 50 Huddersfield Road, Barnsley Operator: Barnsley Metropolitan Borough Council Licence Holder: Barnsley Metropolitan Borough Council First Recorded: 31-May-1985 Last Recorded: 17-Nov-1986
Not shown	1326	NE	448100 404700	Site Address: Hickleton Park Quarry No.1, Hickleton Park, Hickleton Waste Licence: Yes Site Reference: WD20 D453, 4400/D453, WDL D453 Waste Type: Inert, Commercial Environmental Permitting Regulations (Waste) Reference: -	Licence Issue: 14-Nov-1984 Licence Surrendered: 29-Apr-1994 Licence Holder Address: Hickleton House, Manor Farm, Hickleton Road, Barnburgh, Doncaster Operator: - Licence Holder: Mr M P Burke First Recorded: 14-Nov-1984 Last Recorded: 29-Apr-1994
Not shown	1443	NE	448700 404400	Site Address: Hickleton, Barnburgh Road, Hickleton, Doncaster Waste Licence: Yes Site Reference: DC8812, 80/52/509, 4400/D10, WD20 D10 Waste Type: Inert, Commercial Environmental Permitting Regulations (Waste) Reference: -	Licence Issue: 09-Dec-1977 Licence Surrendered: 21-Aug-1984 Licence Holder Address: Carlisle Street, Kilnhurst, Rotherham, South Yorkshire Operator: - Licence Holder: Croda Hydrocarbons Limited First Recorded: 10-Nov-1980 Last Recorded: 21-Aug-1984

3.1.3 Records of BGS/DoE non-operational landfill sites within 1500m of the study site:

1

The following landfill records are represented as points on the Landfill and Other Waste Sites map:

ID	Distance (m)	Direction	NGR	Details	
Not shown	905	SW	446300.0 403500.0	Address: Marsh Tip, Goldthorpe, Rotherham, S Yorks BGS Number: 1547.0	Risk: No risk to aquifer Waste Type: N/A

3.1.4 Records of Landfills from Local Authority and Historical Mapping Records within 1500m of the study site:

2

The following landfill records are represented as points or polygons on the Landfill and Other Waste Sites map:

ID	Distance (m)	Direction	NGR	Site Address	Source	Data Type
15	712	SW	446436 403532	Refuse Tip	1976 mapping	Polygon
Not shown	925	SW	446244 403510	Refuse Tip	1976 mapping	Polygon

3.2 Other Waste Sites

3.2.1 Records of waste treatment, transfer or disposal sites within 500m of the study site:

0

Database searched and no data found.

3.2.2 Records of Environment Agency/Natural Resources Wales licensed waste sites within 1500m of the study site:

3

The following waste treatment, transfer or disposal sites records are represented as points on the Landfill and Other Waste Sites map:

ID	Distance (m)	Direction	NGR	Details	
Not shown	859	SW	446350 403500	Site Address: Land At Marsh Tip, Barnburgh Lane, Goldthorpe, Barnsley, South Yorkshire, S63 9EU Type: Metal Recycling Site (mixed MRS's) Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: SED001 EPR reference: EA/EPR/JP3690ZC/A001 Operator: Sedgwick Mr F Waste Management licence No: 60611 Annual Tonnage: 4999.0	Issue Date: 15/07/1993 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: F. Sedgewick Correspondence Address: -
Not shown	859	SW	446350 403500	Site Address: Barnburgh Lane, Goldthorpe, Barnsley, S Yorks Type: Metal Recycling Site (mixed MRS's) Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: SED001 EPR reference: - Operator: Sedgwick F Waste Management licence No: 60611 Annual Tonnage: 0.0	Issue Date: 15/07/1993 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: F. Sedgewick Correspondence Address: 8, Stuart Street, Thurnscoe, Barnsley, S Yorks, S63 0EF
Not shown	938	W	446200 403950	Site Address: Hope Street, Low Valley, Barnsley, South Yorkshire, S73 0HX Type: Household, Commercial & Industrial Waste T Stn Size: >= 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: RJM001 EPR reference: EA/EPR/RP3390ZN/S002 Operator: R & J M Shaw Waste Disposal Waste Management licence No: 60561 Annual Tonnage: 21656.0	Issue Date: 13/03/1985 Effective Date: - Modified: - Surrendered Date: 05/07/2004 Expiry Date: - Cancelled Date: - Status: Surrendered Site Name: R & J M Shaw Correspondence Address: -