



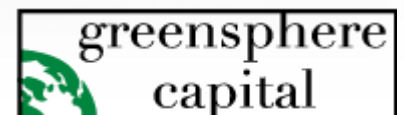
global environmental solutions

Teesside Anaerobic Digestion Power Plant, Middleborough

Environmental Permit Application
Site Condition Report

SLR Ref: 405-4387-00001/SCR

March 2014 V1.3



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APPENDICES

Appendix SCR1 Previous Environmental Site Assessment Reports

- a) Geoinvestigate Ltd, Oct 2005. Desk Study & Site Investigation (SI)
- b) Geoinvestigate Ltd, Feb 2011. Phase1 Desk Study
 - a. SiteCheck Annex
- c) Geoinvestigate Ltd, Jul 2012. Site Investigation

Appendix SCR2 H5 Template (completed)

REFERENCED DRAWINGS

Drawings are included with the Environmental Permit Application Supplementary Information to which this document forms Appendix D.

Drawing 1:	Location Plan with 10km Sensitive Receptors
Drawing 2:	Location Plan with 5km Sensitive Receptors
Drawing 3:	Layout Plan including Drainage & Release points

1.0 INTRODUCTION

Greenlight Teesside Limited proposes to operate an Anaerobic Digestion (AD) facility at their site at the former D1 Oils Premises, Forty Foot Road, Middlesbrough, TS2 1HG. The plant is designed to treat up to 120,000 tonnes of food, agricultural and green waste per year.

AD will produce biogas and digestate. The biogas will be burned in gas engines to produce heat and up to 5.1MWe of electricity. The digestate will be pasteurised prior to storage, from whence it will be taken to be used as a fertiliser.

The Site Condition Report (SCR) has been prepared using Environment Agency H5 Guidance v3. May 2013.

1.1 Site Location

The national grid reference for the site is NZ 488 209. The site address is:

Forty Foot Road
Middlesbrough
TS2 1HG, UK

1.2 Environmental Site Setting

The site is located in a vacant industrial lot on the southern side of a loop of the River Tees within a longstanding heavy industrial area to the north east of Middlesbrough Town. The site and surrounding area has been in heavy industrial land use for over 100 years.

The wider surrounding area is almost wholly characterised by existing industrial and commercial uses within the Riverside Park Industrial Estate. The locality made up of a number of steel fabricating premises, substantial storage and distribution depots and waste management facilities.

Immediately to the north of the site is an open piece of previously developed land forming part of the former D1 Oils site. The eastern boundary abuts the railway line running north/south. An open storage compound is located directly to the south. The nearest residential properties are to the west of the site approximately 510 metres away.

2.0 CONDITION OF LAND

2.1 Geology

1:50,000 Solid and Drift Geology map (BGS Sheet 33 - Stockton) indicates the site to be underlain by unknown thicknesses of Made Ground then Post Glacial Marine Alluvium on top of an unknown thickness of Glacial Laminated Clay. The underlying bedrock is mudstones and marls of the Triassic Mercia Mudstone Group (MMG).

Site Investigation indicates that Made Ground is between 1.8 to 3.2m in thickness and includes foundry waste, granular black ashes and coal with occasional slag and brick, ranging from fine material to gravel and cobble sizes.

Beneath this the natural geology of ground and river alluvium comprises soft and firm natural sandy clay followed by soft silty clay with some sand or very sandy clay.

2.2 Hydrology

The site is located within a loop of the River Tees, with the river ~550 metres to the north & west. The site lies within 250m an area affected by extreme flooding. There are no abstraction points within 250m.

2.3 Hydrogeology

The northern part of the site was previously occupied by a pond or man-made water feature. The site is located within an area of Low groundwater vulnerability with a geological classification of Non Aquifer (Negligibly permeable).

2.4 Pollution History

Currently the area is waste ground. There are records for around 50 potentially contaminative activities within 250m of the site.

The area has been in use for heavy industry for over 100 years. The site is a former iron foundry with adjacent railways sidings. Adjacent and nearby landuse included a brickworks, Coal Depot, Gasworks, Electricity Works, Slag & Concrete Works etc.

Whilst no records of pollution incidents exist these activities are known to be associated with former contaminative landuse. Therefore the conceptual ground hazard model considers the risk of contamination to be High from both onsite and offsite sources.

However, whilst Site Investigation recorded occasional & localised elevated levels of petroleum hydrocarbon (EPH), PAH and some metals; most indications were that levels were well below the assessment criteria. The concentrations of potentially mobile contamination were low.

Whilst some materials could require management to reduce exposure risks the majority of samples indicated that the site did not pose a significant risk to commercial or industrial redevelopment. Assessment indicated that conditions were not likely to be a serious risk to human health and the risks to aquifer were considered to be negligible.

The area is at low radon risk and no radon protective measures need to be installed.

2.5 Permitted Activities

The process is a Schedule 1 listed activity under the Environmental Permitting regulations.

Waste Recovery

Section 5.4 Part A(1)(b)(i) for the biological treatment of waste,

“Recovery or mix of recovery and disposal of non-hazardous waste with a capacity exceeding 75 tonnes per day (or 100 tonnes per day if the only waste treatment activity is anaerobic digestion) involving one or more of the following activities, and excluding activities covered by Council Directive 91/271/EEC ... ”

3.0 CONCLUSION

Having been subject to historic heavy industrial landuse for over a century the risk of contamination is HIGH. However, whilst extensive site investigation has found localised pockets of elevated hydrocarbon and metals, most levels are well below the assessment criteria. The site lies in an area of ‘Non Aquifer’ and of low groundwater vulnerability.

Risk assessment indicates that the site does not pose a significant risk to future commercial or industrial redevelopment. Conditions are not likely to be a serious risk to human health and the risks to aquifer are negligible.

4.0 CLOSURE

This report has been prepared by SLR Consulting Limited with all reasonable skill, care and diligence, and taking account of the manpower and resources devoted to it by agreement with the client. Information reported herein is based on the interpretation of data collected and has been accepted in good faith as being accurate and valid.

This report is for the exclusive use of Greenlight Teesside Limited; no warranties or guarantees are expressed or should be inferred by any third parties. This report may not be relied upon by other parties without written consent from SLR.

SLR disclaims any responsibility to the client and others in respect of any matters outside the agreed scope of the work.

Appendix SCR1 Previous Environmental Site Assessment Reports

- a) Geoinvestigate Ltd, Oct 2005.
Desk Study & Site Investigation (SI)
- b) Geoinvestigate Ltd, Feb 2011.
Phase1 Desk Study
 - SiteCheck Annex
- c) Geoinvestigate Ltd, Jul 2012.
Site Investigation

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Geoenvironmental and Geotechnical Engineers, Drilling and Site Investigation.

B1.3.1

REPORT ON SITE INVESTIGATION

AT Marske Site Services, Forty Foot Road,
Middlesbrough

ON 6 October 2005

FOR D1 Oils (UK) Ltd

YOUR REF. FFR/111

OUR REF. G05232

GE INVESTIGATE Ltd.

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Geoenvironmental and Geotechnical Engineers, Drilling and Site Investigation.

Our Ref. G05232 Your Ref. FFR/111

31 October 2005

Mr D Harris
D1 Oils Trading Ltd C/O
Stride Environmental Ltd
Concorde House
Concorde Way
Preston Farm Business Park
Stockton-on-Tees
TS18 3RB

Dear Sirs

Re: Site Investigation, Marske Site Services, Forty Foot Road, Middlesbrough

1. Introduction

In accordance with your instruction Geoinvestigate Ltd carried out a preliminary site investigation at the above property which it is understood was for many years part of a large iron foundry adjacent to the River Tees.

The site is no longer a foundry and the existing buildings within the site are currently used for storage and limited office use. The surrounding roughly vegetated waste ground is unused.

It is understood that in the short term a small area of the site may be developed for a tank farm with the possibility of extensive redevelopment for industrial or commercial use in the future.

2. Scope of Investigation

The purpose of the current investigation was assess the contamination situation at the site and the scope of the future remediation works that may be required were the site to be subject to extensive redevelopment.

In addition the investigation was to reveal the ground conditions at the proposed tank farm (located in the vicinity of boreholes BH1 and BH2) to establish appropriate foundations for this facility.

The investigation comprised the following components;

- A desk study including a Landmark Sitecheck data search and a review of selected historical OS Maps.
- The sinking of seven (7) percussion window sampling boreholes (BH1 to BH7) to depths of between 0.80m to 5.00m.
- Analyses of eight (8) samples of fill recovered from depths between 0.50m to 3.00m for a range of constituents including Arsenic, Lead, Cyanide PAH and oil and fuel substances etc as considered appropriate.
- Analyses of leachate from three (3) samples of fill for a range of constituents.
- Analyses of three (3) samples of fill for the presence of Asbestos.

The boreholes were sampled and logged at site by an engineering geologist and information on the ground conditions encountered in the exploratory holes is presented on the borehole logs.

The Sitecheck environmental data search, historical OS maps and contamination results are included in the report appendices.

The site is large and the purpose of this limited borehole and the contamination investigation was to provide a general appreciation of the site conditions. Therefore it is possible that conditions such as chemical or oil tanks may exist locally which have not been revealed by the current phase of investigation.

No gas monitoring was carried out as part of the current investigation.

3. Desk Study

3.1 Historical OS Maps

Historical maps covering the period 1857 to 2000 were obtained for the site.

The map of 1857 shows the site was originally part of the Newport Marshes within a meander loop of the River Tees that lies some 500m from the property. Port Darlington lay some distance to the north east of the site and included Potent Fuel Works and Teeside Iron Works. The Old Branch Railway line ran along the eastern site boundary.

By 1895 there had been substantial industrial development of the area which was subsequently called St. Hildas.

By this date the marshes had largely been reclaimed for the development of sprawling iron and steel foundries, wire works, rolling mills, oil stores and multiple railway sidings in the area. The site itself was incorporated within the Acklam Iron Foundry.

Wharnecliffe Gantster Brick Works and the Cast Steel Foundry lay to the north with Middlesbrough Goods Yard Sidings to the east and Ayrton Rolling Mills to the north west and Marsh Engine Works a depot, manure shed, gasometer and a Hide and Skin Market to the south east.

A large water feature or pond is present in the northern part of the site adjacent to Acklam Foundry. This feature is smaller on the map of 1915 and had probably been infilled by 1929.

The map of 1895 shows residential development to the east and south east of the site.

Railway sidings were present circa 1915 along the western margin of the site.

By 1929 a second gasometer had been established to the east of the site while West Marsh Brass Works had appeared to the south west. In addition buildings probably connected with Acklam Foundry had been developed at the northern margin of the site.

By 1953 Wellington Cast Steel Foundry had been established within the western boundary of the site and Ayrton Rolling Mills had been extended to the north west. Newport Wire Works to the west had been renamed Newport Rod Rolling Mills.

The rail sidings in the western part of the site were removed by 1970 and there was a reduction in the number of sidings in the Middlesbrough Goods Yard Sidings to the east. There was a further reduction in the extent of the sidings by 1980 and again by 1992.

The 1975 map shows the site had been renamed Newport Works and the Iron and Steel Works to the north of the site had been removed.

Acklam Foundry to the north of the site had been removed by 1980 and the buildings in the northern part of the site were no longer present by 1992.

The map of 1987 shows the development of Riverside Industrial Park to the north of the site and the creation of the A66 to the south. By 1993 the Britannia Works had been demolished to the west of the site.

In summary the historical maps suggest that soft marshy ground and river alluvium can be expected to underlie the site with a covering of fill of unknown thickness above this comprising foundry waste. The depth of the fill could be expected to increase in the northern part of the site which was previously occupied by a pond or man made water feature.

Several potential sources of historical contamination could occur within and adjacent to the site including foundries, railway sidings and infilled ground. In addition the presence of fill at the site and particularly in the infilled pond to the north and the marsh below this could provide sources of hazardous gas.

Large foundations and buried structures such as tanks formerly belonging to the foundry buildings which once occupied the site may remain buried beneath the site and could give rise to obstructions when new foundations or services are installed.

3.2 Sitecheck Environmental Data Search

Briefly the Sitecheck Report found that the property might potentially fall within a contaminative area (ref Sources, page 5, 8 - 9, 11 - 27) because of past and current industrial land uses in the vicinity of the site.

Eighty six (86) past potentially contaminative activities are shown within and within 250m of the site (p5, 9, 20 - 27). These include 57 historical tanks and energy facilities, 13 potentially contaminative industrial uses, 1 former marsh and 15 potentially infilled land features.

Forty two (42) current potentially contaminative activities are shown within and within 250m of the site (p5, 8, 11 - 19).

With respect to the risk of natural radon emission from the ground (p7, 10 and 32) the report indicates that no radon protective measures need to be installed.

With respect to groundwater vulnerability (p6, 29 and 31) the report states that the property is within an area of groundwater vulnerability.

With regard to licensed landfill sites the report states (p5 and 12) that there are recorded landfills within 0m-250m of the property.

With respect to mineral extraction, coal mining and quarrying (p7, 10 and 32) the report confirms that the site is not in an area which is affected by coal mining and there is no hazard from shallow mining.

Natural subsidence (p7, 10 and 32) with regard to compressible ground is assessed to be of no hazard. Landslide and running sand ground stability hazards is assessed to be very low risk.

With regard to flooding (p6, 28 - 29 and 31) the report states that the property is within or within 0 - 250m of an area affected by flooding from rivers or sea without defences or extreme flooding from rivers or sea without defences.

In summary the Sitecheck report records many past and some current land use activities within and adjacent to the site that could provide sources of contamination and hazardous gas. Of these the former foundry at the site and infilled pond to the north and the adjacent railway sidings would potentially pose the greater risks of the occurrence of contamination and hazardous gas at the site.

4. Encountered Ground Conditions

The boreholes generally encountered similar conditions comprising made ground extending to between 1.80m - 3.20m underlain by soft and firm natural clay representing the original marshy surface in the area.

The made ground was deepest in BH5 and this borehole may have encountered the former infilled pond in the northern part of the site.

Much of the made ground comprised granular black ashes and coal with occasional slag and brick ranging from fine material to gravel and cobble sizes though gravel with brick and sandstone were found in BH4 and BH5 with coal and ash underlying this in BH4.

The made ground was underlain by soft and firm natural sandy clay followed by soft silty clay in BH2 and sand or very sandy clay in BH3, BH4 and BH5. Vane shear vane values in the clay ranged from 25 - 90 kN/m².

The boreholes were described as wet below 1.80m in BH1, 2 and 5 and below 3.50m in BH4 and this may correspond with water levels in the ground at these locations though longer term monitoring would be required to confirm this.

BH1 and BH2 in the vicinity of the new tank farm encountered fill to 2.40m followed by initially soft to firm or firm clay then soft clay exceeding 5.00m.

5. Contamination

Other than slight oil staining at shallow depth in BH7 no obvious visible evidence or odours indicative of the presence of contamination was observed in the samples recovered from the boreholes. On this basis contamination was not expected to pose an extensive or serious problem at the site.

Analyses of the fill from each borehole returned concentrations of a range of substances generally falling below their respective SGVs for commercial/industrial end use as published by DEFRA and the Environment Agency in CLR 10 and its accompanying documents.

For example the SGVs for Arsenic and Lead are 500 mg/kg and 750 mg/kg respectively for commercial/ industrial use and the site returned < 61 mg/kg (Arsenic) and < 303 mg/kg (Lead). Consequently on this basis the ground conditions generally at the site are unlikely to pose a significant risk to human health in the context of existing site activities or to extensive future commercial/industrial redevelopment. Neither would the site conditions pose a risk to the proposed tank farm in the vicinity of BH1 and BH2.

Two of the four samples of fill returned elevated EPH of 533 mg/kg and 1601 mg/kg which may be indicative of the presence of diesel fuel, oil or even coal particles within the fill. Possible petrol or petrol additives were found in very small trace quantities or were absent.

With regard to PAH - total concentrations were < 10 mg/kg and very low even in samples that returned elevated EPH. Consequently on this basis PAH levels in the fill fall well below acceptable limits for commercial/industrial use.

Three out of eight samples of fill returned elevated arsenic levels between 30 mg/kg - 60 mg/kg. On this basis some of the excess spoil which may be removed from the site may require disposal to an appropriately licensed landfill though further advice should be sought regarding this from a receiving landfill.

Analyses of leachate from the fill returned extremely small trace quantities of a range of substances.

No asbestos fibres were found in the fill.

6. Hazardous Gas

Much of the fill materials that underlie the site to a depth of 3.00m comprise essentially granular wastes including ash, coal, stone and rubble. In general materials of this nature would not be expected to generate large quantities of methane gas though carbon dioxide levels may be elevated. However there remains the possibility of organic materials occurring in the fill capable of producing methane and gases may also migrate through this permeable deposit from the underlying former marsh or from adjacent areas. Consequently, in the absence of gas monitoring at the site, there remains a possible gas risk.

7. Conclusions

The following presents a statement of the findings of the current phase of investigation of the site.

- The site is unaffected by mining and no precautions need be taken in this regard.
- No radon measures need be incorporated in existing or new buildings.
- In the absence of gas monitoring, the presence of deep fill, the underlying and adjacent former marshland and other past industrial activities there remains some possibility that gas may affect the site. However as the fill materials below the site are mostly granular the risk from this source may be low though gas monitoring would be required to confirm this.
- Given the presence of weak ash fill some 2m – 3m deep across the site and soft ground below this perhaps with peat associated with the former marsh in this area, new buildings may require special foundations or ground treatment. Alternatives in this regard include rafts, piles, vibro stone columns and dynamic compaction.
- Heavier tank farm structures will require pile foundations extending below 5m and additional deep boreholes will be needed in this area to locate a competent bearing horizon for piles.
- Buried foundations and sub-structures including tanks may occur at the site and may require partial or complete removal where they underlie new buildings or obstruct the installation of new foundations or infrastructure.
- The results of the current limited borehole and contamination investigation has indicated that the contamination situation at the site is reasonably favourable and the ground conditions do not pose a significant risk to the future extensive commercial or industrial redevelopment of the site. Neither is there assessed to be a significant risk to the existing site activities or the proposed current redevelopment of a small part of the site for a tank farm.
- Some of the excess ash spoil from the site may be slightly contaminated with Arsenic and may require disposal to an appropriately licensed landfill though further advice

should be sought on this aspect from a waste management specialist or a receiving landfill.

- Though the results of the current phase of investigation indicate that the site conditions are generally favourable with respect to contamination other circumstances may occur locally within the site including buried tanks which may require further investigation and appraisal.

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Issued on behalf of GEOINVESTIGATE LIMITED by



Stuart Howe BSc(Hons)
Engineering Geologist



Ross Nicolson BSc(Hons) MSc(Eng) CEng MIMM
Principal Geotechnical Engineer

GEOINVESTIGATE Ltd.

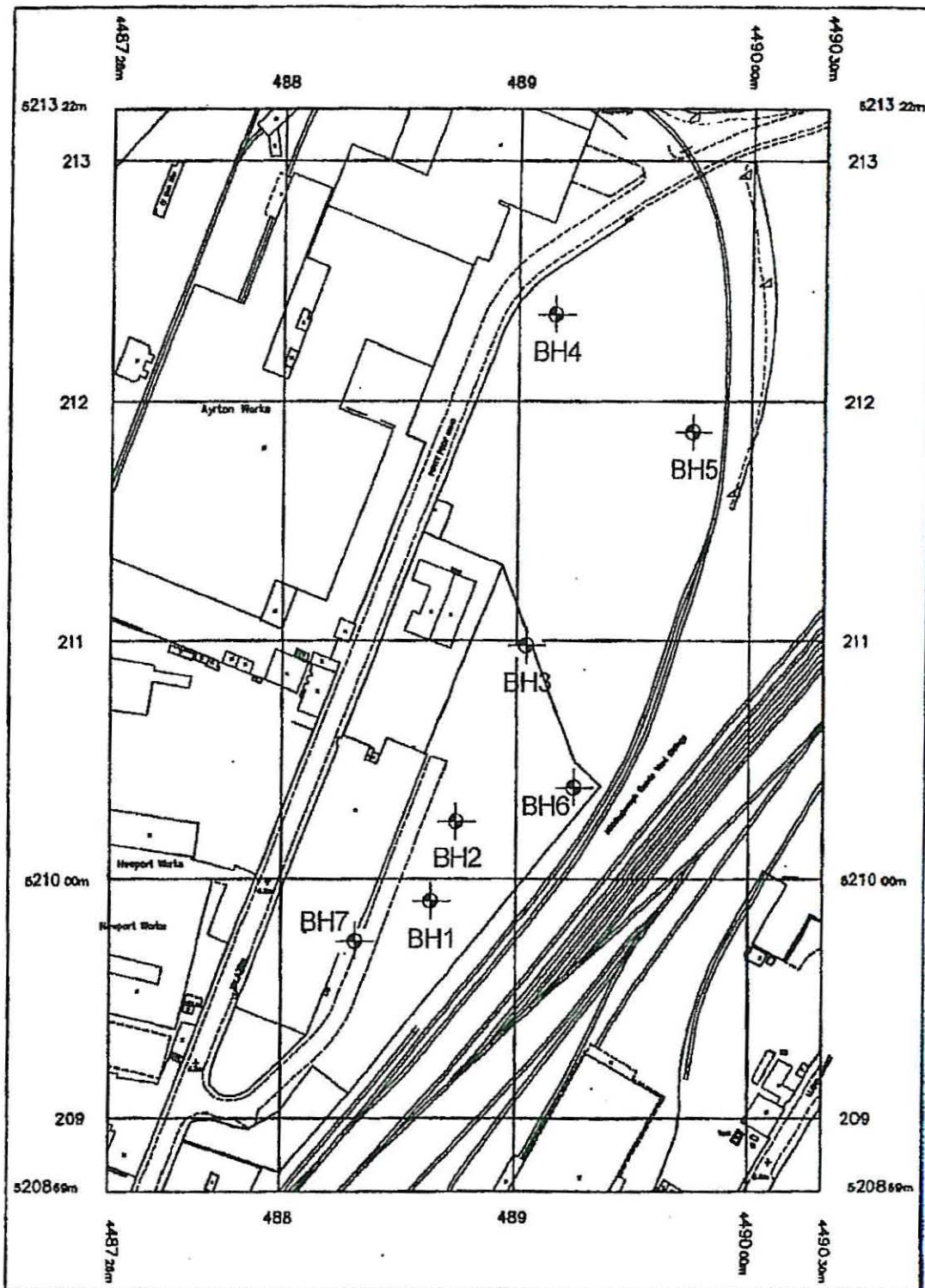
OUR REF:G05232

YOUR REF:FFR/111

SITE PLAN (NOT TO SCALE)

DATE: 28/10/05

LOCATION: Marske Site Services, Forty Foot Road, Middlesbrough



GEOINVESTIGATE Ltd.

Your Ref. FFR/111

Our Ref. G05232

BH No.1 Sheet No. 1 of 1

Location: Marske Site Services, Forty Foot Road, Middlesbrough

DATE: 06/10/05

Depth (m)	Description of Strata	Thickness	Legend	Sample	Test Type Result	Root Information	Depth to Water	Depth (m)
	MADE GROUND Black sandy gravel. Gravel is fine to coarse of coal and ash. Some cobbles				Cv kN/m ²			
	Some inclusions of brown sand 0.40m to 0.80m			O				0.50
		2300		O				1.00
				O				1.50
	Wet from 1.80m			O				2.00
2.30								
	Soft to firm orangish grey, slightly sandy CLAY. Occasional fine to coarse gravel to 2.60m			O	42			2.50
				O	40			3.00
		2700		O				3.50
	Becoming soft and very sandy from 4.00m			O				4.00
	No sample recovered from below 4.30m			O				4.50
5.00	Borehole Terminated at 5.00m			O				5.00

Remarks: Percussion window sampling to 5.00m
Borehole closed below 1.00m

Key: O Disturbed sample
Cv Shear vane
W Water sample

GEOINVESTIGATE Ltd.

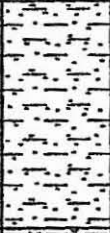
Our Ref. FFR/111

Our Ref. G05232

BH No.2 Sheet No. 1 of 1

Location: Marske Site Services, Forty Foot Road, Middlesbrough

DATE: 06/10/05

(m)	Description of Strata	Thickness	Legend	Sample	Test Type Result	Root Information	Depth to Water	Depth (m)
	MADE GROUND Black sandy gravel. Gravel is fine to coarse of coal and ash. Occasional slag cobbles				Cv kN/m ²			
				O				0.50
				O				1.00
		2400		O				1.50
				O				2.00
2.40	Wet from 1.80m							
	Firm grey mottled brown slightly sandy CLAY			O	80			2.50
		700		O				3.00
3.10					70			
	Soft grey clayey SILT. Too soft to obtain vane values			O				3.50
				O				4.00
		1900		O				4.50
5.00	Borehole Terminated at 5.00m			O				5.00

Remarks: Percussion window sampling to 5.00m
Borehole closed below 1.50m

Key: O Disturbed sample
Cv Shear vane
W Water sample

GEOINVESTIGATE Ltd.

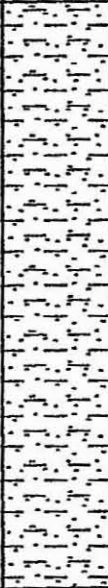
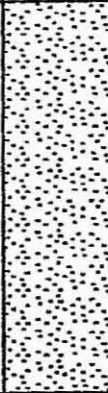
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Our Ref. G05232

BH No.3 Sheet No. 1 of 1

ocation: Marske Site Services, Forty Foot Road, Middlesbrough

DATE: 06/10/05

(m)	Description of Strata	Thick-ness	Legend	Sample	Test Type Result	Root Information	Depth to Water	Depth (m)
	MADE GROUND Black sandy gravel. Gravel is fine to coarse of coal and ash. Some cobbles	2000			Cv kN/m ²			0.50
				O	1.00			
					1.50			
2.00				O	2.00			
	Soft grey mottled orange slightly sandy CLAY	1800			25			2.50
	Wet from 2.50m			O				3.00
								3.50
3.80								
	Orangish brown SAND	1200		O				4.00
					4.50			
5.00	Borehole Terminated at 5.00m				O			5.00

Remarks: Percussion window sampling to 5.00m
Borehole closed below 1.80m
Slag cobble pushed to 3.00m

Key: O Disturbed sample
Cv Shear vane
W Water sample

GEOINVESTIGATE Ltd.

Your Ref. FFR/111

Our Ref. G05232

BH No.4 Sheet No. 1 of 1

Location: Marske Site Services, Forty Foot Road, Middlesbrough

DATE: 06/10/05

(m)	Description of Strata	Thickness	Legend	Sample	Test Type Result	Root Information	Depth to Water	Depth (m)
1.30	MADE GROUND Orangish brown and grey sand. Some gravel	1300		O	Cv kN/m ²			0.50
1.80	MADE GROUND Blackish brown sandy gravel. Gravel is fine to coarse of ash and coal with some slag and cobbles. Wet from 1.30m	500		O				1.00
	Soft to firm blackish brown sandy CLAY. Some black staining.			O	35			1.50
	Becoming firm from 2.30m				65			2.00
	Becoming soft from 2.80m	1700		O	30			2.50
								3.00
								3.50
	Orangish brown firm SAND. Wet			O				4.00
		1500						4.50
5.00	Borehole Terminated at 5.00m			O				5.00

Remarks: Percussion window sampling to 5.00m
Borehole closed below 2.50m

Key: O Disturbed sample
Cv Shear vane
W Water sample

GEOINVESTIGATE Ltd.

Your Ref. FFR/111

Our Ref. G05232

BH No.5 Sheet No. 1 of 1

Location: Marske Site Services, Forty Foot Road, Middlesbrough

DATE: 06/10/05

Depth (m)	Description of Strata	Thickness	Legend	Sample	Test Type Result	Root Information	Depth to Water	Depth (m)
0.50	MADE GROUND Red and grey fine to coarse sandy gravel of brick and concrete	500		O	Cv kN/m ²			0.50
	MADE GROUND Loose grey and black sandy gravel. Gravel is fine to coarse of brick and sandstone. Poor sample recovery/ rapid penetration			O				1.00
								1.50
	Wet from 1.80m	2700		O				2.00
								2.50
3.20				O				3.00
3.60	Soft to firm greyish brown slightly sandy CLAY	400						3.50
	Grey fine to medium SAND			O				4.00
		1400						4.50
5.00	Borehole Terminated at 5.00m			O				5.00

Remarks: Percussion window sampling to 5.00m
Borehole closed below 1.80m

Key: O Disturbed sample
Cv Shear vane
W Water sample

GEOINVESTIGATE Ltd.

Your Ref. FFR/111

Our Ref. G05232

BH No.6 Sheet No. 1 of 1

Location: Marske Site Services, Forty Foot Road, Middlesbrough

DATE: 06/10/05

Depth (m)	Description of Strata	Thickness	Legend	Sample	Test Type Result	Root Information	Depth to Water	Depth (m)
0.50	MADE GROUND Blackish grey sandy gravel. Gravel is fine to coarse of ash and coal. Some sand	2200		O	Cv kN/m ²			0.50
1.00				O				1.00
1.50								1.50
2.00				O				2.00
2.20								
2.50	Firm to stiff dark greyish brown slightly sandy CLAY	900			90			2.50
3.00	Becoming firm from 2.70m Becoming soft from 2.90m			O	40			3.00
3.10								
3.50	Greyish brown SAND	900						3.50
4.00				O				4.00
	Borehole terminated at 4.00m due to refusal							

Remarks: Percussion window sampling to 4.00m
Borehole closed below 2.00m
Borehole remained dry

Key: O Disturbed sample
Cv Shear vane
W Water sample

GEOINVESTIGATE Ltd.

Your Ref. FFR/111

Our Ref. G05232

BH No.7 Sheet No. 1 of 1

Location: Marske Site Services, Forty Foot Road, Middlesbrough

DATE: 06/10/05

Depth (m)	Description of Strata	Thickness	Legend	Sample	Test Type Result	Root Information	Depth to Water	Depth (m)
0.80	MADE GROUND Brownish black fine to coarse gravel. Gravel ls of ash and coal. Slight oil stain to 0.60m	800		O	Cv kN/m ²			0.50 0.80
	Borehole terminated at 0.80m due to refusal Possible services							

Remarks: Percussion window sampling to 0.80m

Key: O Disturbed sample
Cv Shear vane
W Water sample

Validated



Preliminary



ALcontrol Geochem Analytical Services

ISO 17025 accredited

M MCERTS accredited

* Subcontracted test

» Shown on prev. report

Table Of Results

Job Number: 05/15064/02/01
 Client: Geoinvestigate Ltd.
 Client Ref. No.: G05232

Matrix: SOLID
 Location: FORTY FOOT ROAD, MIDDLESBROUGH
 Client Contact: Stuart Howe

Sample Identity	BH1	BH2	BH3	BH3	BH4	BH5	BH6	BH6	BH7	Method Code	LoD/Units
Depth (m)	1.0	2.5	1.0	1.5	1.0	2.0	0.5	3.0	0.5		
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL		
Sampled Date											
Sample Received Date	10.10.05	10.10.05	10.10.05	10.10.05	10.10.05	10.10.05	10.10.05	10.10.05	10.10.05		
Batch	1	1	1	1	1	1	1	1	1		
Sample Number(s)	1	2	3	4	5	6	7	8	9		
Total Sulphate	1565	1196	-	3801	395	1018	1833	1329	1049	TM148	<50 mg/kg
Boron Water Soluble	2	9	-	2	<1	2	1	12	<1	TM129 ^M	<1 mg/kg
Arsenic	53	12	-	31	3	11	60	16	27	TM129 ^M	<1 mg/kg
Cadmium	<1	<1	-	<1	<1	<1	<1	<1	<1	TM129 ^M	<1 mg/kg
Chromium	88	42	-	103	54	48	99	42	70	TM129 ^M	<1 mg/kg
Copper	239	21	-	38	19	18	202	19	100	TM129 ^M	<1 mg/kg
Lead	302	63	-	59	4	50	133	46	151	TM129 ^M	<1 mg/kg
Mercury	<1	<1	-	<1	<1	<1	<1	<1	<1	TM129 ^M	<1 mg/kg
Nickel	34	27	-	42	11	17	45	29	43	TM129 ^M	<1 mg/kg
Selenium	<3	<3	-	<3	<3	<3	<3	<3	<3	TM129 ^M	<3 mg/kg
Zinc	598	170	-	151	63	139	394	135	540	TM129 ^M	<1 mg/kg
Water Soluble Sulphate as SO42-1 Extract	0.063	0.090	-	0.786	0.017	0.155	0.118	0.076	0.065	TM098 ^M	<0.003 g/l
Acid Soluble Sulphide	<50	209	-	<50	<50	71	216	168	85	TM105 ^M	<50 mg/kg
Phenols Total Monohydric	<0.01	<0.01	-	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	TM062 ^M	<0.01 mg/kg
Total Cyanide	<1	<1	-	<1	<1	<1	<1	<1	<1	TM153 ^M	<1 mg/kg
Asbestos Presence Screen	-	NFD	-	NFD	-	-	NFD	-	-	TM001	NONE
Elemental Sulphur	<50	262	-	52	<50	95	64	784	<50	TM136 ^M	<50 mg/kg
pH Value	8.70	7.71	-	7.76	8.20	9.05	8.75	5.49	8.82	TM133 ^M	<1.00 pH Units
EPH (DRO) (C10-C40)	-	-	60	-	40	-	1601	-	533	TM061 ^M	<1 mg/kg
Mineral Oil	-	-	60	-	<1	-	490	-	228	TM061 ^M	<1 mg/kg
GRO (C4-C10)	-	-	91	-	<10	-	29	-	<10	TM089 ^M	<10 ug/kg
GRO (C10-C12)	-	-	<10	-	<10	-	<10	-	<10	TM089 ^M	<10 ug/kg
Benzene	-	-	<10	-	<10	-	<10	-	<10	TM089 ^M	<10 ug/kg
Toluene	-	-	40	-	<10	-	29	-	<10	TM089 ^M	<10 ug/kg
Ethyl benzene	-	-	<10	-	<10	-	<10	-	<10	TM089 ^M	<10 ug/kg
m & p Xylene	-	-	<10	-	<10	-	<10	-	<10	TM089 ^M	<10 ug/kg
o Xylene	-	-	<10	-	<10	-	<10	-	<10	TM089 ^M	<10 ug/kg
MTBE	-	-	<10	-	<10	-	<10	-	<10	TM089 ^M	<10 ug/kg
PAH Total	22	<10	-	<10	<10	15	125	<10	31	TM154 ^M	<10 mg/kg

All results expressed on a dry weight basis.

Date 28.10.2005

Validated



Preliminary



ALcontrol Geochem Analytical Services

Table Of Results

ISO 17025 accredited

M MCERTS accredited

* Subcontracted test

» Shown on prev. report

Job Number: 05/15064/02/01
 Client: Geoinvestigate Ltd.
 Client Ref. No.: G05232

Matrix: LEACHATE
 Location: FORTY FOOT ROAD, MIDDLESBROUGH
 Client Contact: Stuart Howe

Sample Identity	BH1	BH4	BH5							Method Code	LoD/Units
Depth (m)	1.0	1.0	2.0								
Sample Type	SOIL	SOIL	SOIL								
Sampled Date											
Sample Received Date	10.10.05	10.10.05	10.10.05								
Batch	1	1	1								
Sample Number(s)	1	5	6								
Arsenic Dissolved (NRA) (ICP-MS)	6	<1	4							TM152 [#]	<1 ug/l
Boron Dissolved (NRA) (ICP-MS)	<10	18	49							TM152 [#]	<10 ug/l
Cadmium Dissolved (NRA) (ICP-MS)	<0.4	<0.4	<0.4							TM152 [#]	<0.4 ug/l
Chromium Dissolved (NRA) (ICP-MS)	2	2	2							TM152 [#]	<1 ug/l
Copper Dissolved (NRA) (ICP-MS)	12	4	9							TM152 [#]	<1 ug/l
Lead Dissolved (NRA) (ICP-MS)	2	2	2							TM152 [#]	<1 ug/l
Nickel Dissolved (NRA) (ICP-MS)	3	1	3							TM152 [#]	<1 ug/l
Selenium Dissolved (NRA) (ICP-MS)	<1	<1	3							TM152 [#]	<1 ug/l
Zinc Dissolved (NRA) (ICP-MS)	25	40	19							TM152 [#]	<3 ug/l
Mercury Dissolved (NRA) (CVAA)	<0.05	<0.05	<0.05							TM127 [#]	<0.05 ug/l
Sulphide (NRA)	<0.5	<0.5	<0.5							TM101 [#]	<0.5 mg/l
Sulphate (NRA)	6	<3	43							TM098 [#]	<3 mg/l
Phenols Total Monohydric (NRA)	<0.01	<0.01	<0.01							TM062 [#]	<0.01 mg/l
Total Cyanide (NRA)	<0.05	<0.05	<0.05							TM153 [#]	<0.05 mg/l
Free Sulphur (NRA)	<0.05	<0.05	<0.05							TM136 [#]	<0.05 mg/l
pH (NRA)	7.91	7.73	8.66							TM133 [#]	<1.00 pH Units

Date 28.10.2005

All results expressed on a dry weight basis.

[illegible]

Mineral Oil :- Aliphatic compounds in the range C10-C40 which are not retained on Silica.

All results expressed on a dry weight basis.

Extractable Petroleum Hydrocarbons (formally Diesel Range Organics) :- Any compound extractable in n-hexane within the carbon range C10-C40, includes Aliphatic (Min Oil), Aromatic (PAHs) and naturally occurring compounds.

6. Hazardous Gas

Much of the fill materials that underlie the site to a depth of 3.00 m comprise essentially granular wastes including ash, coal, stone and rubble. In general materials of this nature would not be expected to generate large quantities of methane gas though carbon dioxide levels may be elevated. However there remains the possibility of organic materials occurring in the fill capable of producing methane and gases may also migrate through this permeable deposit from the underlying former marsh or from adjacent areas. Consequently in the absence of gas monitoring at the site, there remains a possible gas risk.

REPORT

ON

PHASE 1

DESK STUDY

AT Development Site, Forty Foot Road,
Middlesbrough

IN February 2011

Note date corrected

FOR Harkin Associates

YOUR REF.

OUR REF. G11025

Our Ref. **G11025** Your Ref.

10 February 2011

Mr E Castle
Harkin Associates
Britannia House
Suite 15 Brignall Road
Middlesbrough
TS2 1PS

Dear Sirs

Re: Site Investigation, Forty Foot Road, Middlesbrough

1. Introduction

In accordance with your instruction Geoinvestigate Ltd has carried out a Phase 1 desk top study at the above property which it is understood was for a many years part of a large iron foundry adjacent to the River Tees.

The purpose of the Phase 1 Desk Study investigation was to obtain historical land use data and likely current ground conditions on the site in order to provide a qualitative contamination and gas risk assessment based. This will allow a targeted and relevant Phase 2 investigation to be designed and carried out if deemed necessary by the desk study findings.

A limited investigation has previously been carried out by Geoinvestigate Ltd in a report issued in October 2005 (ref: G05232).

The site is no longer a foundry and many of the buildings have recently been demolished as the site is redeveloped to be used as a new Biofuel facility. A site plan and location plan of the proposed development are included in the appendices of this report.

2. Scope of Phase 1 Investigation

The investigation comprised a review of the following information;

- An extract from the 1:50,000 Solid & Drift geological map (BGS Sheet 33 Stockton).

- Observations from a walkover study carried out by Mr Stuart Howe of Geoinvestigate Ltd on 7 February 2011.
- Historical OS maps of various scales dating back to 1857.
- A review of a Sitecheck environmental data search report.

The Sitecheck environmental data search and historical OS maps are included in the report appendices.

3. Desk Study

3.1 Anticipated Geology

The extract from the 1:50,000 Solid and Drift Geology map (BGS Sheet 33 – Stockton) indicates the site to be underlain by unknown thicknesses of Made Ground then Post Glacial Marine Alluvium on top of an unknown thickness of Glacial Laminated Clay.

The underlying bedrock is anticipated to be mudstones and marls of the Triassic Mercia Mudstone Group (MMG).

Two normal faults are shown to the southwest of the site, running parallel from southwest to northeast. The downthrown section is towards the centre of the two faults.

3.2 Historical OS Maps

Historical maps covering the period 1857 to 2010 were obtained for the site and these have been reviewed in order to look for potential sources of risk to the site.

3.2.1 1857

The map of 1857 shows the site was originally part of the Newport Marshes within a meander loop of the River Tees that lies some 500m from the property. Port Darlington lay some distance to the north east of the site and included Potent Fuel Works and Teesside Iron Works.

A railway line named “The Old Branch” ran along the south-eastern site boundary.

3.2.2 1895 - 1899

By 1895, the site and surrounding area had been highly developed. The site itself appears to be occupied by a combination of railway sidings and a spoil heap.

Immediately adjacent to the site are further rail sidings and branch lines, which connect a multitude of iron and steel foundries and processing plants. These include the Newport Wire Works, Wellington Cast Steel Foundry, Marsh Engine Works, Ayrton Rolling Mills, Acklam Foundry (iron), Tees Side Iron Works and West Marsh Brass Works,

In addition, non iron and steel industries were located within 250m of the site. A brick works (Warnecliffe Ganister Brick Works) was located some 200m to the north and a Goods Station, Manure Shed, Coal Depot and Gasometer were situated some 200m to the east of the site.

A large water feature or pond is present in the northern part of the site adjacent to Acklam Foundry.

More distantly from the site (more than 250m), terraced residential developments are shown towards the centre of Middlesbrough town.

3.2.3 1915 - 1929

By the maps of this period, much of the industry shown on the map of 1895 remained. However it appears that the Tees Side Iron Works to the northeast of the site had been demolished and cleared.

The site itself contains more railway lines and some large buildings, assumed to be associated with the nearby Iron and Steel works. "Tanks" are annotated in the far northern end of the site.

Within 250m of the site, it more railway lines have been built and additional works and factories have been built in the form of the Corporation Electricity Works (on the site of the gasometer of 1895) to the east and a Slag and Concrete Works to the southwest.

The water feature noted to the north of the site appears to be smaller than in 1895.

3.2.4 1938

No significant changes are shown on the map of 1938.

3.2.5 1952 - 1958

Very little significant changes are shown on the maps of this period.

The site remains very similar to as it was in 1929, with a mix of railway sidings and buildings associated with the Iron and Steel mills occupying the site.

Within 250m of the site, the steel rolling mills and foundries remain, though they appear to have increased in size and a number of electricity sub stations are annotated within the factory complexes.

3.2.6 1966 – 1975

No significant changes are shown on the maps of this period.

3.2.7 1983 - 1997

This period shows a rationalisation of the iron and steel industry in the areas surrounding the site.

The site itself no longer contains any railway lines, but remains bordered by a mix of railway sidings and steel works' buildings. Some foundry buildings still occupy the northern end of the site.

More distant from the site, a new 'Riverside Park' industrial estate is shown on the maps post 1987 to the north.

3.2.8 2000 – 2010

Few changes are shown on the maps during this period.

It appears however that some buildings have been cleared from northern end of the site.

In addition new industrial units and business parks are shown to the west of the site on what had been derelict land in the 1980s.

3.2.9 Historical Maps Summary

In summary, the historical map record indicates that the site has formed part of a railway track-bed and been used in connection with the iron and steel industry since the late 1800s. It may have been used as a tipping area for waste during the late 1800s and early part of the 1900s and has contained a number of tanks and warehouses also associated with the iron and steel industry.

Much of the land within 250m of the boundaries of the site appears to have been used in the production and processing of iron and steel, with many foundries, mills and works indicated on the map record. The railway infrastructure in the area was also very extensive, with lines covering large areas, serving the many iron and steel locations.

Other industries were present in this area in the form of brick works, concrete and slag works and engine works and other contaminative land uses within 250m included gasometers, electrical sub stations and infilled ponds.

Potential sources of contamination at the site would be therefore be expected to be connected with the concentration of iron and steel works, railways and other industrial works in the area and a substantial horizon of made ground would be anticipated to be present at the site.

In light of the historical map information, the risk of contamination arising from an internal source would be considered to be High and the risk of contamination from a nearby external source is also assessed as High.

Potential sources of hazardous gas (CO₂ and CH₄) have been identified within 250m of the site, with at least one (1) in-filled pond having been identified close to the north end of the site from the historical map record and the made ground horizon at the site would be anticipated to contain material capable of generating hazardous gases.

In addition, the natural land prior to the development of industry in the area was a marsh, which may contain naturally generated gases.

Therefore the hazardous gas risk to the development from an internal or a nearby external source is assessed to be High.

With regard to installing new foundations for the new development, the presence of marsh land prior to the reclamation of land for use in industry may mean that extensive weak and soft ground may be present and buried substantial foundations formerly belonging to the foundry buildings may also remain beneath the site.

3.3 Sitecheck Environmental Data Search

The Sitecheck Report provides listings of potentially contaminative current and past land use together with possible pathways and receptors and other environmental considerations such as radon gas, mining and flood risks etc.

3.3.1 Current Land Use (Source)

Briefly the Sitecheck Report found that the property might potentially fall within a contaminative area (Sources, Summary Table and pages 3-4, and 7-12) because there are forty six (46) potentially contaminative land uses listed within 250m of the site.

The current potentially contaminative land uses within 250m of the site comprise six (6) Waste / Landfill Sites, five (5) Statutory Authorisations, two (2) Discharge Consents, two (2) Industrial Processes, a single (1) Storage of Hazardous Substances, two (2) Contraventions and twenty eight (28) Contemporary Trade Directory entries.

3.3.2 Historical Land Use (Source)

The Sitecheck Report also found that the property might potentially fall within a contaminative area (Sources, Summary Table and pages 4 and 13-18) because of (80) past land uses on or adjacent to the site.

The historical potentially contaminative land uses comprised fifty five (55) Historical Tanks and Energy Facilities including two (2) on site, nine (9) Potentially Contaminative Industrial Uses (metal casting, machinery railways etc) including three (3) on site and sixteen (16) Potentially Infilled Land including a single (1) marsh and fifteen infilled water features.

3.3.3 Sensitivity (Pathways and Receptors)

With respect to groundwater vulnerability (Summary Table and pages 5 and 19 to 21) the report states that the site is within an area of groundwater vulnerability with a geological

classification of Non Aquifer (Negligibly permeable). The soil deposits are not classified and no drift deposits are noted.

The report states that the site is within an area of extreme flooding and flooding from rivers or sea without flood defences.

There are no flood defences or flood water storage areas in place for the site.

There are no surface water features noted within 250m of the site.

No water abstraction points are shown within 250m of the site.

No other environmentally sensitive receptors or protected countryside areas are listed.

3.3.4 Other Factors (Geological)

With respect to mineral extraction, coal mining and quarrying (Summary Table and page 6 and 22) the report confirms that the site is in an area that may not be affected by coal mining and that non coal mining is no hazard.

Natural stability hazards on site (Summary Table and pages 6 and 22) with regard to collapsible and ground dissolution are regarded as no hazard and a low or very low hazard is assigned to the risks of compressible ground, landslide, running sand and shrinking or swelling clay.

With respect to the risk of natural radon emission from the ground (Other Factors, Summary Table and page 22) the report indicates that the site is not in a radon protective area and therefore NO special measures are necessary in the construction of new dwellings or extensions at this site.

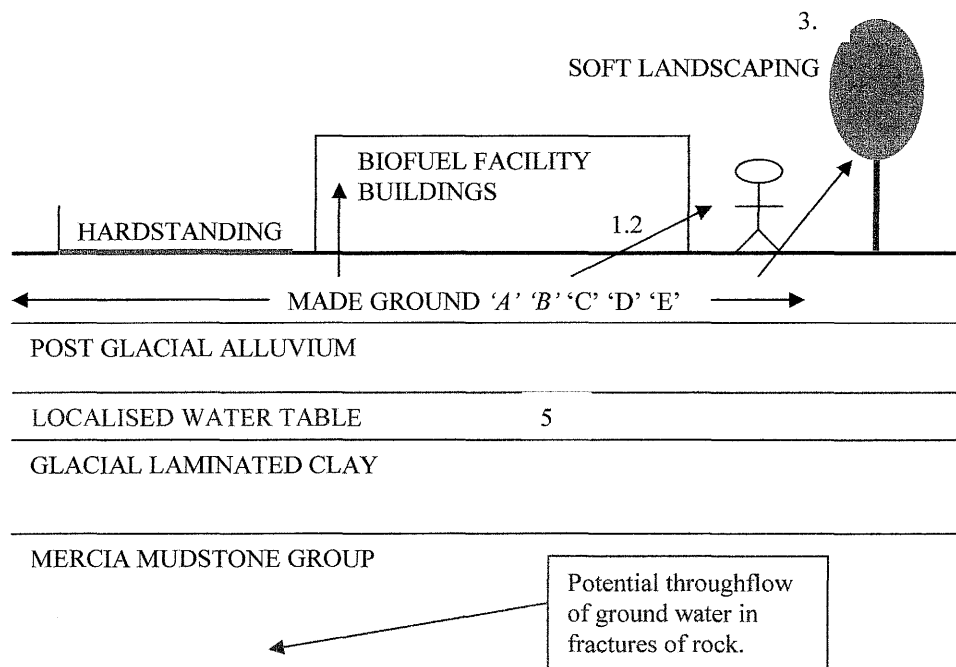
3.3.5 Sitecheck Environmental Data Search Summary.

The Sitecheck report suggests that a large number of potentially serious sources of contamination and hazardous gas may exist within the site or in close proximity to it. Consequently this environmental data report suggests that the potential for significant or extensive contamination to exist at the site would be High.

4. Walkover Survey Observations

The site currently comprises a redundant oil process and storage yard, with areas of hardstanding and storage.

The southern section of the site houses several old tank bases, together with associated concrete bunding and hardstanding. Other possible tank bases and areas of hardstanding have been broken up and stockpiled in areas to the east of the site. These stockpiles are some three metres high and four to five metres deep, occupying some sixty metres in length. Some plastic DPM and rebar were also noted within the stockpiled concrete. The remaining hardstanding in this area is currently being used for as a temporary lorry park.

Figure 1 – Conceptual Ground Hazard Model showing Sources, Pathways and Receptors**SOURCES**

A considerable covering of made ground is anticipated at the site and would provide the most plausible source of contamination at the site.

Potential contaminants in the made ground would be expected to be associated with:

- A Iron and Steel Industry (foundries, mills, works on site and <250m).*
- B Railway land on site and <250m.*
- C Tanks and substations on site and <250m.*
- D Gasometer <250m*
- E In-filled land on site and ,250m*

RECEPTORS and PATHWAY

- 1 End Users and Construction Workers through Direct Contact / Inhalation.
- 2 The Building and Supply Pipes through Direct Contact.
- 3 Plants and Trees through uptake.
- 4 Neighbouring Sites through lateral migration.
- 5 Ground water through downward migration.
(Controlled waters potentially in the MMG would not be considered at risk, the impermeable laminated clays would provide a barrier to downward migration of contaminants)

It is understood that hard-standing will cover the vast majority of the site, with only a small area of soft landscaping anticipated to the far northwest boundary of the site.

Table 1, Summary of Conceptual Ground Hazard Model

Potential Source	Nature of Hazard	Contaminants associated with source	Pathway	Receptor	Preliminary Risk Rating
Made Ground and some underlying Natural	Inorganic and organic chemical contaminants within soil.	Contaminants linked with iron and steel industry, railway land, tanks and substations, gasometers and in-filled land.	Direct contact (Ingestion of soil, Ingestion of dust, Dermal contact)	Site Operatives End Users Vegetation Controlled waters Structures and services	High
		Hazardous Gas (CO ₂ , CH ₄)	Inhalation	Site Operatives End Users	High
Unknown In-filled Ground	Hazardous Gas generation from potential organic waste in fill.	Hazardous gas (CO ₂ , CH ₄)	Inhalation	Site Operatives End Users	High

5.3 Contamination and Gas Risk

5.3.1 Contamination Risk

Former land uses on and near to the site may have lead to contamination being present within the made ground and near to surface natural ground.

It is unlikely though that the natural Alluvial material below the made ground would contain significant amounts of potentially harmful contaminants, though that and the made ground would provide a plausible pathway for the migration of contaminants into or out of the site.

The most plausible source of contamination to the site is from the iron and steel industry and railways that have used the site (storage of fuel, chemicals and maintenance of heavy machinery etc). The walkover study did however show the site in a favourable condition but given the likely ground conditions and amount of industry that has been present in the area for such a long period, the potential for harmful contamination to exist at the site is assessed to be High.

5.3.2 Hazardous Gas Risk

Made ground and underlying natural marshland at the site may contain material that could generate hazardous gas and unknown in-filled ground exists within 250m of the site.

The natural drift deposits are expected to be post glacial alluvium, therefore a high potential exists for gases to migrate into the site.

Therefore the potential for hazardous gas to occur is assessed to be High.

6. Desk Study Conclusions

6.1 Radon Measures

The Sitecheck report indicates that the new buildings require NO radon protection.

6.2 Foundations

The Sitecheck and desk study have indicated that the original natural land at the site was marshland and that an appreciable amount of made ground may be present at the site. In addition foundations of previous structures may still be present within the made ground at the site.

Therefore it is possible that traditional strip or pad footings may not be suitable in the construction of the new structures at the site. It may be that piled or raft foundations may need to be adopted in order to support the required loads.

6.3 Soakaways

Given the anticipated presence of made ground and potentially weak saturated post glacial alluvium followed by laminated clays below the site, it is likely that ground conditions would not be suitable for the construction of soakaways.

In addition, given the intended industrial setting of the new development, it would be advisable to capture all run off in order to stop the potential leaching of contaminants into the ground and surrounding area.

6.4 Contamination and Hazardous Gas

A qualitative risk assessment has been carried out to assess the risk of contamination to human health, controlled waters, the new structure and its supply lines and adjoining sites, examining the linkages between highlighted sources, pathways and receptors.

The risk of contamination to these receptors has been assessed to be High because of past land uses on or near to the site.

The risk with respect to Hazardous Gas has also been assessed as High, due to the potential presence of gas producing material within the made ground and the potential for gas migration into the site from unknown in-filled ground within 250m of the site.

7. Recommendations

The potential for harmful contamination and hazardous gas to exist at the site has been assessed to be High from a desk study and walkover inspection. Therefore a further Phase 2 investigation would be required at the site.

Geoinvestigate has already carried out a limited investigation at the site in 2005 (Our Ref G05232) and the findings of this survey were generally favourable. No significant contamination was uncovered and fill materials appeared generally granular with few materials thought capable of generating hazardous gases.

However it also indicated that further more targeted investigation work would be required. It was envisaged that a follow up investigation would include gas monitoring and further contamination testing, concentrating on areas where tanks have previously been identified.

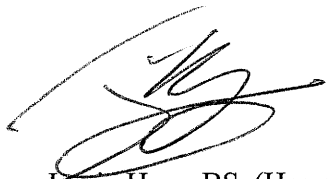
Therefore the following Phase 2 investigation has been designed to focus on the potential contaminants highlighted in the CGHM (Figure and Table 1) and taking into account Geoinvestigate's previous findings. As the potential for hazardous gas to exist at the site is High, a gas survey has been included also.

7.1 Scope of Phase 2 - Intrusive Site Investigation

- The sinking of sixteen (16) dynamic window sampling boreholes to depths up to 5 - 6.00m within the proposed footprints of the four (4) proposed buildings. (1. Security control, 2. Lobbied entrance with Site Office / Welfare Block, 3. Gas Drying and Desulphurisation Plant and 4. CHP Facility). These are for both geotechnical and contamination purposes.
- The installation of gas monitoring wells in eight (8) of the above boreholes.
- The sinking of twenty (20) dynamic window sampling boreholes to depths up to 5 - 6.00m within the footprints of the proposed fermentation and storage tanks. These are also for geotechnical and contamination purposes. No gas installations would be required in these.
- The sinking of twenty (20) shallow boreholes in the vicinity of the proposed roadways and hardstanding areas in order to obtain samples for contamination analyses.
- Six (6) gas monitoring visits over a period of three (3) months, including readings below 1000mb and where possible following a sharp drop in atmospheric pressure.
- Excavation of four cable percussion boreholes to depths of 15.00m – 20.00m to provide information on anticipated piled foundation design.
- Contamination analyses of up to one hundred and twenty (120) samples recovered from the excavations to confirm that metals, Asbestos, pesticides and speciated TPH and PAH are absent. (chemical analyses to be based on findings of CGHM and look for potential associated contaminants associated with the iron and steel industry, railway land, fuel tanks and in-filled land).. Leachate from up to sixty (60) samples to be tested also to examine the potential for the underlying groundwater to be affected also
- Provision of a factual and interpretative report including site plan, borehole logs, results of contamination analyses and gas measurements and provide advice on foundation type and any remediation/validation that may be necessary.

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Issued on behalf of GEOINVESTIGATE LIMITED by



Jamie Hogg BSc(Hons) FGS
Geotechnical Engineer



Ross Nicolson BSc(Hons) MSc(Eng) CEng MIMM
Principal Geotechnical Engineer

HISTORICAL OS MAPS

Historical Mapping Legends

Ordnance Survey County Series and Ordnance Survey Plan 1:10,560

Gravel Pit	Sand Pit	Other Pits
Quarry	Shingle	Orchard
Oysters	Reeds	Marsh
Mixed Wood	Deciduous	Bushwood
Fir	Furze	Rough Pasture
Arrow denotes flow of water	Trigonometrical Station	Bench Mark
Site of Antiquities	Well, Spring, Boundary Post	Signal Post
Surface Level		
Sketched Contour	Instrumental Contour	
Main Roads	Minor Roads	Raised Road
Sunken Road	Railway over River	Level Crossing
Road over Railway	Railway over Road	Road over Stream
Road over Canal	Road over Stream	
County Boundary (Geographical)	County & Civil Parish Boundary	Administrative County & Civil Parish Boundary
County Borough Boundary (England)	County Borough Boundary (Scotland)	Rural District Boundary
R.D. Bay		

Ordnance Survey Plan 1:10,000

Chalk Pit, Clay Pit or Quarry	Gravel Pit	Disused Pit or Quarry	Lake, Loch or Pond	Boulders	Non-Confiscatory Trees
Sand Pit	Refuse or Slag Heap	Dunes	Coniferous Trees	Orchard	Bracken
Marsh	Reeds	Saltings	Direction of Flow of Water	Shingle	Sand
Building	Glasshouse	Sloping Masonry	Pylon	Electricity Transmission Line	Pole
Cutting	Embankment	Standard Gauge Multiple Track	Standard Gauge Single Track	Siding, Tramway or Mineral Line	Narrow Gauge
Road Under	Road Over	Level Crossing			
Geographical County	Administrative County, County Borough or County of City	Municipal Borough, Urban or Rural District, Borough, Borough or County Constituency	Civil Parish		
Shown alternately where coincidence of boundaries occurs					
BP, BS	Boundary Post or Stone	Police Station	Police Station	Police Station	Police Station
Ch	Church	PO	Public Office	Public Office	Public Office
CH	Club House	PC	Public Convenience	Public House	Public House
F E Sta	Fire Engine Station	PH	Public House	Signal Box	Signal Box
FB	Foot Bridge	SB	Spring	Spring	Spring
Fn	Fountain	TCB	Telephone Call Box	Telephone Call Box	Telephone Call Box
GP	Guide Post	TCP	Telephone Call Post	Telephone Call Post	Telephone Call Post
MP	Mail Post	W	Well	Well	Well
MS	Mile Stone				

1:10,000 Raster Mapping

Gravel Pit	Refuse tip or slag heap	Rock (scattered)	Boulders (scattered)	Mud	Sand Pit	Top of cliff
Rock	Underground detail	Overhead detail	Multi-track railway	County boundary (England only)	District, Unitary, Metropolitan, London Borough boundary	Area of wooded vegetation
Boulders	Shingle	Sand	Slopes	Confiscatory trees (scattered)	Confiscatory trees	Positioned tree
Orchard	Rough Grassland	Scrub	Water feature	Mean high water (springs)	Mean low water (springs)	Electricity transmission line (with poles)
Telephone line (where shown)	Bench mark (where shown)	Point feature (e.g. Guide Post or Mile Stone)	Site of (antiquity)	General Building		

Ordnance Survey mapping included:

Mapping Type	Scale	Date	Pg
Yorkshire	1:10,560	1857	3
Durham	1:2,500	1857 - 1895	4
Durham	1:10,560	1899	5
Yorkshire	1:2,500	1895	6
Yorkshire	1:2,500	1895	7
Yorkshire	1:10,560	1899	8
Durham	1:2,500	1899	9
Durham	1:2,500	1899	10
Yorkshire	1:2,500	1916	11
Durham	1:2,500	1917 - 1918	12
Yorkshire	1:10,560	1920	13
Durham	1:10,560	1923	14
Yorkshire	1:2,500	1929	15
Yorkshire	1:10,560	1938	16
Durham	1:10,560	1938	17
Durham	1:2,500	1939	18
Ordnance Survey Plan	1:1,250	1952 - 1953	19
Ordnance Survey Plan	1:2,500	1953 - 1954	20
Ordnance Survey Plan	1:10,560	1954	21
Ordnance Survey Plan	1:1,250	1963 - 1971	22
Ordnance Survey Plan	1:2,500	1966 - 1970	23
Additional SIMs	1:2,500	1966	24
Ordnance Survey Plan	1:1,250	1969 - 1969	25
Supply of Unpublished Survey Information	1:1,250	1973	26
Ordnance Survey Plan	1:10,000	1975	27
Additional SIMs	1:1,250	1980 - 1985	28
Ordnance Survey Plan	1:1,250	1984	29
Additional SIMs	1:1,250	1985 - 1989	30
Ordnance Survey Plan	1:10,000	1987	31
Additional SIMs	1:1,250	1990 - 1991	32

Order Details

Order Number: 33761560_2_1
Customer Ref: G11025
National Grid Reference: 448870_521010
Site Area (Ha): 1.3

Site Details

BF Biogas Site, Forty Foot Road, Middlesbrough, TS2 1HG



Tel: 0844 844 5956
Fax: 0844 844 5951
Web: www.envisiwork.co.uk

Large-Scale National Grid Data	1:1,250	1992	33
Ordinance Survey Plan	1:10,000	1993	34
Large-Scale National Grid Data	1:1,250	1994 - 1997	35
Large-Scale National Grid Data	1:1,250	1996	36
10K Raster Mapping	1:10,000	2000	37
10K Raster Mapping	1:10,000	2005	38
10K Raster Mapping	1:10,000	2010	39

Order Details

Order Number: 33761560_2_1
Customer Ref: G11025
National Grid Reference: 448870_521010
Site Area (Ha): 1.3

Site Details

BF Biogas Site, Forty Foot Road, Middlesbrough, TS2 1HG

Historical Mapping Legends

Ordnance Survey County Series and
Ordnance Survey Plan 1:2,500

Ordnance Survey Plan, Additional SIMs and
Supply of Unpublished Survey Information
1:2,500 and 1:1,250

Large-Scale National Grid Data 1:2,500 and
1:1,250

Order Details

Order Number: 33761560_2_1
Customer Ref: G11025
National Grid Reference: 448870_521010
Site Area (Ha): 1.3

Site Details

BF Blosgas Site, Forty Foot Road, Middlesbrough, TS2 1HG

Yorkshire

Published 1857

Source map scale - 1:10,560

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1838, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1840's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

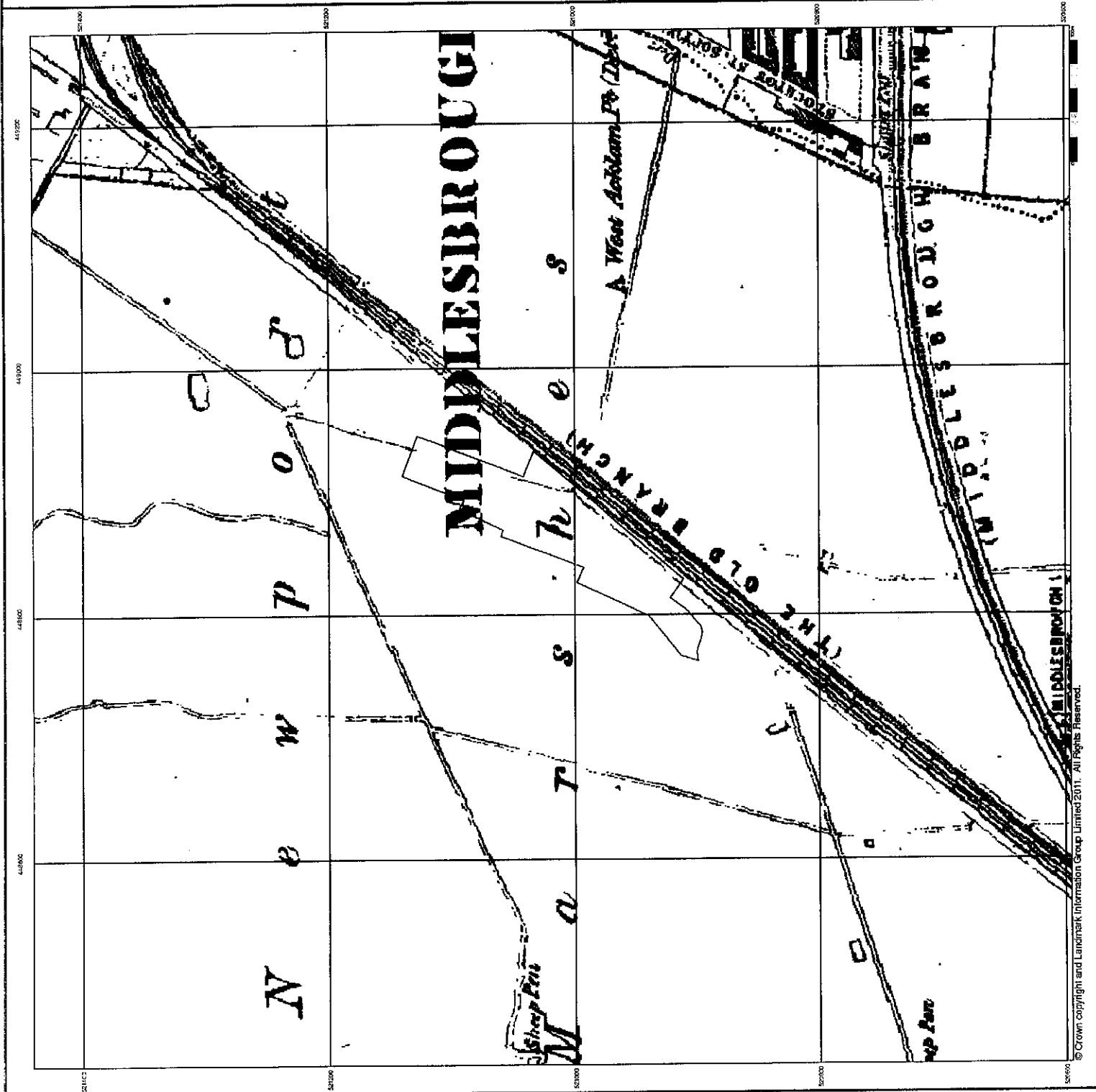
016_00
1857
1:10,560

Order Details

Order Number: 33761560_2_1
Customer Ref: G11025
National Grid Reference: 448870_521010
Site Area (Ha): 1.3

Site Details

BF Bogas Site, Forty Foot Road, Middlesbrough, TS2 1HG



Durham

Published 1857 - 1895

Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1939, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)

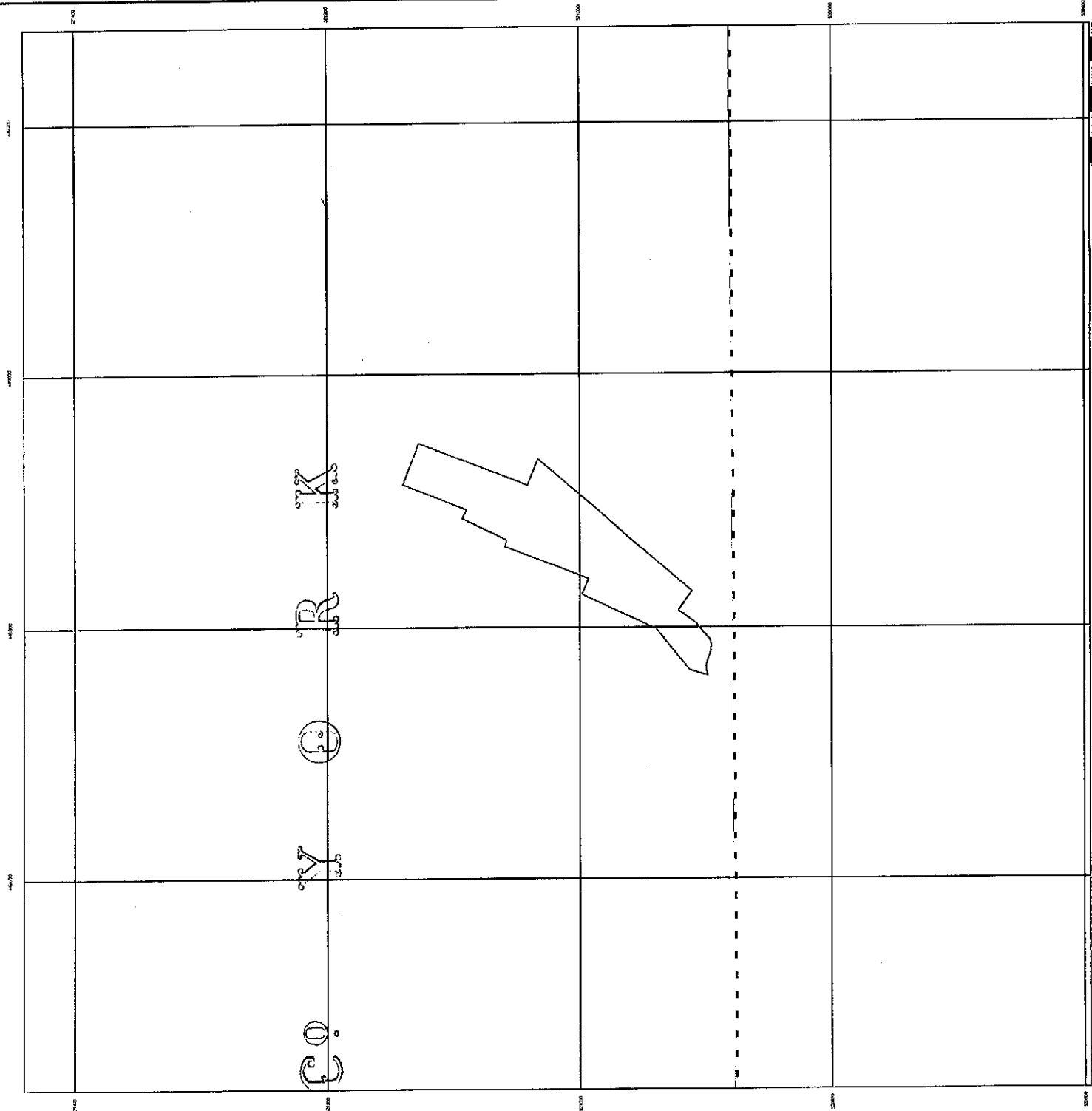
OS 06	1857	1:2,500
OS 10	1885	1:2,500

Order Details

Order Number: 33761560_2_1
Customer Ref: G11025
National Grid Reference: 448870_521010
Site Area (Ha): 1.3

Site Details

BF Bogas Site, Forty Foot Road, Middlesbrough, TS2 1HG



Durham
Published 1859
Source map scale - 1:10,560

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1940's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

OS 00
1859
/ 1:10,560

Order Details

Order Number: 33761560_2_1
Customer Ref: G11025
National Grid Reference: 448870_521010
Site Area (Ha): 1.3

Site Details

BF Biogas Site, Forty Foot Road, Middlebrough, TS2 1HG

Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held in the Ordnance Survey archive. The first map, published in 1854, was the 1:250,000 scale adopted for England, Wales and Scotland in the 1840s. In 1854 the 1:50,000 scale was adopted for mapping urban areas and by 1896 it was used to cover the whole of what were considered to be the cultivated parts of Great Britain. The published data given below is often some years later than the surveyed data. Before 1939, all OS maps were based on the Cassini projection, with independent surveys of a single county or group of counties giving rise to significant inaccuracies in outlying areas.

006 10 1895 12,500	006 14 1895 12,500
--------------------------	--------------------------

Order Number: 33761560_2_1
Customer Ref: G11025
National Grid Reference: 448870_521010
Site Area (Ha): 1.3

BBF Biogas Site, Forty Foot Road, Middlesbrough, TS2 1HG

LANDMARK®
Information Group

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Fax: 0344 844 9951
Web: www.environet.co.uk

A Landmark Information Group Service v42.0 03-Feb-2011 Page 7 of 32



Durham
Published 1895
Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1886 it covered the whole of what was considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)

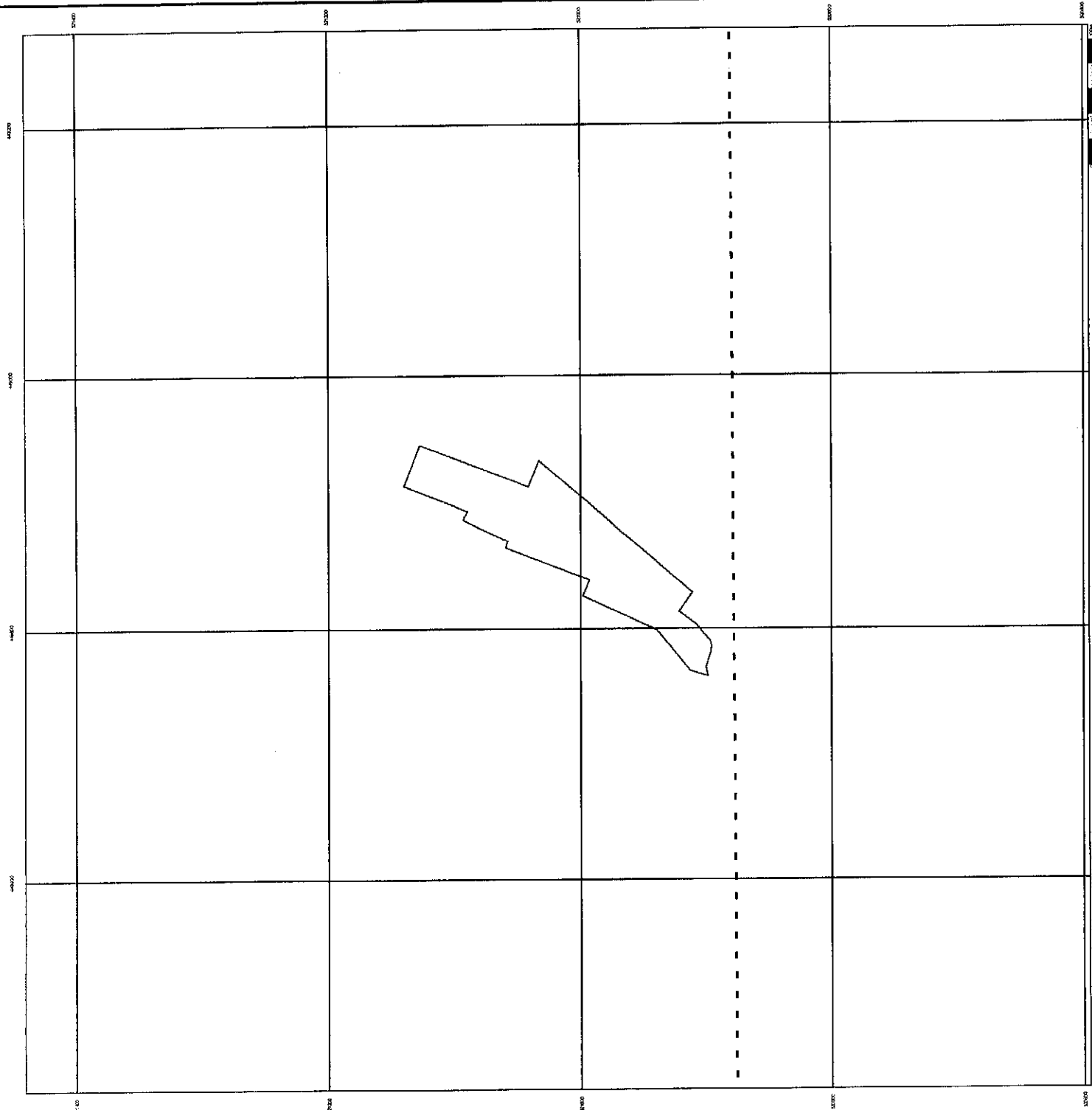


Order Details

Order Number: 33761560_2_1
Customer Ref: G11025
National Grid Reference: 448870 521010
Site Area (Ha): 1.3

Site Details

BF Biogas Site, Forty Foot Road, Middlesbrough, TS2 1HG



Yorkshire

Published 1895

Source map scale - 1:10,560

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1858, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1840's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

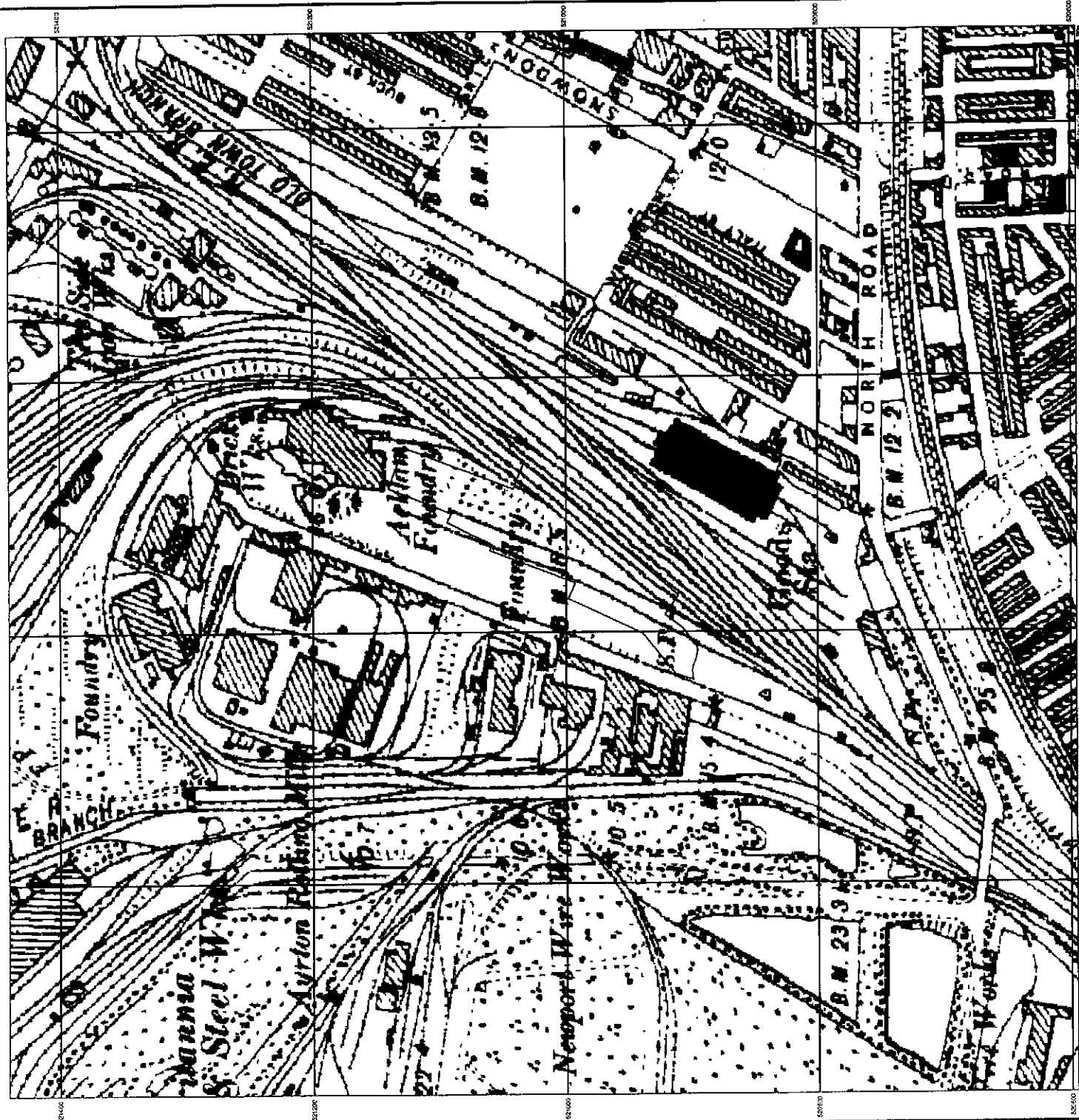
OS SW
1895
1:10,560

Order Details

Order Number: 33761560_2_1
Customer Ref: G11025
National Grid Reference: 448870_521010
Site Area (Ha): 1.3

Site Details

BF Biogas Site, Forty Foot Road, Middlesbrough, TS2 1HG



Durham
Published 1899
Source map scale - 1:10,560

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published data given therefore is often some years later than the surveyed data. Before 1838, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

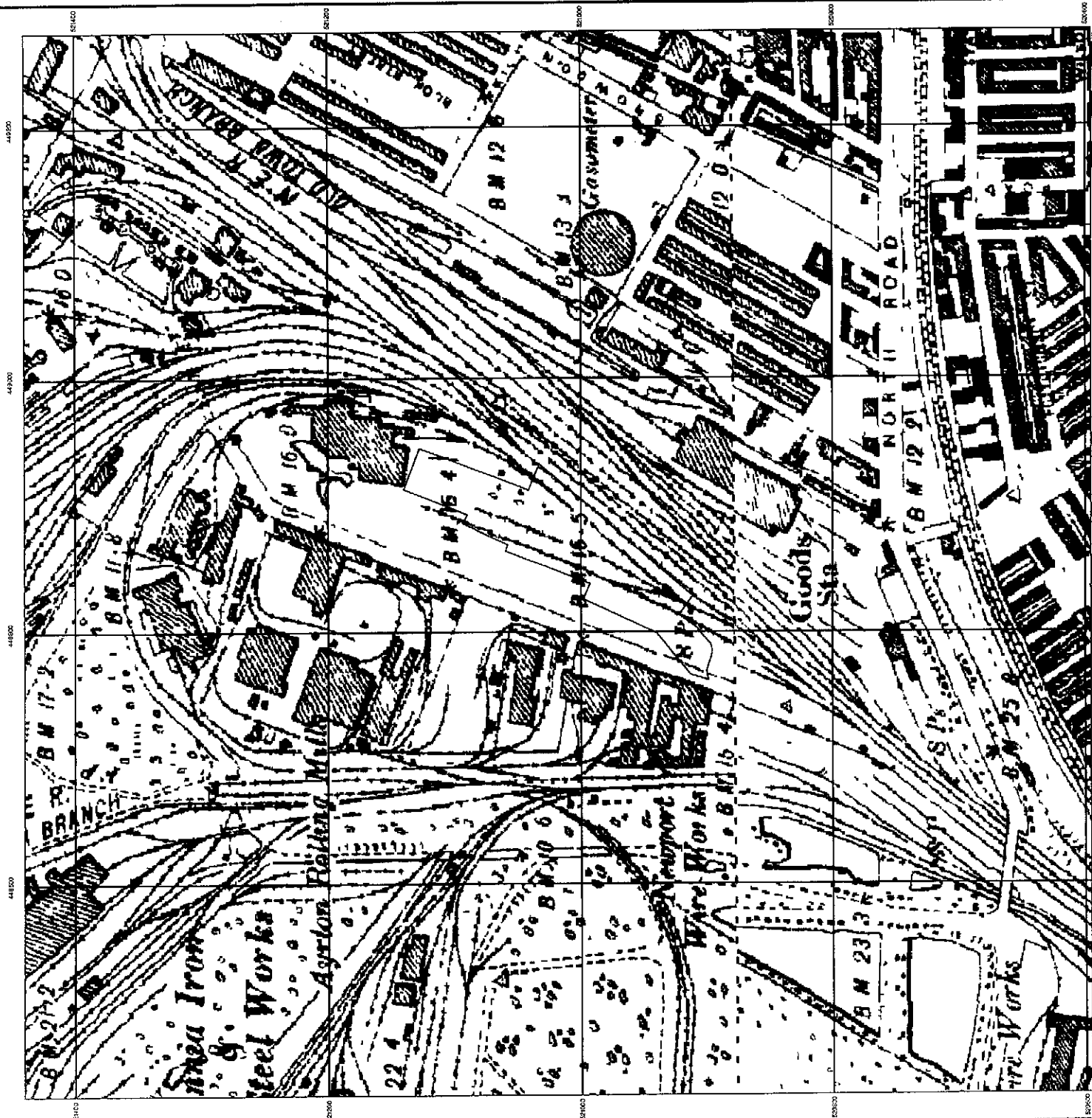
OS1 NW	1899
1:10,560	
OS1 SW	1899
1:10,560	

Order Details

Order Number: 33761560_2_1
Customer Ref: G11025
National Grid Reference: 448870_521010
Site Area (Ha): 1.3

Site Details

BF Biogas Site, Forty Foot Road, Middlesbrough, TS2 1HG



Durham
Published 1899
Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1899 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)

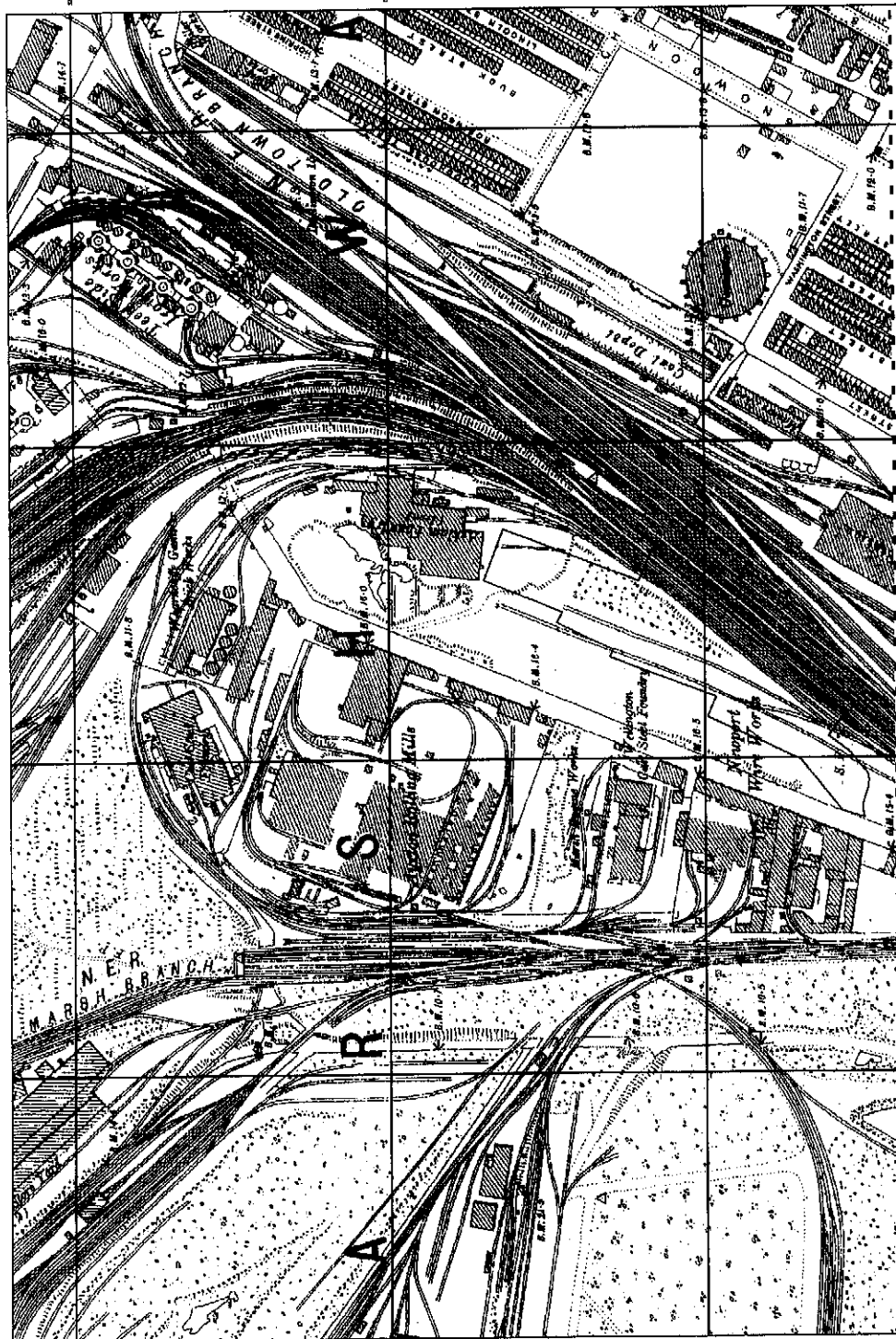
OS 06	1899	12,500
OS 10	1899	12,500

Order Details

Order Number: 33761560_2_1
Customer Ref: G11025
National Grid Reference: 448870_521010
Site Area (Ha): 1.3

Site Details

BF Biogas Site, Forty Foot Road, Middlesbrough, TS2 1HG



Yorkshire

Published 1915

Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)

005 10	1915	1:2,500
005 14	1915	1:2,500

Order Details

Order Number: 33761560_2_1
Customer Ref: G11025
National Grid Reference: 448870_521010
Site Area (Ha): 1.3

Site Details

BF Biogas Site, Forty Foot Road, Middlesbrough, TS2 1HG





A Landmark product

Durham

Published 1917 - 1918

Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly used at the time adopted in England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for urban areas and by 1856 it covered the whole of the country. The maps were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1858, all OS maps were based on the Cassini projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)

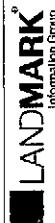
OS 1:2,500	1918
OS 1:2,500	1918
OS 1:2,500	1918

Order Details

Order Number: 33761560_2_1
Customer Ref: G11025
National Grid Reference: 448870_521010
Site Area (Ha): 1.3

Site Details

BF Biogas Site, Forty Foot Road, Middlesbrough, TS2 1HG



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Web: www.earthcheck.co.uk

Yorkshire

Published 1920

Source map scale - 1:10,560

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published data given therefore is often some years later than the surveyed data. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

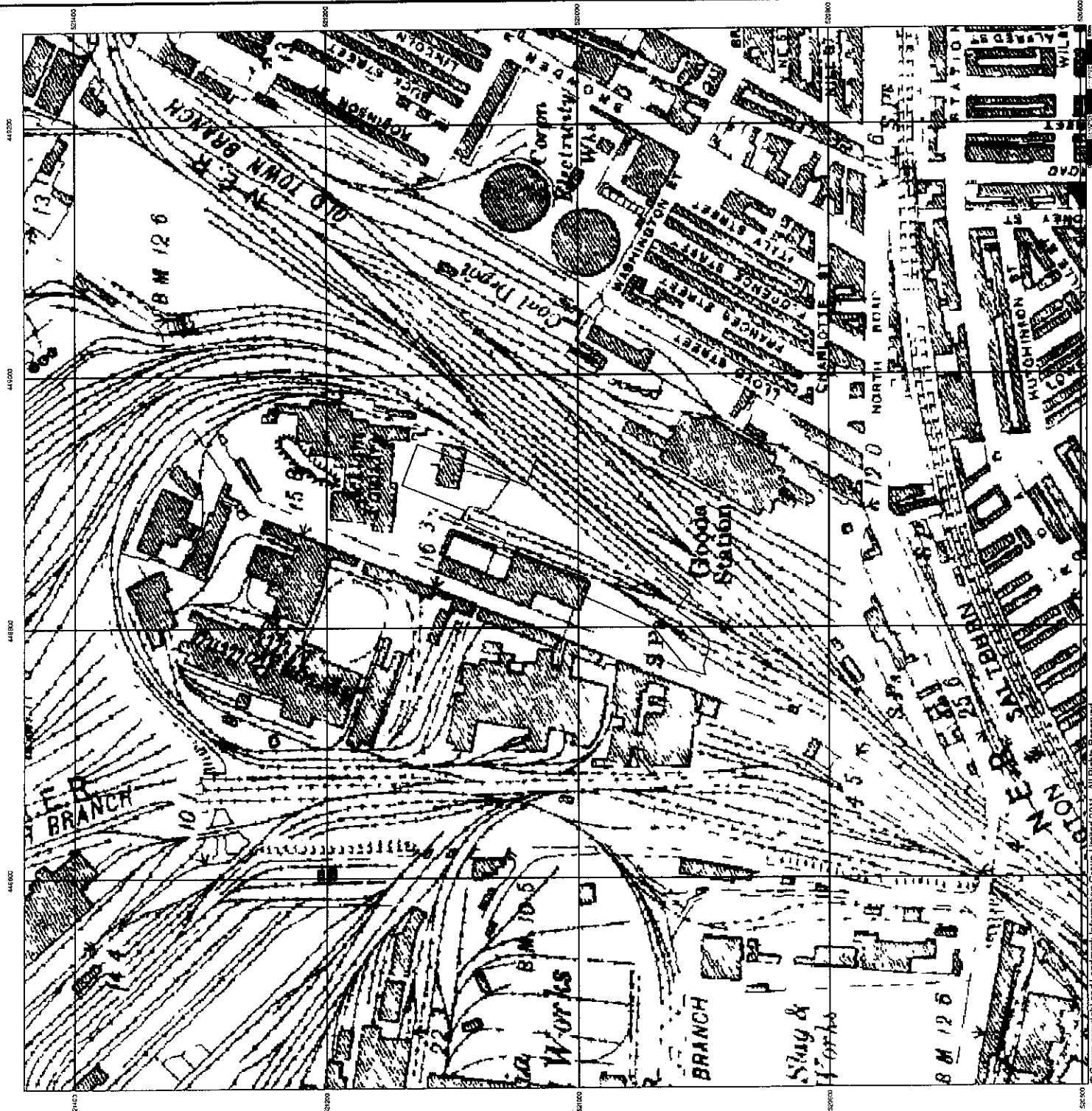
006 SW
1920
1:10,560

Order Details

Order Number: 33761560_2_1
Customer Ref: G11025
National Grid Reference: 448870_521010
Site Area (Ha): 1.3

Site Details

BF Biogas Site, Forty Foot Road, Middlesbrough, TS2 1HG



Durham
Published 1923
Source map scale - 1:10,560

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1940's. In 1954 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

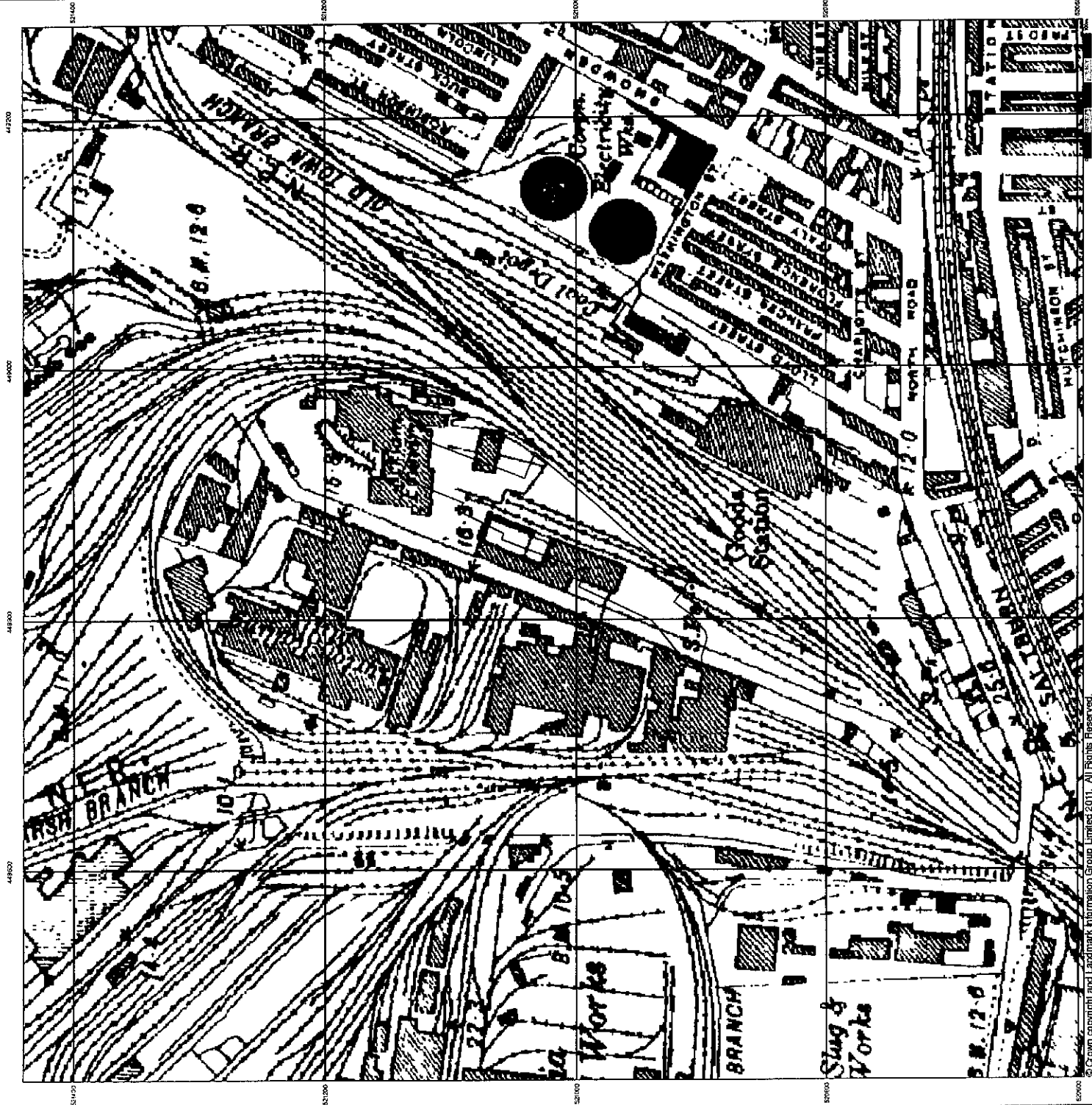
OS 1:10,560
1:10,560

Order Details

Order Number: 33761560_2_1
Customer Ref: G11025
National Grid Reference: 448870_521010
Site Area (Ha): 1.3

Site Details

BF Biogas Site, Forty Foot Road, Middlesbrough, TS2 1HG



Yorkshire
Published 1929
Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)

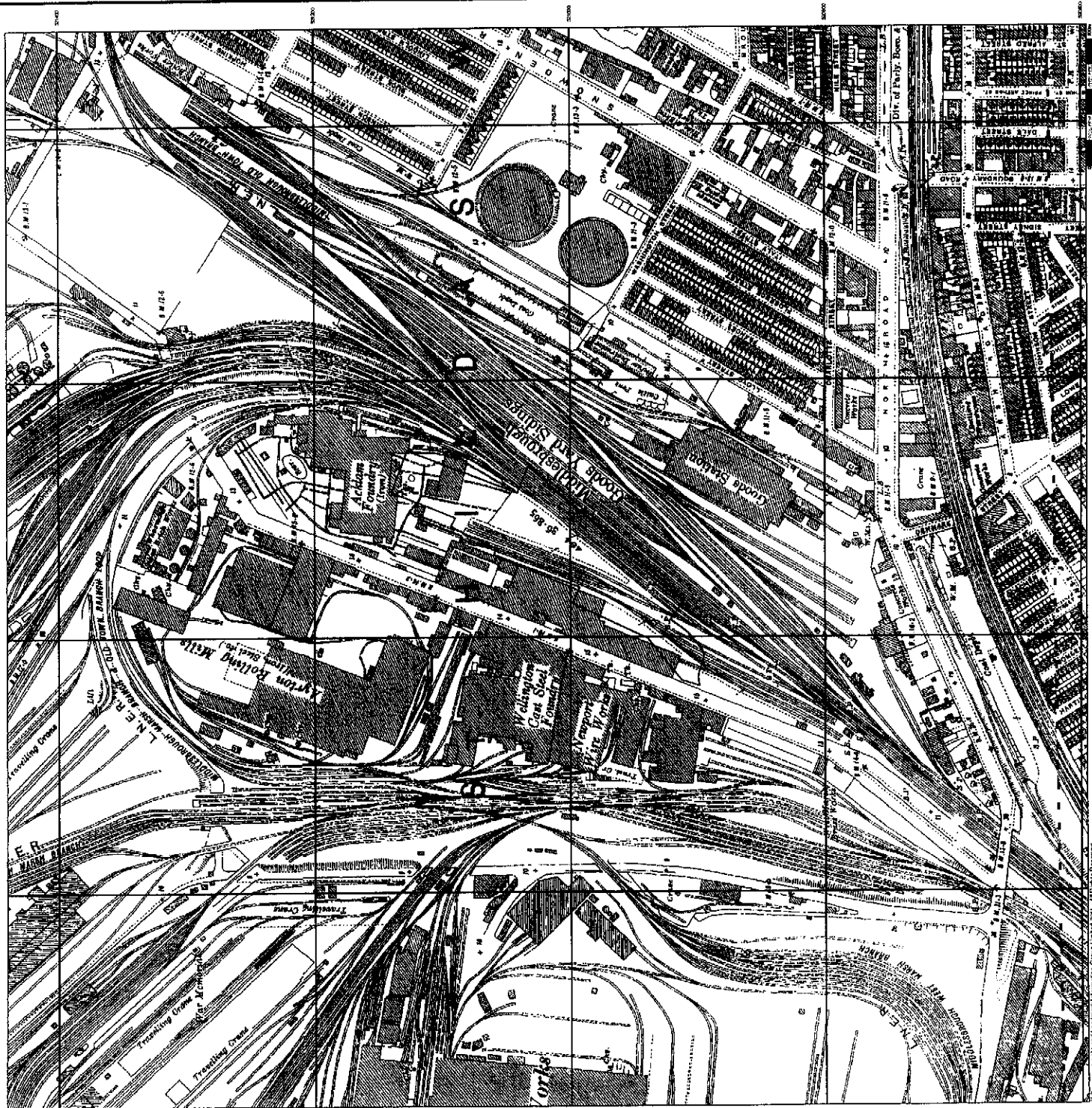
006 10	1854
006 11	1854
006 12	1854
006 13	1854
006 14	1854
006 15	1854
006 16	1854
006 17	1854
006 18	1854
006 19	1854
006 20	1854
006 21	1854
006 22	1854
006 23	1854
006 24	1854
006 25	1854
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006 99	1854
006 100	1854

Order Details

Order Number: 33761560_2_1
Customer Ref: G11025
National Grid Reference: 448870_521010
Site Area (Ha): 1.3

Site Details

BF Biogas Site, Forty Foot Road, Middlesbrough, TS2 1HG



Yorkshire

Published 1938

Source map scale - 1:10,560

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

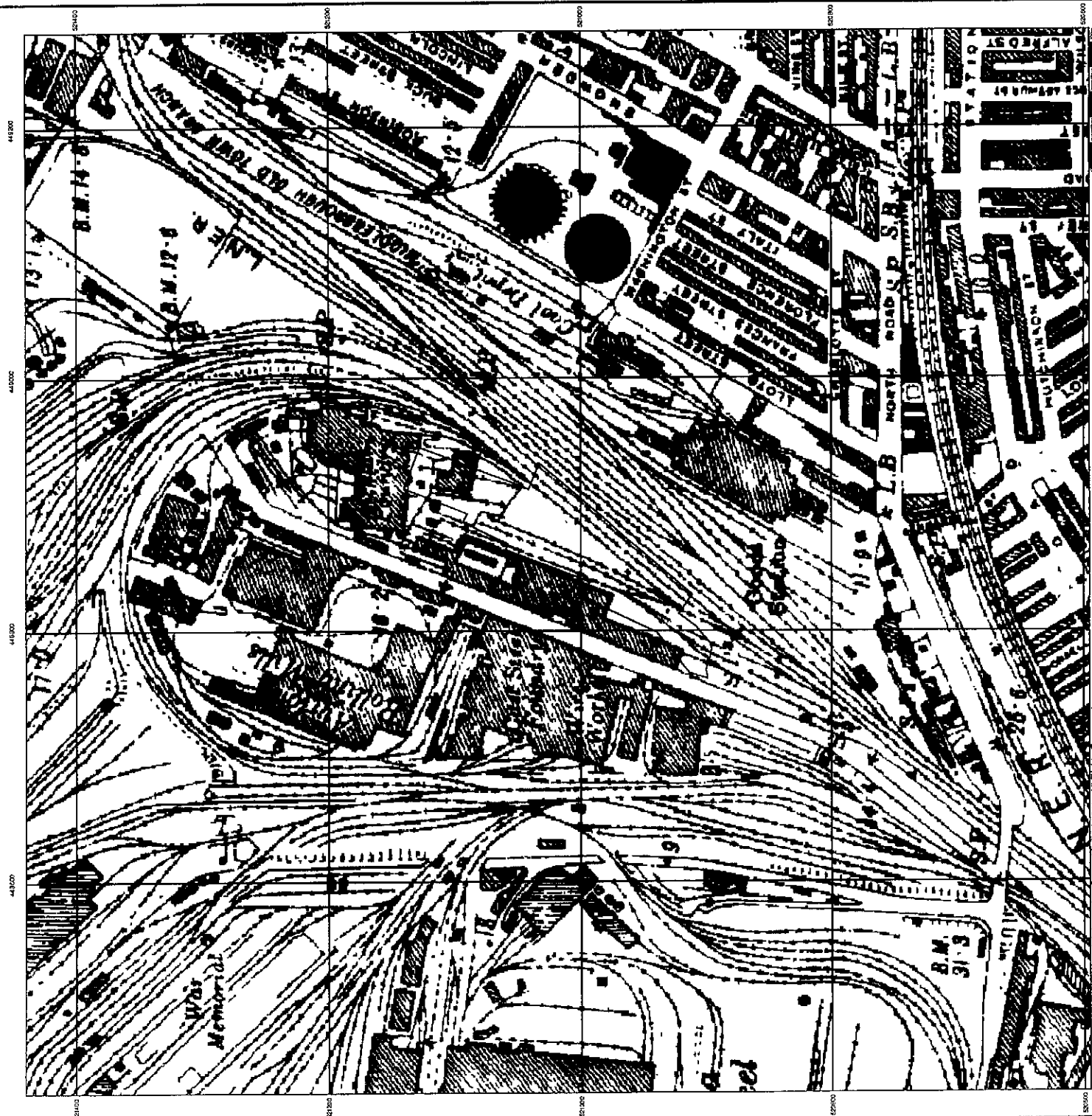
006 SW
1938
1:10,560

Order Details

Order Number: 3376/1560_2_1
Customer Ref: G11025
National Grid Reference: 448870_521010
Site Area (Ha): 1.3

Site Details

BF Biogas Site, Forty Foot Road, Middlesbrough, TS2 1HG



Durham

Published 1938

Source map scale - 1:10,560

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overlaid with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

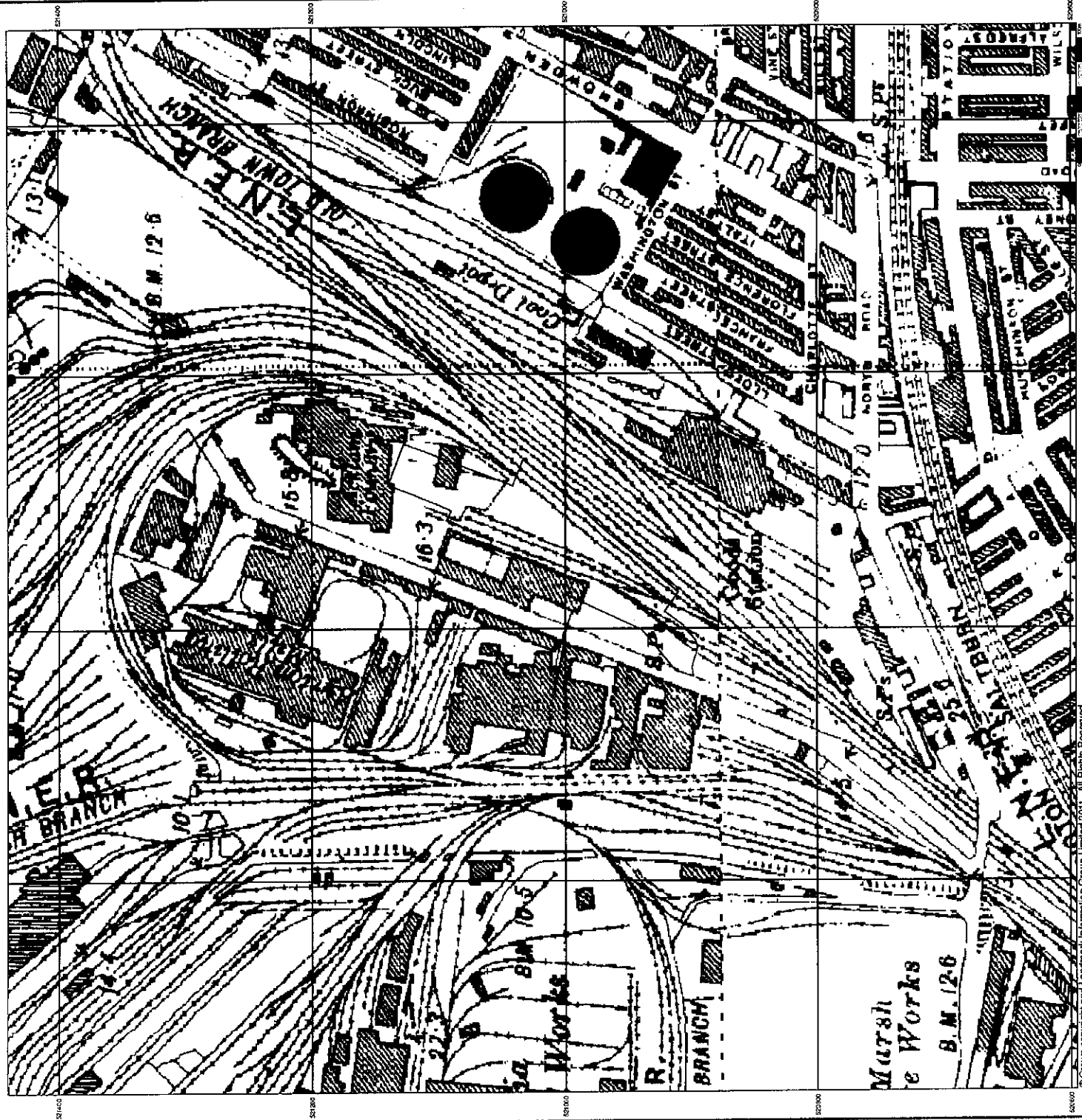
OS1 NW 1938 1:10,560	OS1 SW 1938 1:10,560
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Order Details

Order Number: 33761560_2_1
Customer Ref: G11025
National Grid Reference: 448870_521010
Site Area (Ha): 1.3

Site Details

BF Biogas Site, Forty Foot Road, Middlesbrough, TS2 1HG



Durham

Published 1939

Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published data given below is often some years later than the surveyed data. Before 1939, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)

OS 66	OS 10
1939	1939
1:2,500	1:2,500

Order Details

Order Number: 33761580_2_1
Customer Ref: G11025
National Grid Reference: 48870_521010
Site Area (Ha): 1.3

Site Details

BF Biogas Site, Forty Foot Road, Middlesbrough, TS2 1HG



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Web: www.landmark.co.uk

**Ordnance Survey Plan
Published 1952 - 1953**

Source map scale - 1:1,250

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1940's. In 1954 the 1:2,500 scale was adopted for mapping urban areas and by 1955 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1939, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)

NZ4821SW 1953 1:1,250	NZ4821SE 1953 1:1,250	NZ4821SW 1953 1:1,250
NZ4820NW 1953 1:1,250	NZ4820NE 1953 1:1,250	NZ4820NW 1953 1:1,250

Order Details

Order Number: 33761560_2_1
Customer Ref: G11025
National Grid Reference: 448870_521010
Site Area (Ha): 1.3

Site Details

BF Biogas Site, Forty Foot Road, Middlesbrough, TS2 1HG



**Ordnance Survey Plan
Published 1953 - 1954
Source map scale - 1:2,500**

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1954 the 1:2,500 scale was adopted for mapping urban areas and by 1956 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1936, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)

NZ4821	1953	1:2,500
NZ4821	1954	1:2,500
NZ4820	1954	1:2,500

Order Details

Order Number: 33761560_2_1
Customer Ref: G11025
National Grid Reference: 448870_521010
Site Area (Ha): 1.3

Site Details

BF Biogas Site, Forty Foot Road, Middlesbrough, TS2 1HG





Sitecheck
A Landmark product

Ordnance Survey Plan Published 1954

Source map scale - 1:10,560

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published data given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

NZ42SE
1954
1:10,560

Order Details

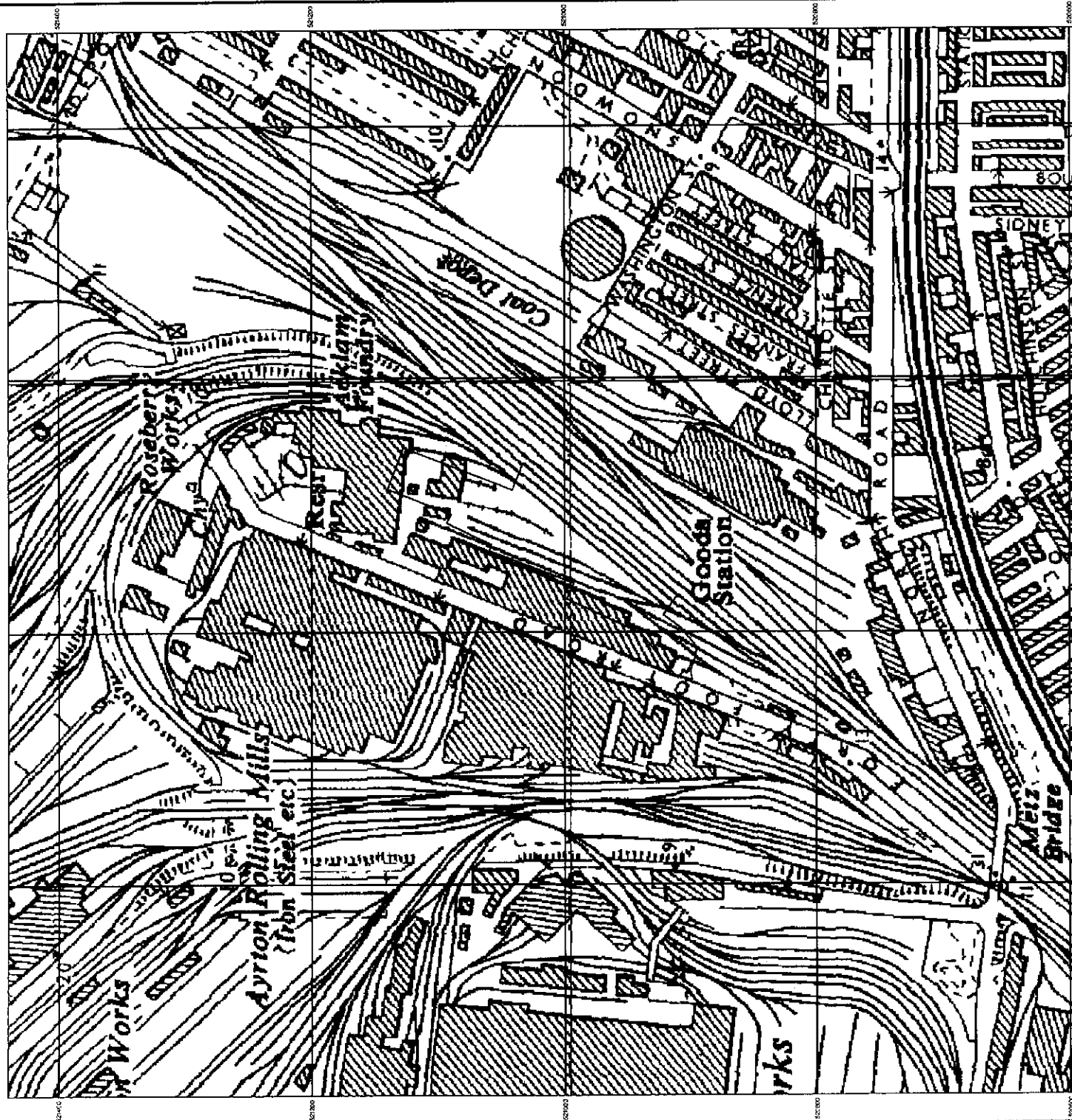
Order Number: 33761560_2_1
Customer Ref: G11025
National Grid Reference: 448870_521010
Site Area (Ha): 1.3

Site Details

BF Blogas Site, Forty Foot Road, Middlesbrough, TS2 1HG

LANDMARK
Information Group

Tel: 0844 844 3902
Fax: 0844 844 3557
Web: www.environmental.co.uk



**Ordnance Survey Plan
Published 1963 - 1971**

Source map scale - 1:1,250

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1940's. In 1954 the 1:2,500 scale was adopted for mapping urban areas and by 1956 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)

NZ4821SW 1970 1:1,250	NZ4821SE 1970 1:1,250	NZ4821SW 1970 1:1,250
NZ4821NW 1970 1:1,250	NZ4821NE 1970 1:1,250	NZ4821NW 1970 1:1,250

Order Details

Order Number: 33761560_2_1
Customer Ref: G11025
National Grid Reference: 448870_521010
Site Area (Ha): 1.3

Site Details

BF Biogas Site, Forty Foot Road, Middlesbrough, TS2 1HG



Ordnance Survey Plan **Published 1966 - 1970** **Source map scale - 1:2,500**

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840 s. In 1954 the 1:2,500 scale was adopted for mapping urban areas and by 1956 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)

NZ4821	NZ4821
1966	1966
1:2,500	1:2,500
NZ4820	NZ4820
1966	1966
1:2,500	1:2,500

Order Details

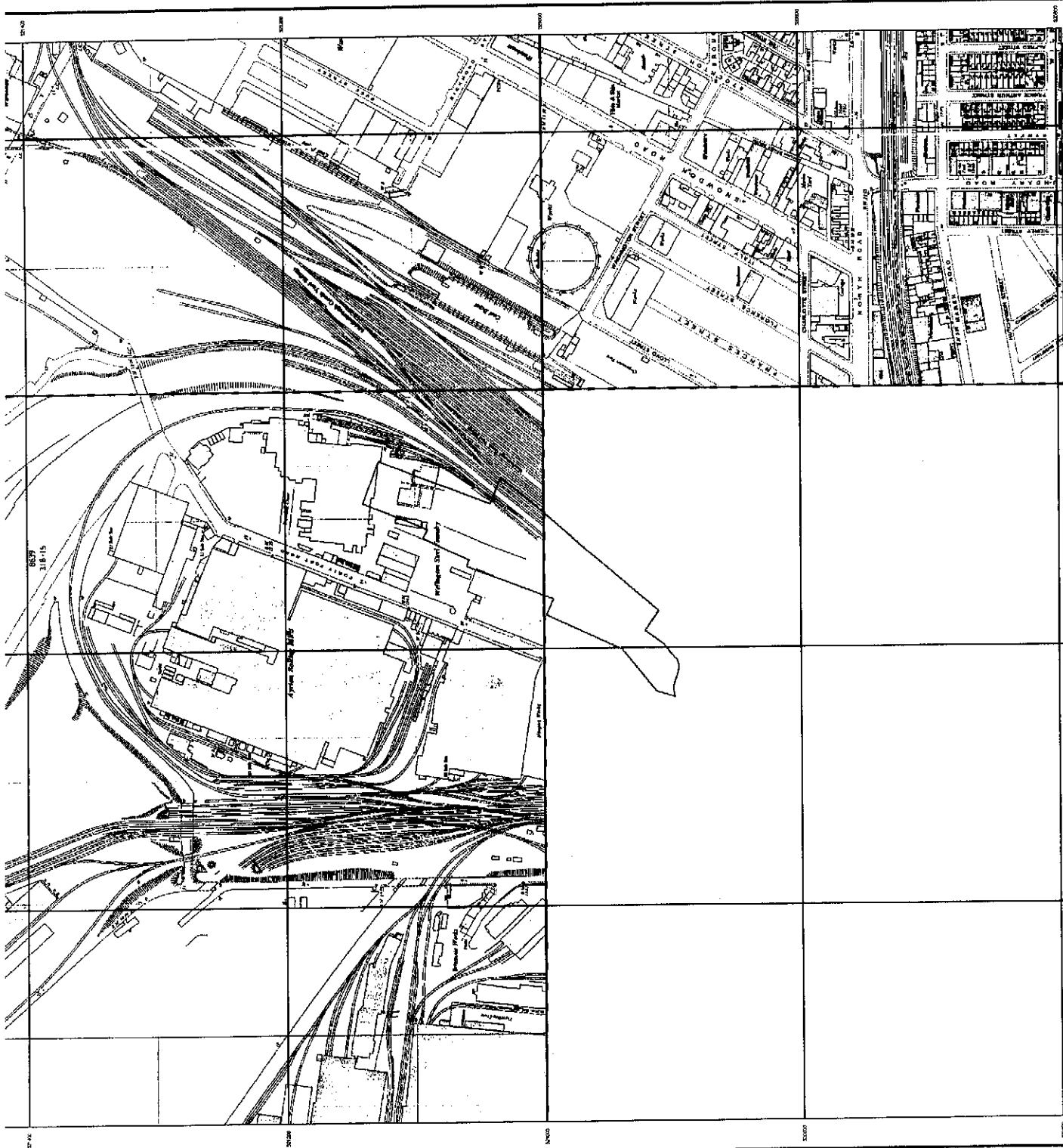
Order Number: 33761560_2_1
Customer Ref: G11025
National Grid Reference: 448870_521010
Site Area (Ha): 1.3

Site Details

BF Blogas Site, Forty Foot Road, Middlesbrough, TS2 1HG



Tel: 0844 844 8652
Fax: 0844 844 9821
Web: www.ordnancesurvey.co.uk



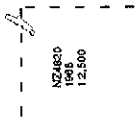
Additional SIMs

Published 1966

Source map scale - 1:2,500

The SIM cards (Ordnance Surveys 'Survey of Information on Microfilm') are further, minor editions of mapping which were produced and published in between the main editions as an area was updated. They date from 1947 to 1964, and contain detailed information on buildings, roads and land-use. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)

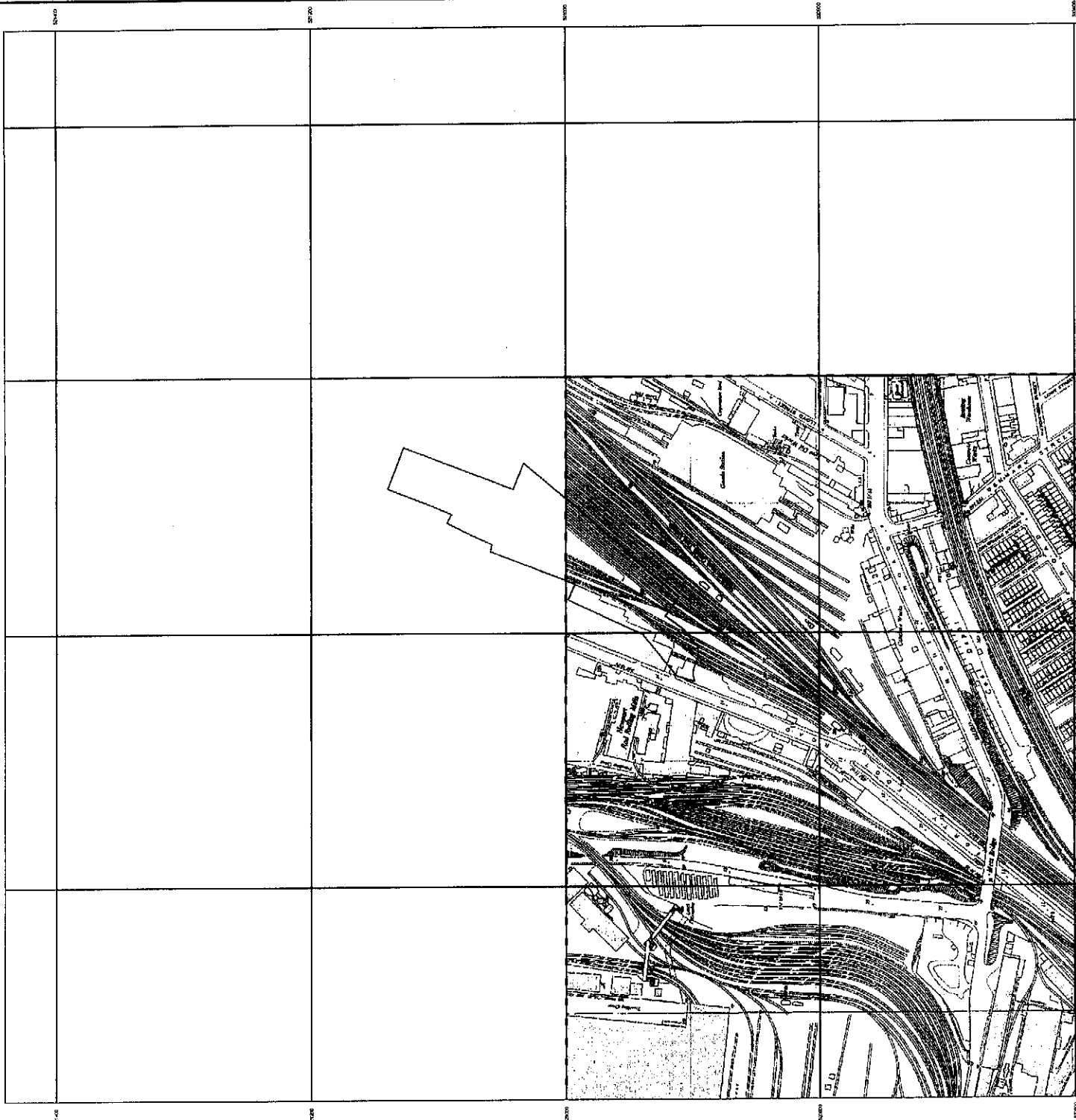


Order Details

Order Number: 33761560_2_1
Customer Ref: G11025
National Grid Reference: 448870_521010
Site Area (Ha): 1.3

Site Details

BF Biogas Site, Forty Foot Road, Middlesbrough, TS2 1HG



**Ordnance Survey Plan
Published 1968 - 1988**

Source map scale - 1:1,250

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1940's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)

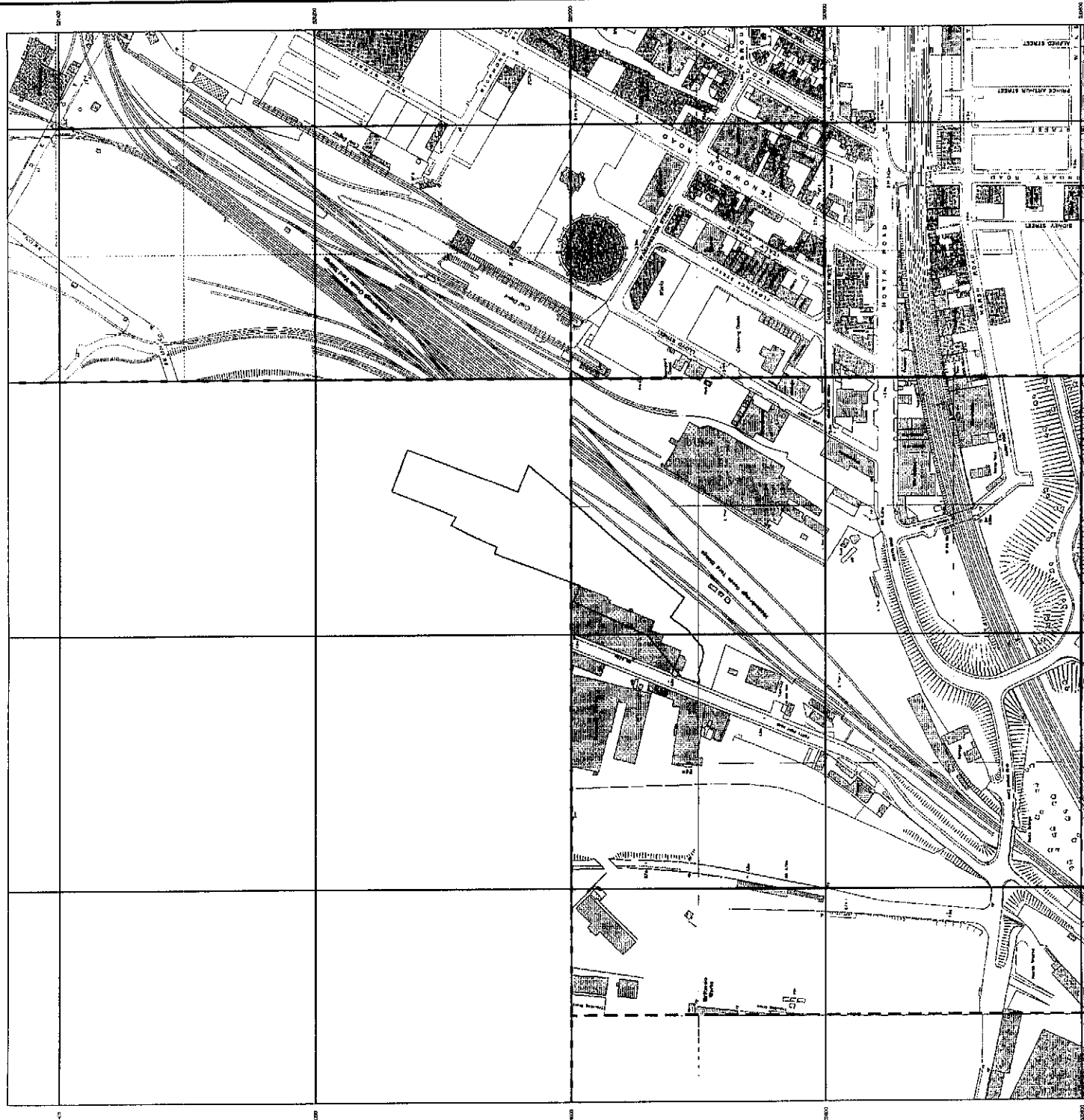
NZ4921SW 1988 1:1,250	NZ4921SW 1970 1:1,250
NZ4921NW 1988 1:1,250	NZ4921NW 1970 1:1,250

Order Details

Order Number: 33761560_2_1
Customer Ref: G11025
National Grid Reference: 448870_521010
Site Area (Ha): 1.3

Site Details

BF Biogas Site, Forty Foot Road, Middlesbrough, TS2 1HG



**Supply of Unpublished Survey
Information
Published 1973**

Source map scale - 1:1,250

SUSI maps (Supply of Unpublished Survey Information) were produced between 1972 and 1977, mainly for internal use at Ordnance Survey. These were more of a 'work-in-progress' plan as they showed updates of individual areas on a map. These maps were unpublished, and they do not represent a single moment in time. They were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)



Order Details

Order Number: 33761560_2_1
Customer Ref: G11025
National Grid Reference: 448870_521010
Site Area (Ha): 1.3

Site Details

BF Blogas Site, Forty Foot Road, Middlesbrough, TS2 1HG



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**Ordnance Survey Plan
Published 1975**

Source map scale - 1:10,000

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

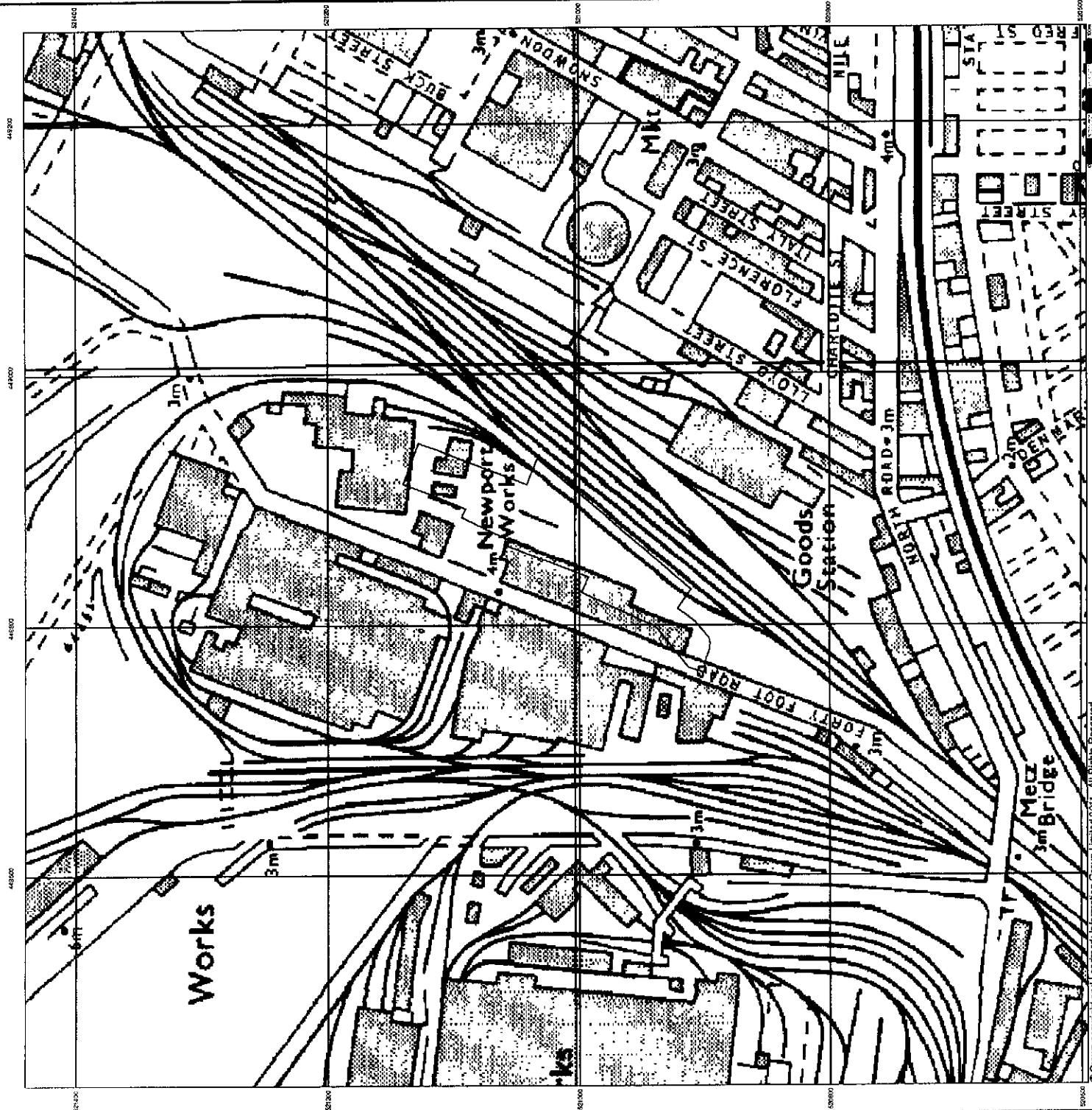
NZ42SE
1975
1:10,000

Order Details

Order Number: 33761560_2_1
Customer Ref: G11025
National Grid Reference: 448870_521010
Site Area (Ha): 1.3

Site Details

BF Biogas Site, Forty Foot Road, Middlesbrough, TS2 1HG



Additional SIMs

Published 1980 - 1985

Source map scale - 1:1,250

The SIM cards (Quintance Survey's 'Survey of Information on Microfilm') are further, minor editions of mapping which were produced and published in between the main editions as an area was updated. They date from 1947 to 1994, and contain detailed information on buildings, roads and land-use. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)

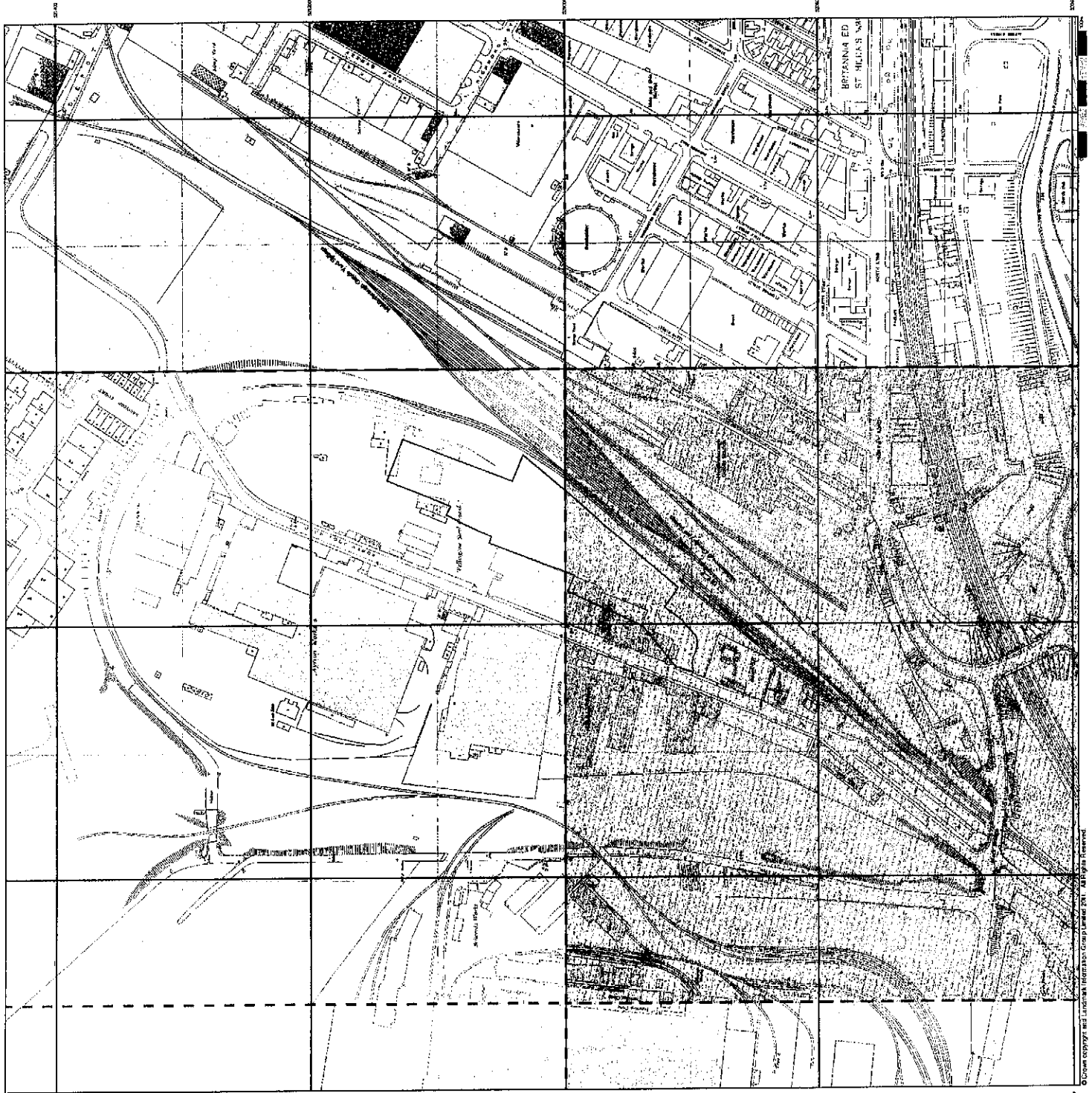
NZ4821SW	NZ4821SE	NZ4821SW
1984	1983	1982
1:1,250	1:1,250	1:1,250
NZ4821NW	NZ4821NE	NZ4821NW
1984	1983	1982
1:1,250	1:1,250	1:1,250

Order Details

Order Number: 33761560_2_1
Customer Ref: G11025
National Grid Reference: 448870 521010
Site Area (Ha): 1.3

Site Details

BF Biogas Site, Forty Foot Road, Middlesbrough, TS2 1HG



Ordnance Survey Plan Published 1984

Source map scale - 1:1,250

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854, the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)

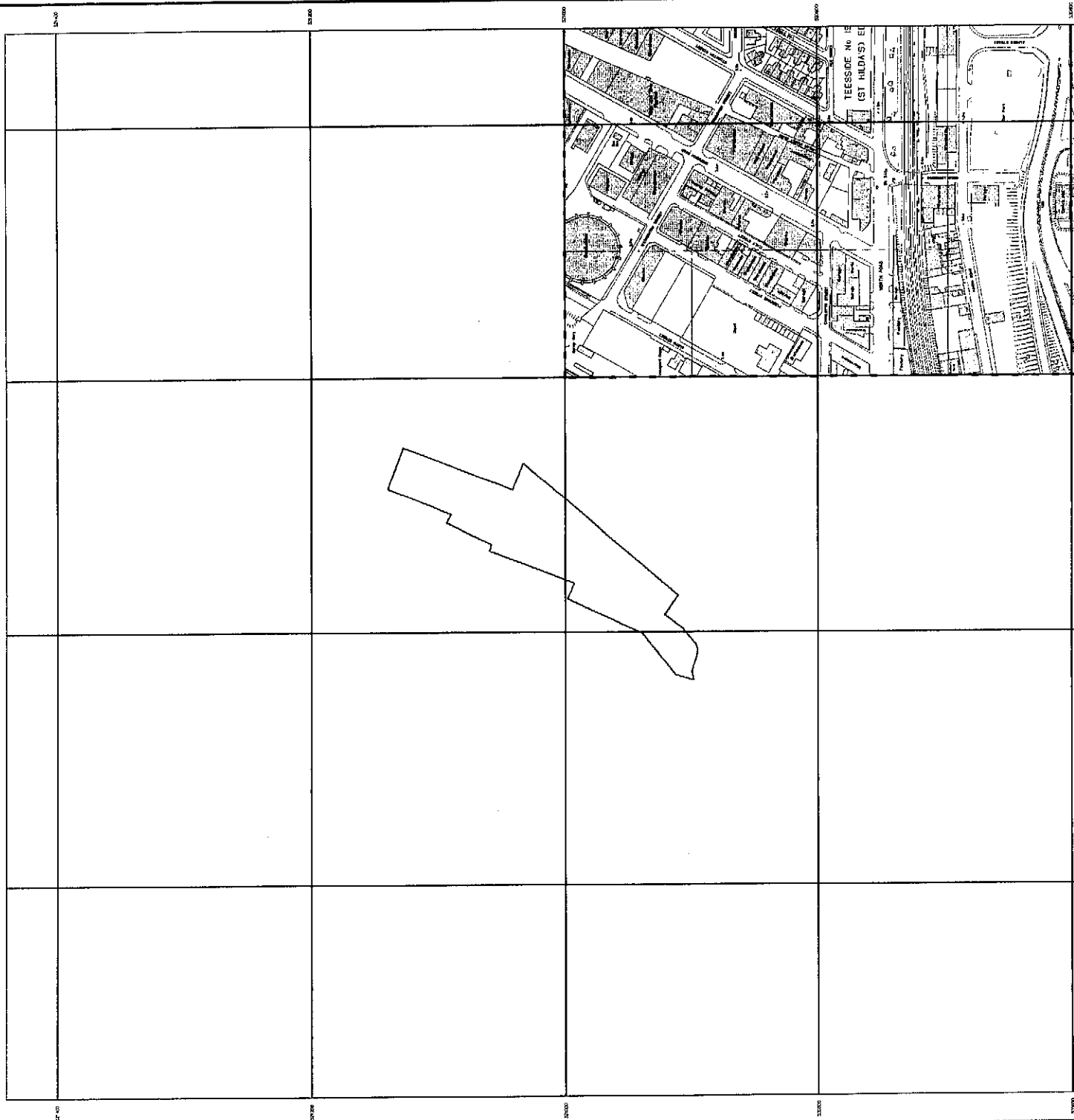


Order Details

Order Number: 33761550_2_1
Customer Ref: G11025
National Grid Reference: 448870_521010
Site Area (Ha): 1.3

Site Details

BF Biogas Site, Forty Foot Road, Middlesbrough, TS2 1HG



Additional SIMs

Published 1985 - 1989

Source map scale - 1:1,250

The SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') are further, minor editions of mapping which were produced and published in between the main editions as an area was updated. They date from 1947 to 1994, and contain detailed information on buildings, roads and land use. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)

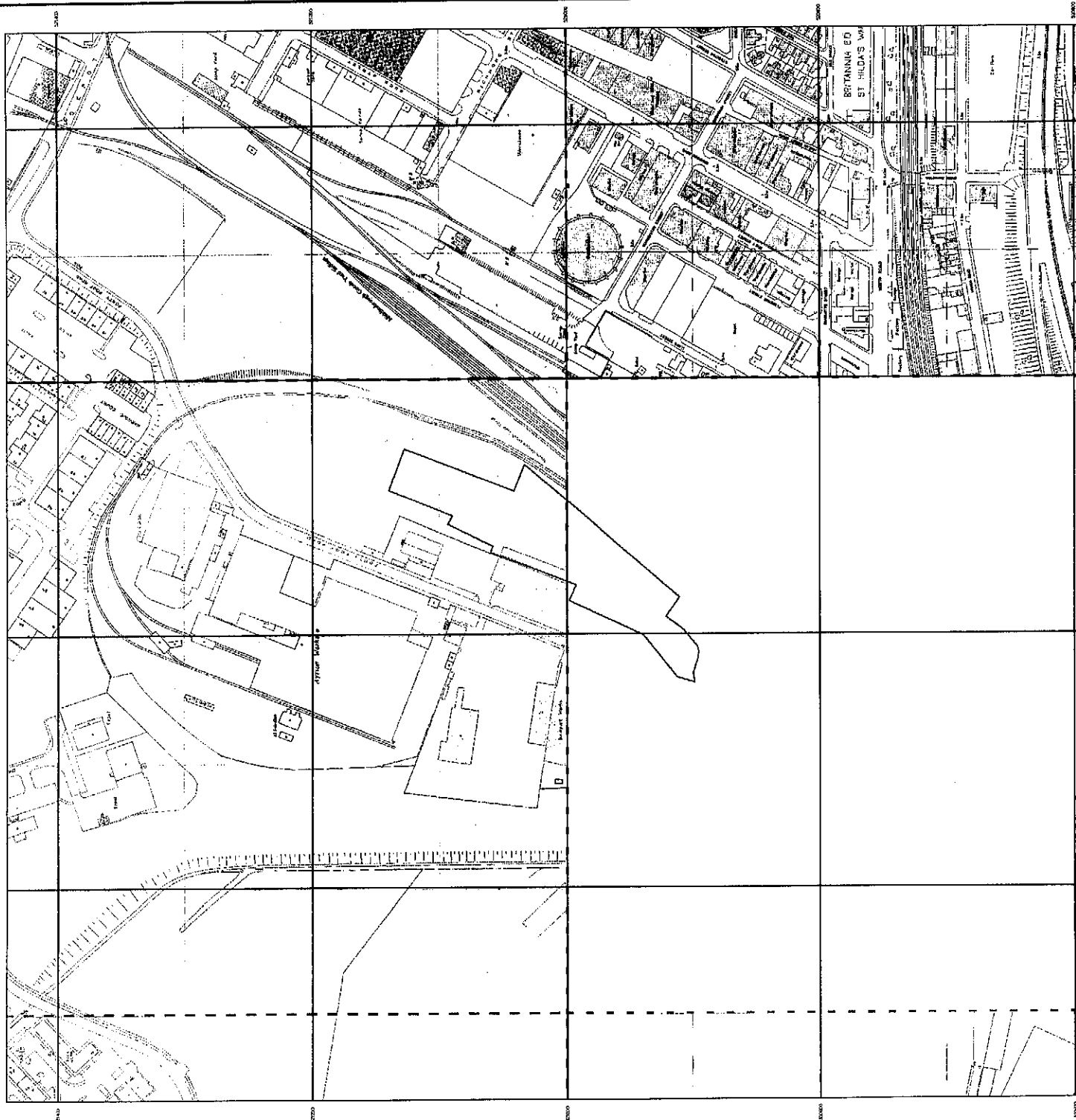
NZ4921SW	NZ4921SE	NZ4921SW
1989	1989	1985
1:1,250	1:1,250	1:1,250
NZ4922NW	NZ4922NW	NZ4922NW
1989	1989	1985
1:1,250	1:1,250	1:1,250

Order Details

Order Number: 33761560_2_1
Customer Ref: G11025
National Grid Reference: 448870_521010
Site Area (Ha): 1.3

Site Details

BF Biogas Site, Forty Foot Road, Middlesbrough, TS2 1HG



**Ordnance Survey Plan
Published 1987**

Source map scale - 1:10,000

The historical maps shown were reproduced from maps predominantly made at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1838, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1840's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

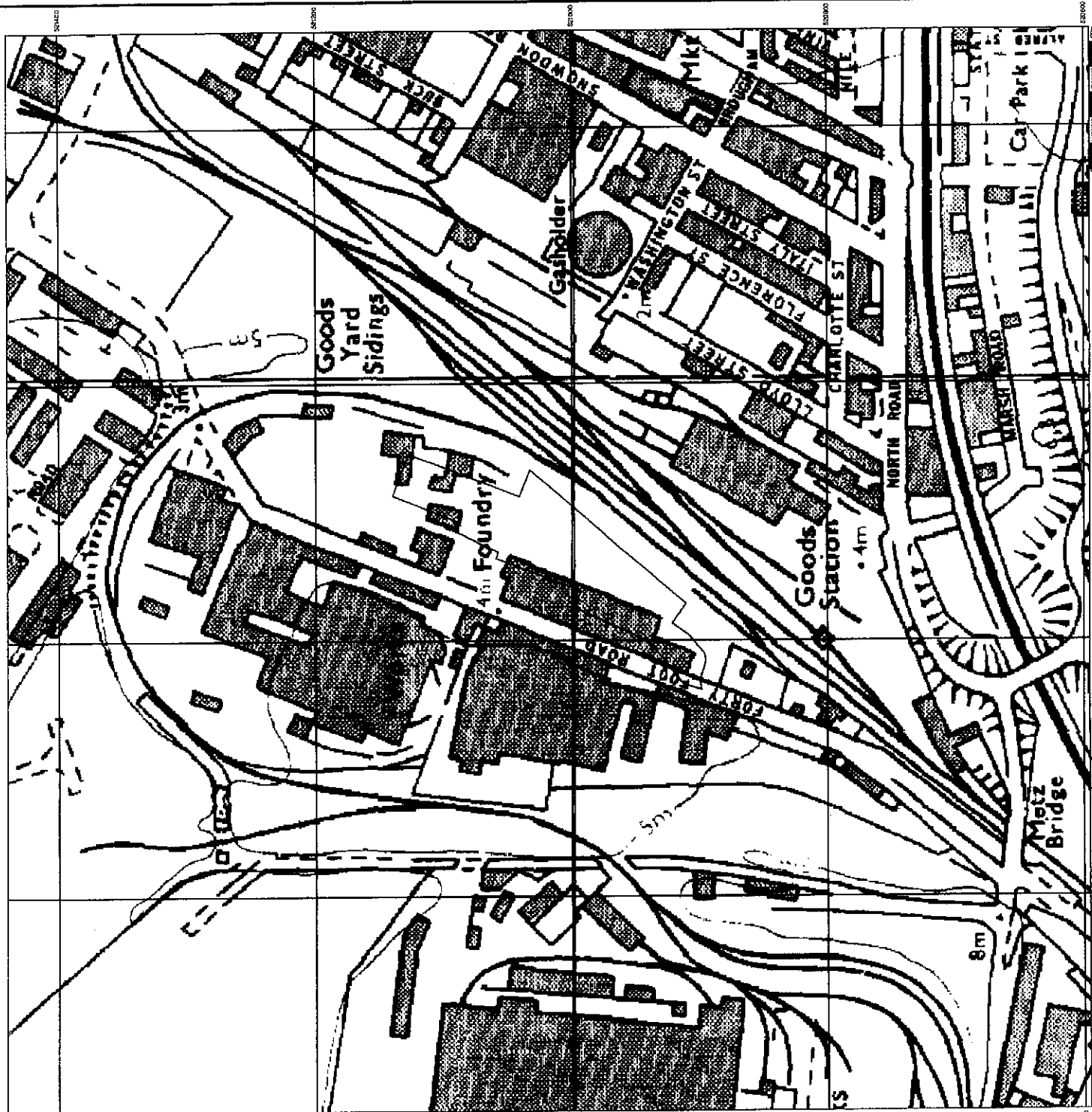
NZ49SE
1987
1:10,000

Order Details

Order Number: 33761560_2_1
Customer Ref: G11025
National Grid Reference: 448870_521010
Site Area (Ha): 1.3

Site Details

BF Blogas Site, Forty Foot Road, Middlesbrough, TS2 1HG



Additional SIMs

Published 1990 - 1991

Source map scale - 1:1,250

The SIM cards (Ordinance Survey's 'Survey of Information on Microfilm') are further, minor editions of mapping which were produced and published in between the main editions as an area was updated. They date from 1947 to 1994, and contain detailed information on buildings, roads and land-use. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)

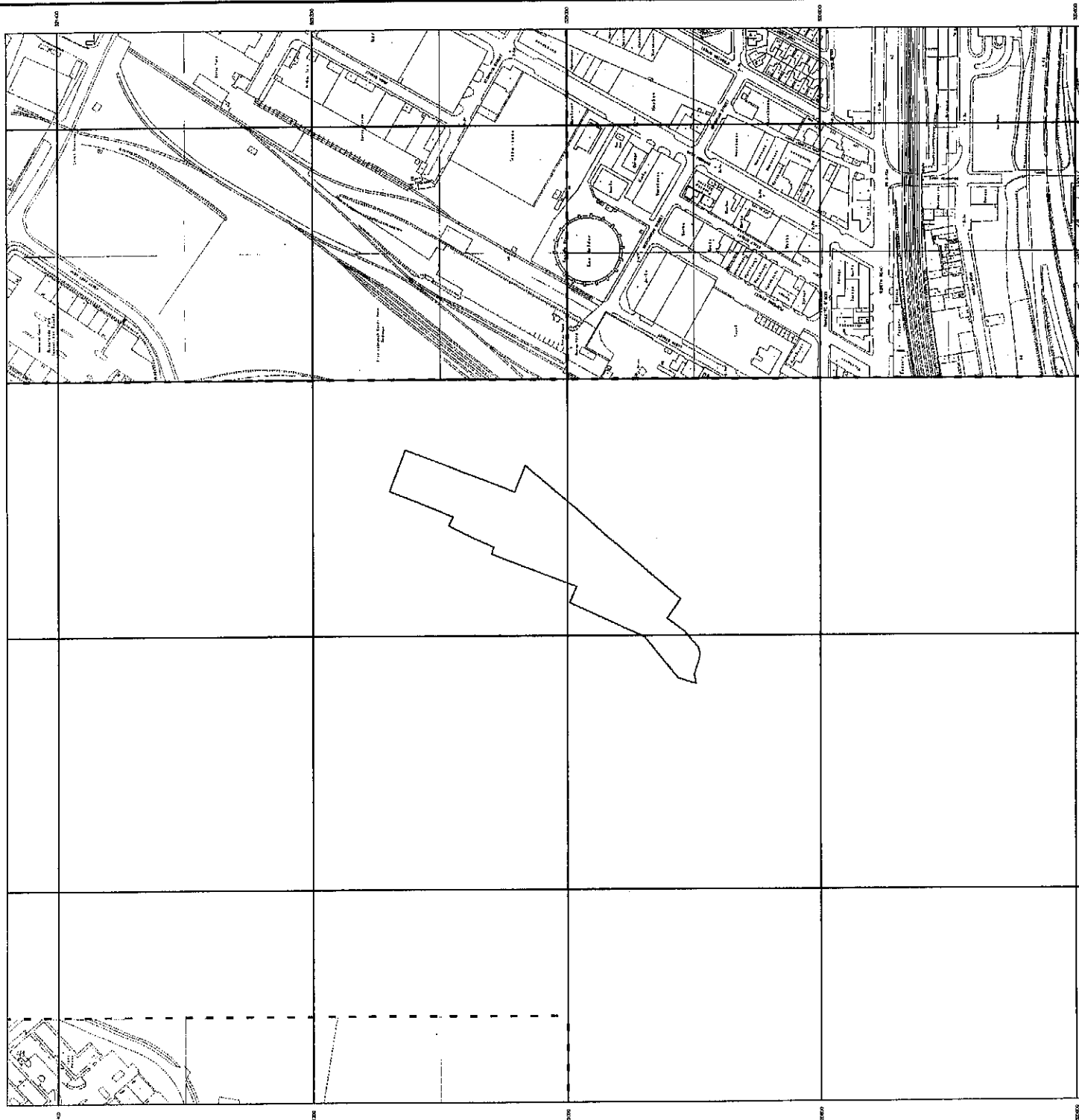
NZ4421SW	NZ4921SW
1990	1991
1:1,250	1:1,250
	NZ4920NW
	1991
	1:1,250

Order Details

Order Number: 33761560_2_1
Customer Ref: G11025
National Grid Reference: 448870_521010
Site Area (Ha): 1.3

Site Details

BF Blogas Site, Forty Foot Road, Middlesbrough, TS2 1HG



**Large-Scale National Grid Data
Published 1992**

Source map scale - 1:1,250

Large Scale National Grid Data subseries SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') in 1992, and continued to be produced until 1999. These maps were the 'fore-runners' of digital mapping and so provide detailed information on houses and roads, but tend to show less topographic features such as vegetation. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)

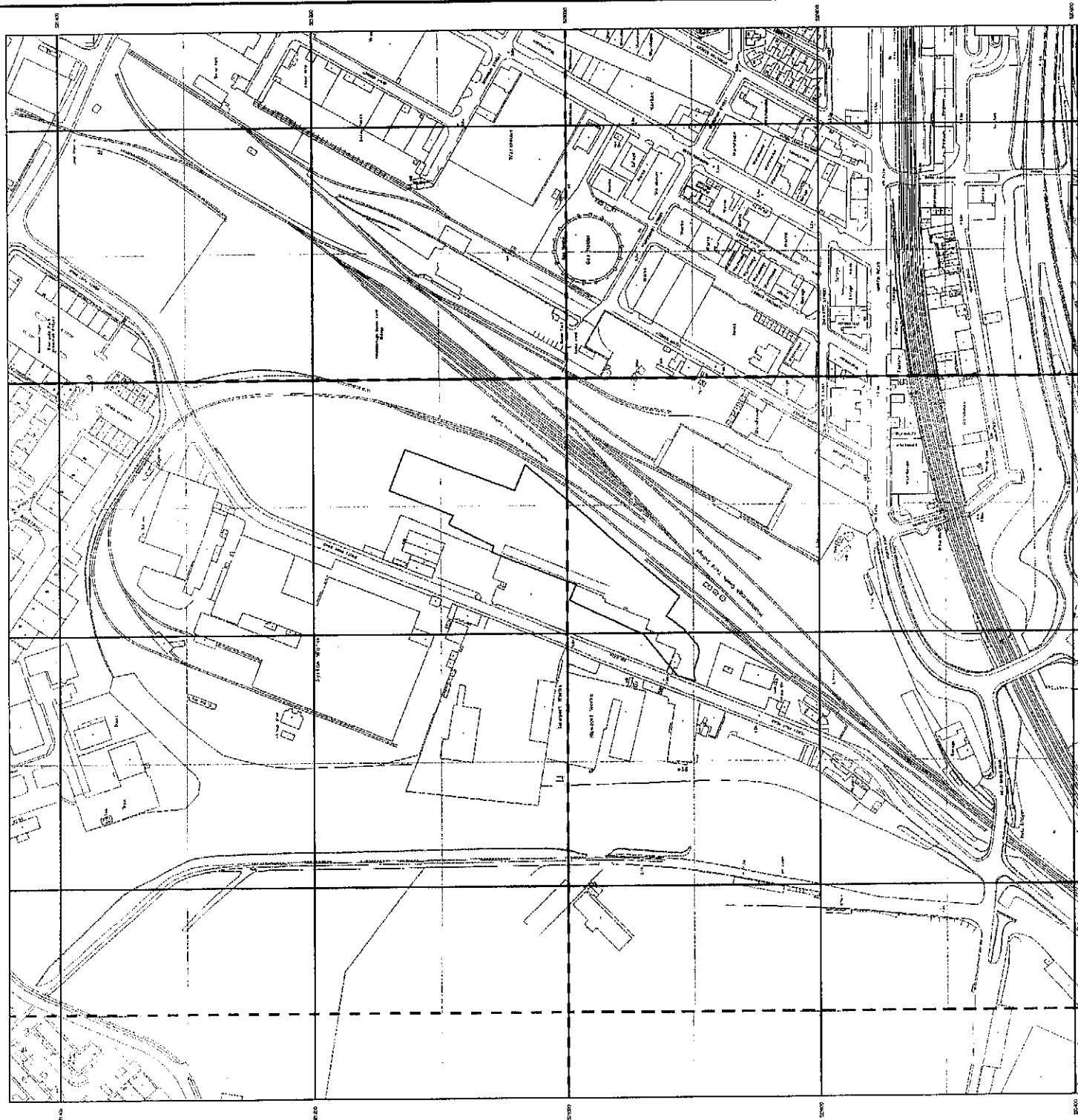
NZ4821SW	NZ4821SE	NZ4821SW
1992	1992	1992
1:1,250	1:1,250	1:1,250
NZ4821NW	NZ4821NE	NZ4821NW
1992	1992	1992
1:1,250	1:1,250	1:1,250

Order Details

Order Number: 33761560_2_1
Customer Ref: G11025
National Grid Reference: 448870_521010
Site Area (Ha): 1.3

Site Details

BF Biogas Site, Forty Foot Road, Middlestrough, TS2 1HG



**Ordnance Survey Plan
Published 1993**

Source map scale - 1:10,000

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1940s. In 1954 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940s, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

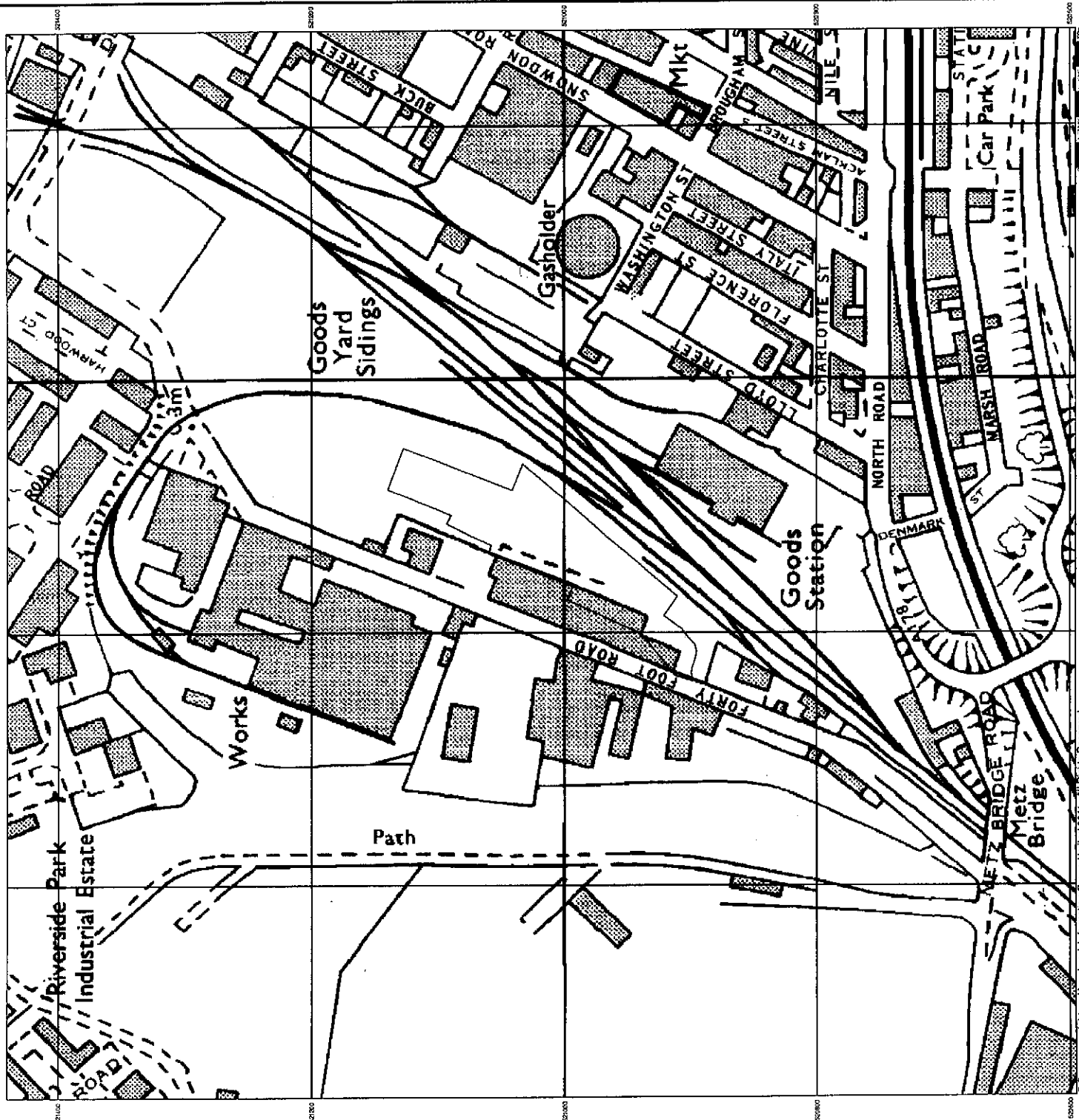
NZ49SE
1988
1:10,000

Order Details

Order Number: 33761560_2_1
Customer Ref: G11025
National Grid Reference: 448870_521010
Site Area (Ha): 1.3

Site Details

BF Biogas Site, Forty Foot Road, Middlesbrough, TS2 1HG



Large-Scale National Grid Data Published 1994 - 1997

Source map scale - 1:1,250

Large Scale National Grid Data superseded SSM cards (Ordnance Survey's Survey of Information on Microfilm) in 1992, and continued to be produced until 1999. These maps were the forerunners of digital mapping and so provide detailed information on houses and roads, but tend to show less topographic features such as vegetation. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)

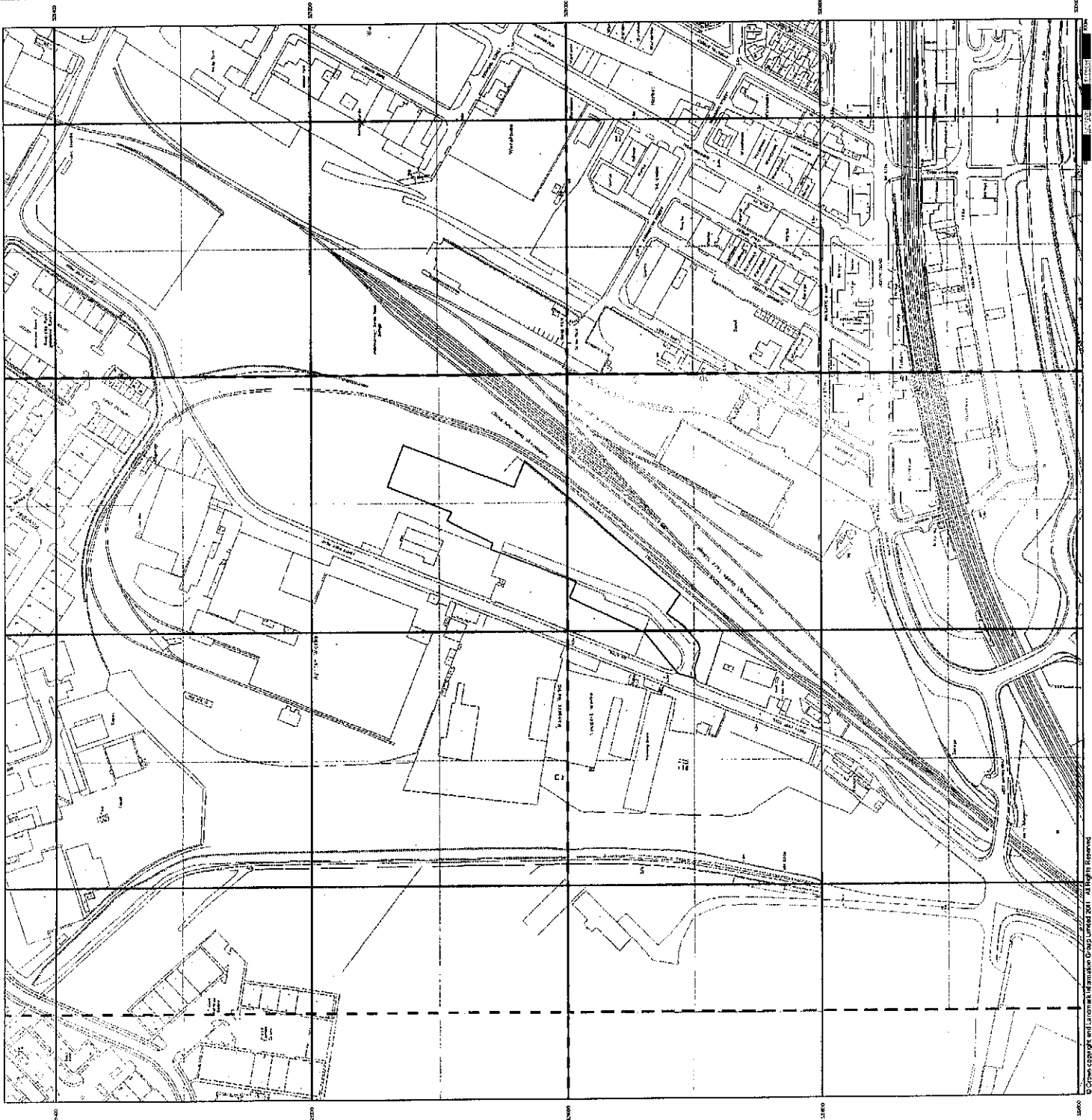
NZ4421SW	NZ4821SE	NZ4821SW
1994	1994	1997
1:1,250	1:1,250	1:1,250
NZ4820NW	NZ4820NE	NZ4820NW
1994	1994	1997
1:1,250	1:1,250	1:1,250

Order Details

Order Number: 33761560_2_1
Customer Ref: G11025
National Grid Reference: 448870_521010
Site Area (Ha): 1.3

Site Details

BF Biogas Site, Forty Foot Road, Middlesbrough, TS2 1HG



**Large-Scale National Grid Data
Published 1996**

Source map scale - 1:1,250

'Large Scale National Grid Data' superseded SIM cards (Ordinance Survey's 'Survey of Information on Microfilm') in 1992, and continued to be produced until 1999. These maps were the forerunners of digital mapping and so provide detailed information on houses and roads, but tend to show less topographic features such as vegetation. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)

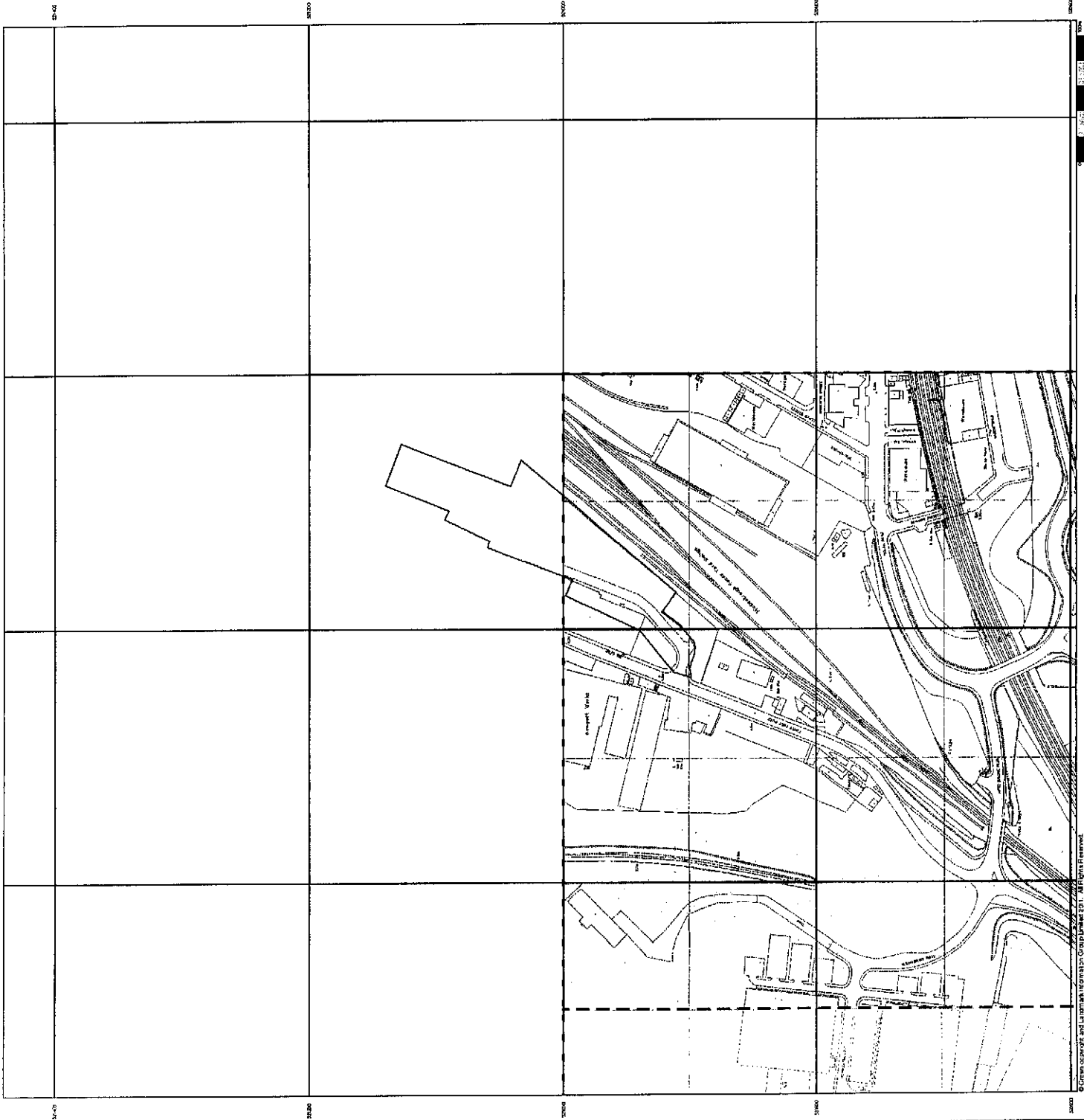
NZ4620 NW	NZ4620 NE
1:1,250	1:1,250

Order Details

Order Number: 33761560_2_1
Customer Ref: G11025
National Grid Reference: 448870_521010
Site Area (Ha): 1.3

Site Details

SF Biogas Site, Forty Foot Road, Middlesbrough, TS2 1HG



10K Raster Mapping

Published 2000

Source map scale - 1:10,000

The historical maps shown were produced from the Ordnance Survey's 1:10,000 colour raster mapping. These maps are derived from Landplan which replaced the old 1:10,000 maps originally published in 1970. The data is highly detailed showing buildings, fences and field boundaries as well as all roads, tracks and paths. Road names are also included together with the relevant road number and classification. Boundary information depiction includes county, unitary authority, district, civil parish and constituency.

Map Name(s) and Date(s)

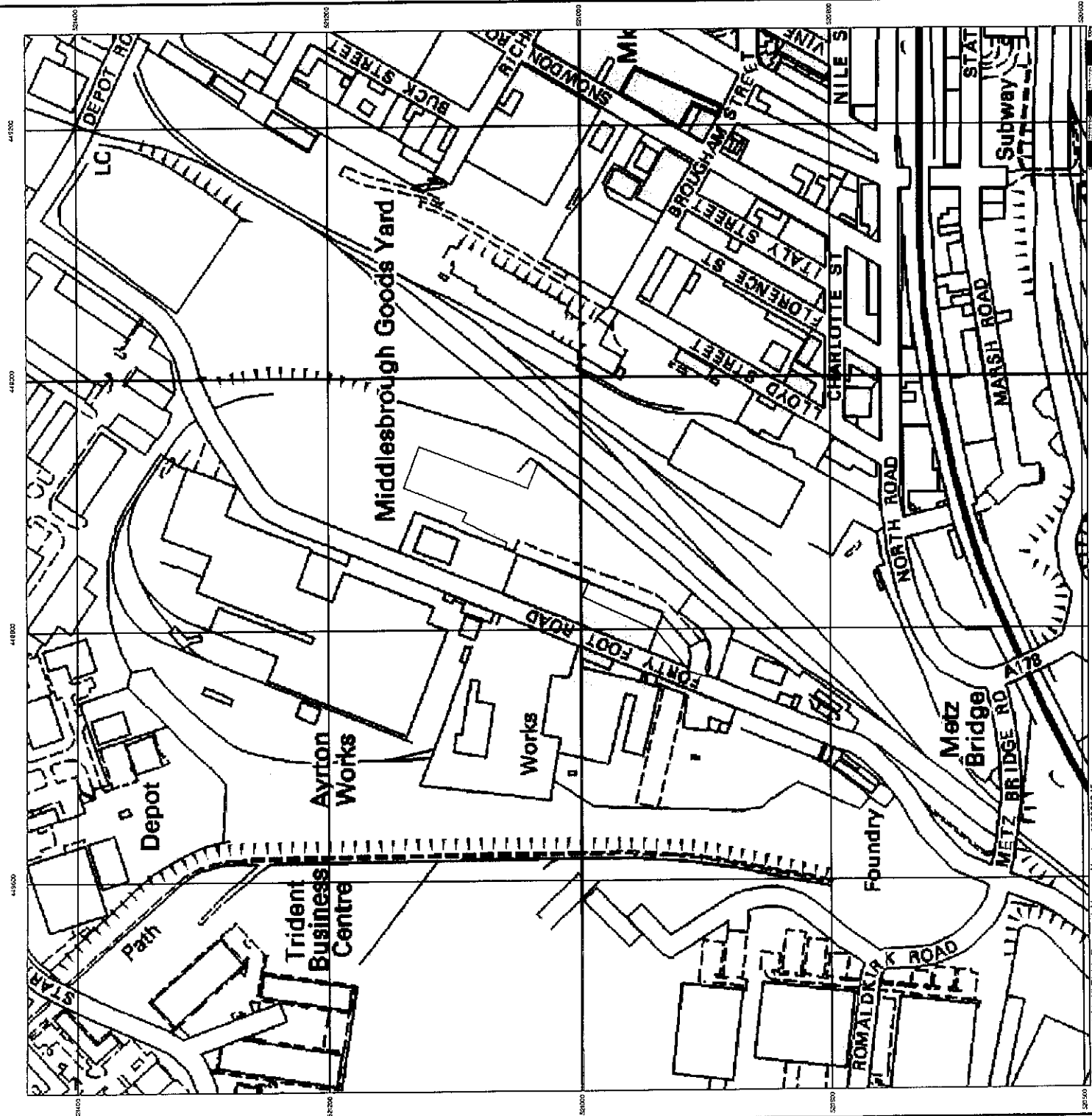
NZ42SE
2000
1:10,000

Order Details

Order Number: 33761560_2_1
Customer Ref: G11025
National Grid Reference: 448870_521010
Site Area (Ha): 1.3

Site Details

BF Biogas Site, Forty Foot Road, Middlesbrough, TS2 1HG



**10K Raster Mapping
Published 2006**

Source map scale - 1:10,000

The historical maps shown were produced from the Ordnance Survey's 1:10,000 colour raster mapping. These maps are derived from Landplan which replaced the old 1:10,000 maps originally published in 1970. The data is highly detailed showing buildings, fences and field boundaries as well as all roads, tracks and paths. Road names are also included together with the relevant road number and classification. Boundary information depicts includes county, unitary authority, district, civil parish and constituency.

Map Name(s) and Date(s)

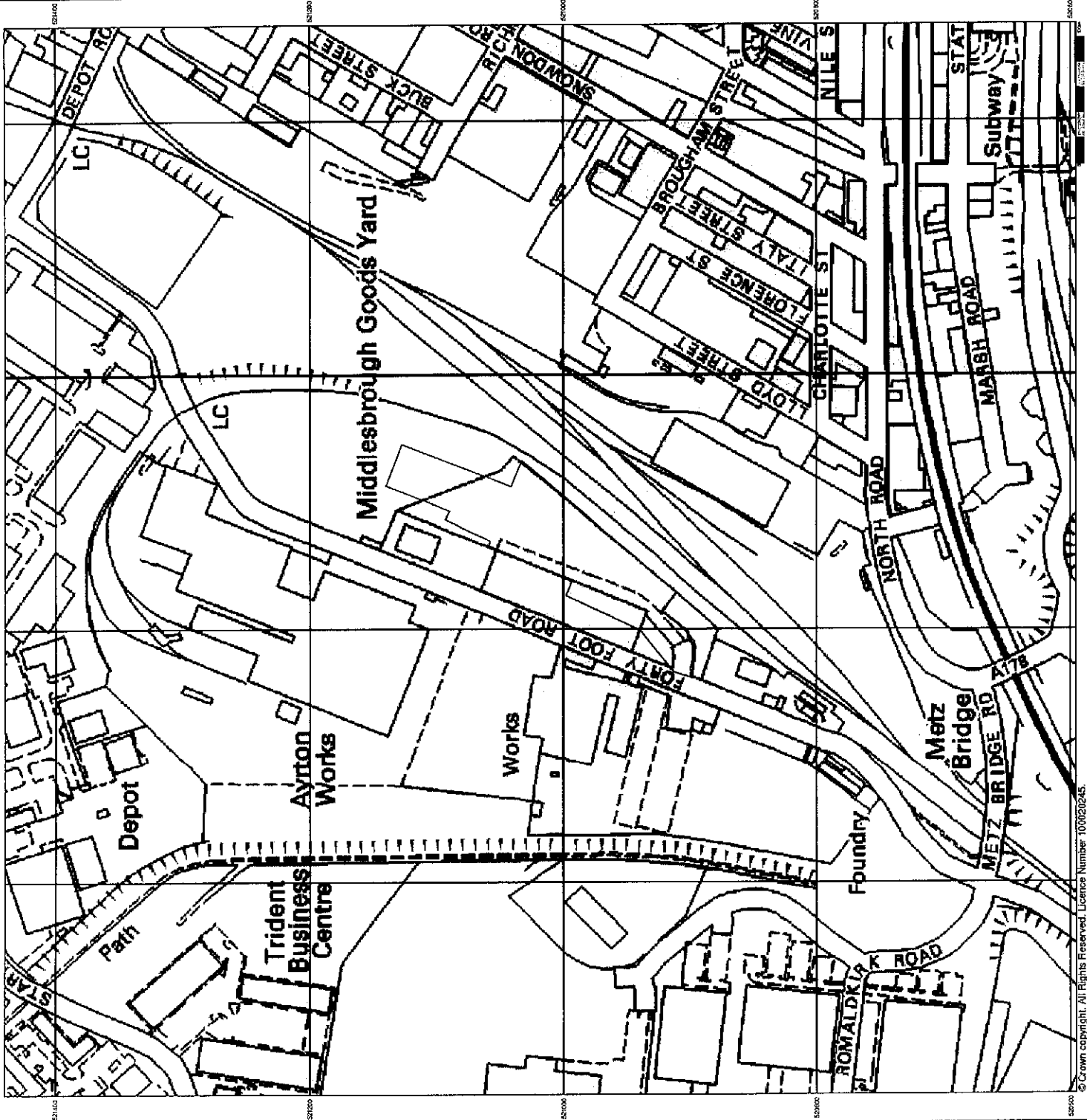
NZ42SE
2006
1:10,000

Order Details

Order Number: 33761560_2_1
Customer Ref: G11025
National Grid Reference: 448870_521010
Site Area (Ha): 1.3

Site Details

BF Biogas Site, Forty Foot Road, Middlesbrough, TS2 1HG



**10K Raster Mapping
Published 2010**

Source map scale - 1:10,000

The historical maps shown were produced from the Ordnance Survey's 1:10,000 colour raster mapping. These maps are derived from Landplan which replaced the old 1:10,000 maps originally published in 1970. The data is highly detailed showing buildings, fences and field boundaries as well as all roads, tracks and paths. Road names are also included together with the relevant road number and classification. Boundary information depiction includes county, unitary authority, district, civil parish and constituency.

Map Name(s) and Date(s)

AZ42SE
2010
1:10,000

Order Details

Order Number: 33761560_2_1
Customer Ref: G11025
National Grid Reference: 448870_521010
Site Area (Ha): 1.3

Site Details

BF Biogas Site, Forty Foot Road, Middlesbrough, TS2 1HG



SITECHECK DATA SEARCH

BF Biogas Site, Forty Foot Road, Middlesbrough, TS2 1HG

Prepared for:
MR S Howe
Geoinvestigate Limited
Units 4/5
Terry Dicken Industrial Estate
Ellerbeck Way
Stokesley
North Yorkshire
TS9 7AE

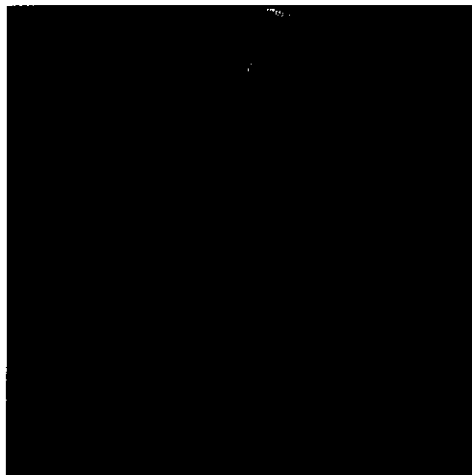
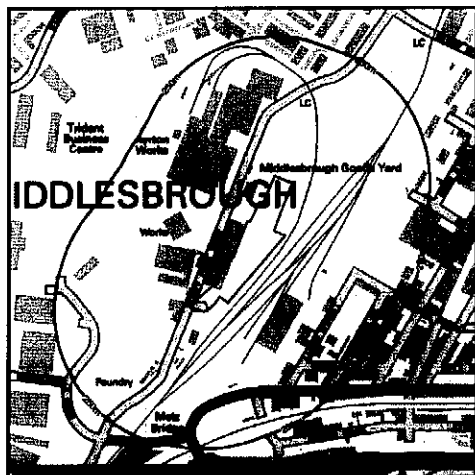
Report Reference: SCD_33761560_1_1

Report Date: 03-FEB-2011

Customer Reference: G11025

National Grid Reference: 448870 521010

Site Area: 12938 m²



If you have any questions on the contents of this Report please contact Landmark Customer Helpdesk which is open from 9:00am - 5:30pm, Monday - Friday, via one of the following channels:

Telephone: 0844 844 9966
Fax: 0844 844 9980
Email: info@landmarkinfo.co.uk
Website: www.sitecheck.co.uk

Report Sections and Details	Page
Summary of Site	-
This section comprises source, pathway and receptor information found on site. Other factors which may affect the site are also included.	
Aerial Photo	1
The aerial photo gives an overall view of the area. The smaller large-scale Ordnance Survey map includes the site boundary and search zone buffer at 250m.	
Location Map	2
The accurate large-scale Ordnance Survey map confirms the boundary of the subject site. The descriptive text may identify other features which could be of relevance but not reported. The smaller aerial photo includes the site boundary.	
Summary Table	3
This section comprises of a summary table of the information found on site and in its vicinity.	
Current Land Use	7
This section contains a map, which shows current land use features. The following pages detail these features and identify the Reference Number and direction.	
Historical Land Use	13
This section contains a map, which shows historical land use features. The following pages detail these features and identify the Reference Number and direction. A table listing all the maps used to source this information is included.	
Sensitivity	19
This section contains a map, which shows pathway and receptor features. The following pages detail these features and identify the Reference Number and direction. This section also contains a separate Flood Map and flood details.	
Other Factors	22
This section contains information on other factors which may affect the site and its vicinity.	
Useful Information	23
This section contains information which may be of use when interpreting the report.	
Useful Contacts	24
All textual information is linked by the 'Contact Ref' to this quick reference list of contacts. These contacts may be able to supply additional information or answer any subsequent query relating to that record.	

Historical Land Use	Page No.	Reference Number (Map ID)
Potentially Contaminative Uses		
Potentially Contaminative Industrial Uses (Past Land Use)		

Tanks, Scale of Mapping: 1:2,500, Date of Mapping: 1953

14

1

Tanks, Scale of Mapping: 1:1,250, Date of Mapping: 1952

14

1

Potentially Contaminative Industrial Uses (Past Land Use)

Metal casting/foundries,
Date of Mapping: 1899 - 1954

16

2

Heavy product manufacture - rolling and drawing of iron, steel and ferroalloys,
Date of Mapping: 1899 - 1954

16

3

Factory or works - use not specified,
Date of Mapping: 1993

16

4

Sensitivity	Page No.	Reference Number (Map ID)
Pathways		
Geological Classification		

Geological Classification: Non Aquifer (Negligibly permeable) - Formations which are generally regarded as containing insignificant quantities of groundwater. However, groundwater flow through such rocks, although imperceptible, does take place and needs to be considered in assessing the risk associated with persistent pollutants. Soil Classification: Not classified, Map Scale: 1:100,000, Map Name: Sheet 5 Tyne and Tees, Contact Ref: 1

21

-

Extreme Flooding from Rivers or Sea without Defences

Type: Extent of Extreme Flooding from Rivers or Sea without Defences, Contact Ref: 1

21

-

Flooding from Rivers or Sea without Defences

Type: Extent of Flooding from Rivers or Sea without Defences, Contact Ref: 1

21

-

Other Factors	Page No.	Reference Number (Map ID)
Geological		
Radon		

Affected Areas: The property is not in a radon affected area, as less than 1% of homes are above the action level. Source: British Geological Survey, National Geoscience Information Service, Contact Ref: 4

22

-

Other Factors	Page No	Reference Number (Map ID)
Geological		
Potential for Contamination from Groundwater		
Radon Protection Measures: None, Source: British Geological Survey, National Geoscience Information Service, Contact Ref: 4	22	-
Potential for Contamination from Groundwater		
Hazard Potential: Very Low, Contact Ref: 4	22	-
Potential for Contamination from Groundwater		
Hazard Potential: Very Low, Contact Ref: 4	22	-
Potential for Contamination from Groundwater		
Hazard Potential: Very Low, Contact Ref: 4	22	-
Potential for Contamination from Groundwater		
Hazard Potential: Very Low, Contact Ref: 4	22	-



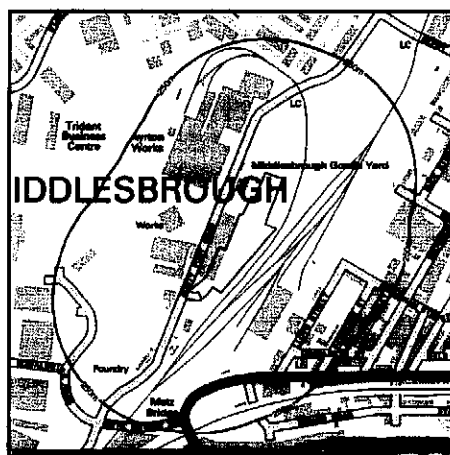
Site
BF Biogas Site, Forty Foot Road, Middlesbrough, TS2 1HG

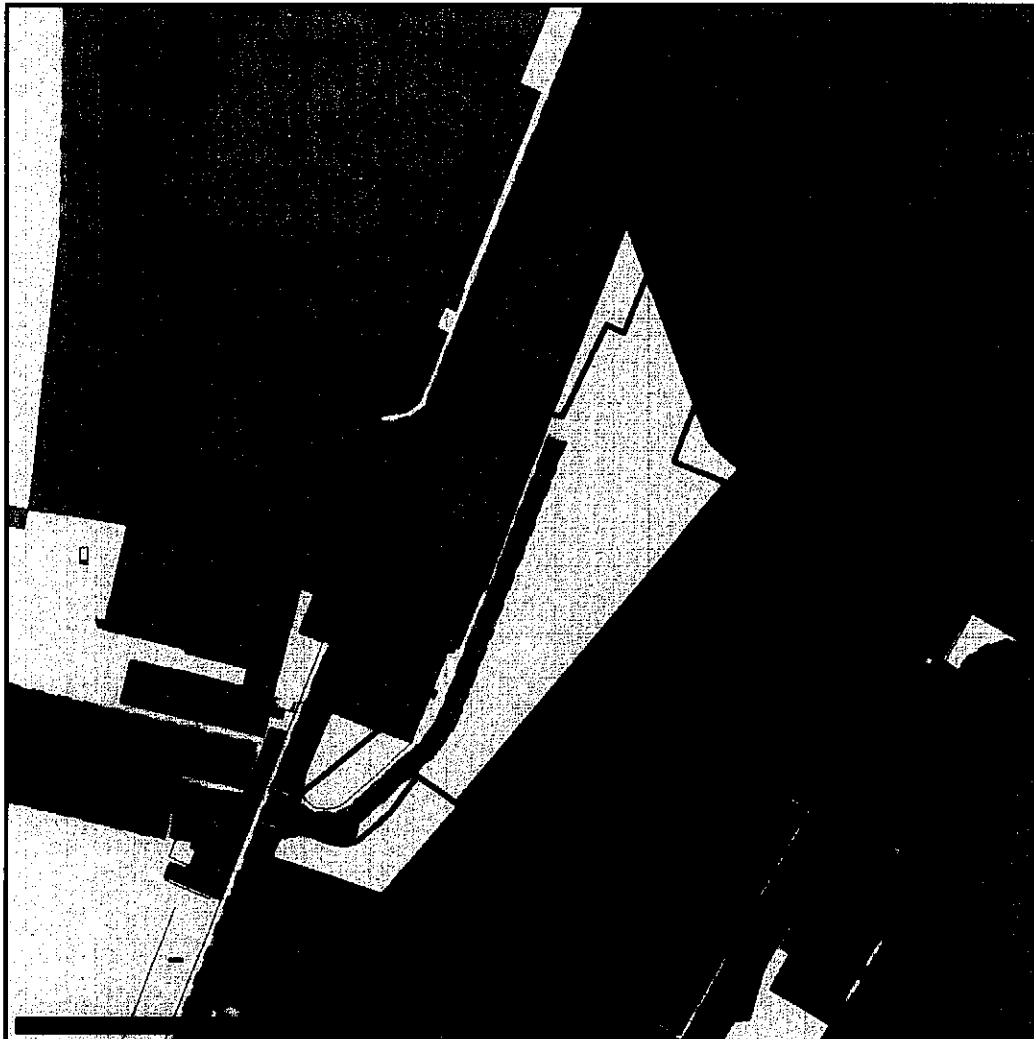
Grid Reference
448870, 521010

Report Reference
SCD_33761560_1_1

Customer Reference
G11025

Size of Site
12938 m²





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Grid Reference
448870, 521010

Report Reference
SCD_33761560_1_1

Customer Reference
G11025

Size of Site
12938 m²



Current Land Use	On Site	0-250m
Sources	0	46
Waste / Landfill Sites		
BGS Recorded Landfill Sites	0	0
Licensed Waste Management Facilities (Landfill Boundaries)	0	0
Licensed Waste Management Facilities (Locations)	0	3
Local Authority Recorded Landfill Sites	0	0
Registered Landfill Sites	0	1
Registered Waste Transfer Sites	0	2
Registered Waste Treatment or Disposal Sites	0	0
Statutory Authorisations		
Local Authority Pollution Prevention and Controls	0	5
Contaminated Land Register Entries and Notices	0	0
Registered Radioactive Substances	0	0
Discharge Consents		
Discharge Consents	0	2
Water Industry Act Referrals	0	0
Industrial Processes		
Integrated Pollution Controls	0	0
Integrated Pollution Control Registered Waste Sites	0	0
Integrated Pollution Prevention And Control	0	2
Local Authority Integrated Pollution Prevention And Control	0	0
Storage of Hazardous Substances		
Control of Major Accident Hazards Sites (COMAH)	0	0
Explosive Sites	0	0
Notification of Installations Handling Hazardous Substances (NIHHS)	0	0
Planning Hazardous Substance Consents	0	1
Contraventions		
Local Authority Pollution Prevention and Control Enforcements	0	0
Enforcement and Prohibition Notices	0	0
Planning Hazardous Substance Enforcements	0	0
Prosecutions Relating to Authorised Processes	0	1
Prosecutions Relating to Controlled Waters	0	0
Substantiated Pollution Incident Register	0	1

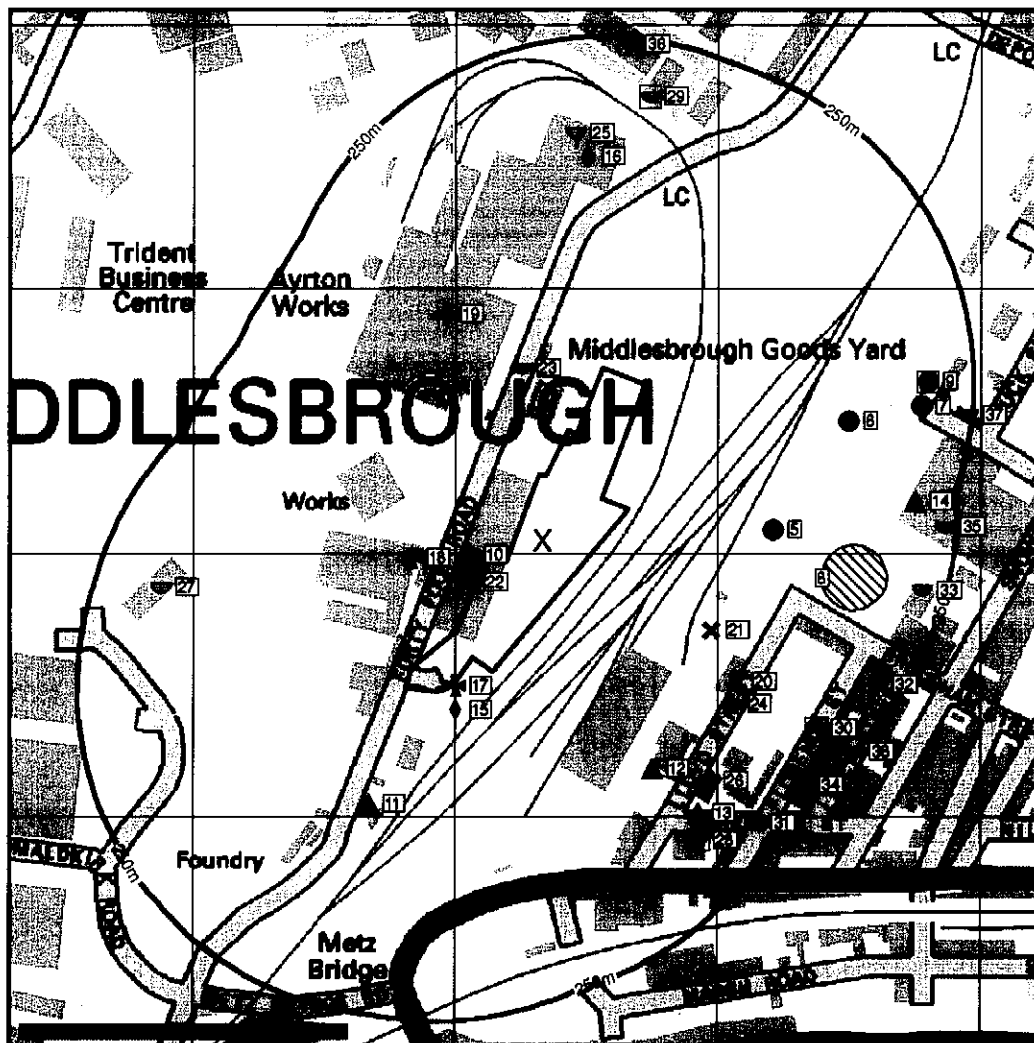
Current Land Use	On Site	0-250m
Sources	0	46
Potentially Contaminative Sites		
Contemporary Trade Directory Entries	0	28
Fuel Station Entries	0	0
Miscellaneous		
BGS Recorded Mineral Sites	0	0

Historical Land Use	On Site	0-250m
Sources	5	80
Potentially Contaminative Sites		
Historical Tanks And Energy Facilities	2	55
Potentially Contaminative Industrial Uses (Past Land Use)	3	9
Potentially Infilled Land		
Former Marshes	0	1
Potentially Infilled Land (Non-Water)	0	0
Potentially Infilled Land (Water)	0	15

Sensitivity	On Site	0-250m
Pathways and Receptors	3	0
Pathways		
Groundwater Vulnerability	1	n/a
Drift Deposits	0	n/a
Historical Flood Liabilities	0	0
Extreme Flooding from Rivers or Sea without Defences	1	0
Flooding from Rivers or Sea without Defences	1	0
Areas Benefiting from Flood Defences	0	0
Flood Water Storage Areas	0	0
Flood Defences	0	0

Sensitivity	On Site	0-250m
Pathways and Receptors	3	0
Environmental Receptors		
Areas of Outstanding Natural Beauty	0	0
Environmentally Sensitive Areas	0	0
Local Nature Reserves	0	0
Marine Nature Reserves	0	0
National Nature Reserves	0	0
Nearest Surface Water Feature	0	0
Ramsar Sites	0	0
Sites of Special Scientific Interest	0	0
Source Protection Zones	0	0
Special Areas of Conservation	0	0
Special Protection Areas	0	0
Water Abstractions	0	0
Protected Countryside Areas		
Forest Parks	0	0
National Parks	0	0
National Scenic Areas	0	0

Other Factors	On Site	0-250m
Geological	6	2
Brine Compensation Area	0	n/a
Coal Mining Affected Areas	0	n/a
Mining Instability	0	0
Man-Made Mining Cavities	0	0
Natural Cavities	0	0
Potential for Collapsible Ground Stability Hazards	0	0
Radon Potential - Radon Affected Areas	1	n/a
Radon Potential - Radon Protection Measures	1	n/a
Potential for Compressible Ground Stability Hazards	1	1
Potential for Ground Dissolution Stability Hazards	0	0
Potential for Landslide Ground Stability Hazards	1	0
Potential for Running Sand Ground Stability Hazards	1	1
Potential for Shrinking or Swelling Clay Ground Stability Hazards	1	0
Non Coal Mining Areas of Great Britain	0	0



General	Waste/Landfill Sites		Contraventions	Storage Of Hazardous Substances	Statutory Authorisations
Site Boundary	BGS Recorded Landfill Site	BGS Recorded Landfill Site (Point)	Local Authority Pollution Prevention and Control Enforcement	COMAH	Local Authority Pollution Prevention and Control
Search Buffer	Licensed Waste Management Facilities (Landfill)	Licensed Waste Management Facilities (Location)	Planning Hazardous Substance Enforcement	Explosive Site	Contaminated Land Register Entry or Notice (Point)
Bearing Reference Point	Local Authority Recorded Landfill Site	Local Authority Recorded Landfill Site (Point)	Prosecution Relating to Authorised Processes	NHHS	Contaminated Land Register Entry or Notice
Reference Number	Registered Waste Transfer Site	Registered Waste Transfer Site (Point)	Enforcement and Prohibition Notice	Industrial Processes	Registered Radioactive Substance
Miscellaneous	Registered Waste Treatment or Disposal Site	Registered Waste Treatment or Disposal Site (Point)	Substantiated Pollution Incident Register	Integrated Pollution Prevention Control	Discharge Consents
BGS Recorded Mineral Site	Registered Landfill Site	Registered Landfill Site Potential Landfill Buffer	Prosecution Relating to Controlled Waters	Integrated Pollution Control Registered Waste Site	Discharge Consent
Potentially Contaminative Use	Point Location of Registered Landfill Site			Local Authority Integrated Pollution Prevention and Control	Water Industry Act Referral
Potentially Contaminative Use					

Sources	Ref No.	Search Buffer	Direction
Waste / Landfill Sites			
Local Authority Waste Coverage			

Name: Middlesbrough Unitary Council, - Has no landfill data to supply, Contact Ref: 5

-

On Site

NW

Licensed Waste Management Facilities (Locations)

Location: Land/premises At, Lloyd Street, Middlesbrough, Cleveland, TS2 1DW, Licence Number: 66055, Site Category: Household, Commercial And Industrial Transfer Stations, Licence Status: Issued, IPPC Reference: Not Supplied Positional Accuracy: Located by supplier to within 10m, Contact Ref: 1

5

0-250m

E

Location: Marsh Road Garage, Middlesbrough, Cleveland, TS1 5LB, Licence Number: 60096, Site Category: Landfills Taking Non-biodegradable Wastes (Not Construction), Licence Status: Surrendered, IPPC Reference: Not Supplied Positional Accuracy: Located by supplier to within 100m, Contact Ref: 1

6

0-250m

E

Location: Land/ Premises At, Richmond Street, Middlesbrough, Cleveland, TS2 1LN, Licence Number: 60107, Site Category: Household, Commercial And Industrial Transfer Stations, Licence Status: Issued, IPPC Reference: Not Supplied Positional Accuracy: Located by supplier to within 10m, Contact Ref: 1

7

0-250m

E

Registered Landfill Sites

A Buckler (Haulage) Ltd, Disused Gasholder At Snowdon Road, Middlesbrough, Cleveland, Reference: CLE 137/2, Status: Licence lapsed/cancelled/defunct/not applicable/surrendered, Cancelled, Positional Accuracy: Positioned by the supplier, Boundary Quality: Good, Contact Ref: 1

8

0-250m

E

Registered Waste Transfer Sites

A Coxon t/a T P Skip Hire, TP Metals Skip Hire, Richmond Street, MIDDLESBROUGH, Cleveland, TS2 1LL, Reference: CLE 214/4, Status: Operational as far as is known, Operational, Positional Accuracy: Located by supplier to within 100m, Boundary Quality: Not Supplied Contact Ref: 1

9

0-250m

E

A Coxon t/a T P Skip Hire, TP Metals Skip Hire, Richmond Street, MIDDLESBROUGH, Cleveland, TS2 1LL, Reference: CLE 214/2, Status: Record superseded, Superseded, Positional Accuracy: Located by supplier to within 100m, Boundary Quality: Not Supplied Contact Ref: 1

9

0-250m

E

Statutory Authorisations	Ref No.	Search Buffer	Direction
Local Authority Waste Coverage			

William Lane Ltd, Forty Foot Road, MIDDLESBROUGH, Cleveland, TS2 1HG, Part B - Metal Industry Sector, Reference: 16, Status: Permitted, Positional Accuracy: Automatically positioned to the address, Contact Ref: 2

10

0-250m

SW

Castle Cement Ltd, Middlesbrough Depot, Forty Foot Road, MIDDLESBROUGH, Cleveland, TS2 1HG, Part B - Mineral Industry Sector, Reference: 9, Status: Permitted, Positional Accuracy: Manually positioned to the address or location, Contact Ref: 2

11

0-250m

SW

Sources	Ref No.	Search Buffer	Direction
Statutory Authorisations			
Local Authorities			
Dave Stott Motors, Charlotte Street, Middlesbrough, TS2 1dt, Part B - Fuel and Power Industry Sector, Reference: Not Supplied, Status: Permitted, Positional Accuracy: Manually positioned to the address or location, Contact Ref: 2	12	0-250m	SE
Weschenfelder Sausage Casings, North Road, MIDDLESBROUGH, Cleveland, TS2 1DD, Part B - Other Industries, Reference: 26, Status: Permitted, Positional Accuracy: Manually positioned to the address or location, Contact Ref: 2	13	0-250m	SE
Buckler Demolition, Washington Street, Middlesbrough, TS2 1DW, Part B - Mineral Industry Sector, Reference: Not Supplied, Status: Permitted, Positional Accuracy: Located by supplier to within 10m, Contact Ref: 2	14	0-250m	E

Discharge Consents	Ref No.	Search Buffer	Direction
Discharge Consents			
Autospares, Autospares Office, Forty Foot Road, Middlesbrough, Sewage Discharge, Reference: 254/0423, Version: 1, Status: Lapsed (under Environment Act 1995, Schedule 23), Positional Accuracy: Located by supplier to within 100m, Contact ref: 1	15	0-250m	SW
A V Dawson Ltd, Ayrton Works, Building No 9, Middlesbrough, Sewage Discharge, Reference: 254/0370, Version: 1, Status: Lapsed (under Environment Act 1995, Schedule 23), Positional Accuracy: Located by supplier to within 100m, Contact ref: 1	16	0-250m	N

Industrial Processes	Ref No.	Search Buffer	Direction
Industrial Processes			
D1 (Uk) Ltd, Biodiesel Pilot Plant, D1 Oils, Forty Foot Road,, MIDDLESBROUGH, Cleveland, TS2 1HG, Integrated Pollution And Prevention Control Processes, Reference: MP3634TF, Status: Valid, Positional Accuracy: Located by supplier to within 100m, Contact Ref: 1	17	0-250m	SW
D1 (Uk) Ltd, Biodiesel Pilot Plant, Forty Foot Road, Ironmasters, Middlesbrough, Cleveland, TS2 1HG, Integrated Pollution And Prevention Control Processes, Reference: NP3639LN, Status: Effective, Positional Accuracy: Manually positioned to the address or location, Contact Ref: 1	18	0-250m	SW

Storage of Hazardous Substances	Ref No.	Search Buffer	Direction
Planning			
A V Dawson, Forty Foot Road, MIDDLESBROUGH, Cleveland, TS, Storage of Toxic Substances, Reference: Thm1412/93, Status: New application refused, Refused, Positional Accuracy: Manually positioned to the address or location, Contact Ref: 3	19	0-250m	NW

Brought to you by Landmark

Sources	Ref No.	Search Buffer	Direction
Contraventions			
Potentially Contaminative Uses			

Lloyd Street, Middlesbrough, TS2, EA Prosecution Notice, Hearing Date: 13th September 2006, Positional Accuracy: Manually positioned to the road within the address or location, Contact Ref: 1

20

0-250m

SE

Substantiated Pollution Incident Register

Authority: Environment Agency - North East Region, North East Area, Incident Date: 8th May 2002, Incident Reference: 77153, Water Impact: Category 4 - No Impact, Air Impact: Category 2 - Significant Incident, Land Impact: Category 3 - Minor Incident, Positional Accuracy: Located by supplier to within 10m, Contact Ref: 1
Pollutant: Atmospheric Pollutants And Effects: Effects On Humans,

21

0-250m

SE

Potentially Contaminative Uses	Ref No.	Search Buffer	Direction
Contraventions			

Mmc Group Ltd, Forty Foot Road, Middlesbrough, Cleveland, TS2 1HG, Precision Engineers, Status: Inactive, Positional Accuracy: Automatically positioned to the address

22

0-250m

SW

W Lane Ltd, Forty Foot Road, Middlesbrough, Cleveland, TS2 1HG, Foundries, Status: Active, Positional Accuracy: Automatically positioned to the address

22

0-250m

SW

Xena Systems Ltd, Forty Foot Rd, Middlesbrough, Cleveland, TS2 1HG, Scaffolding & Work Platforms, Status: Active, Positional Accuracy: Manually positioned within the geographical locality

22

0-250m

SW

Durham Lifting Ltd, Britannia Testhouse, Forty Foot Rd, Middlesbrough, Cleveland, TS2 1HG, Lifting Equipment, Status: Inactive, Positional Accuracy: Manually positioned to the road within the address or location

23

0-250m

N

Towne Timber, Lloyd Street, Middlesbrough, Cleveland, TS2 1DL, Sawmills & Wood Shavings, Status: Active, Positional Accuracy: Manually positioned to the road within the address or location

24

0-250m

SE

A V Dawson Ltd, Ayrton Works, Forty Foot Road, Middlesbrough, Cleveland, TS2 1HG, Road Haulage Services, Status: Inactive, Positional Accuracy: Automatically positioned to the address

25

0-250m

N

Dave Stott, Charlotte Street, Middlesbrough, Cleveland, TS2 1DT, Garage Services, Status: Active, Positional Accuracy: Automatically positioned to the address

26

0-250m

SE

Durham Lifting Ltd, Britannia Test House, Romalldkirk Road, Middlesbrough, Cleveland, TS2 1HB, Lifting Equipment, Status: Active, Positional Accuracy: Automatically positioned to the address

27

0-250m

W

Weschenfelder Ltd, North Road, Middlesbrough, Cleveland, TS2 1DD, Catering Equipment, Status: Active, Positional Accuracy: Automatically positioned to the address

28

0-250m

SE

W Weschenfelder & Sons, North Road, Middlesbrough, Cleveland, TS2 1DD, Catering Equipment, Status: Active, Positional Accuracy: Automatically positioned to the address

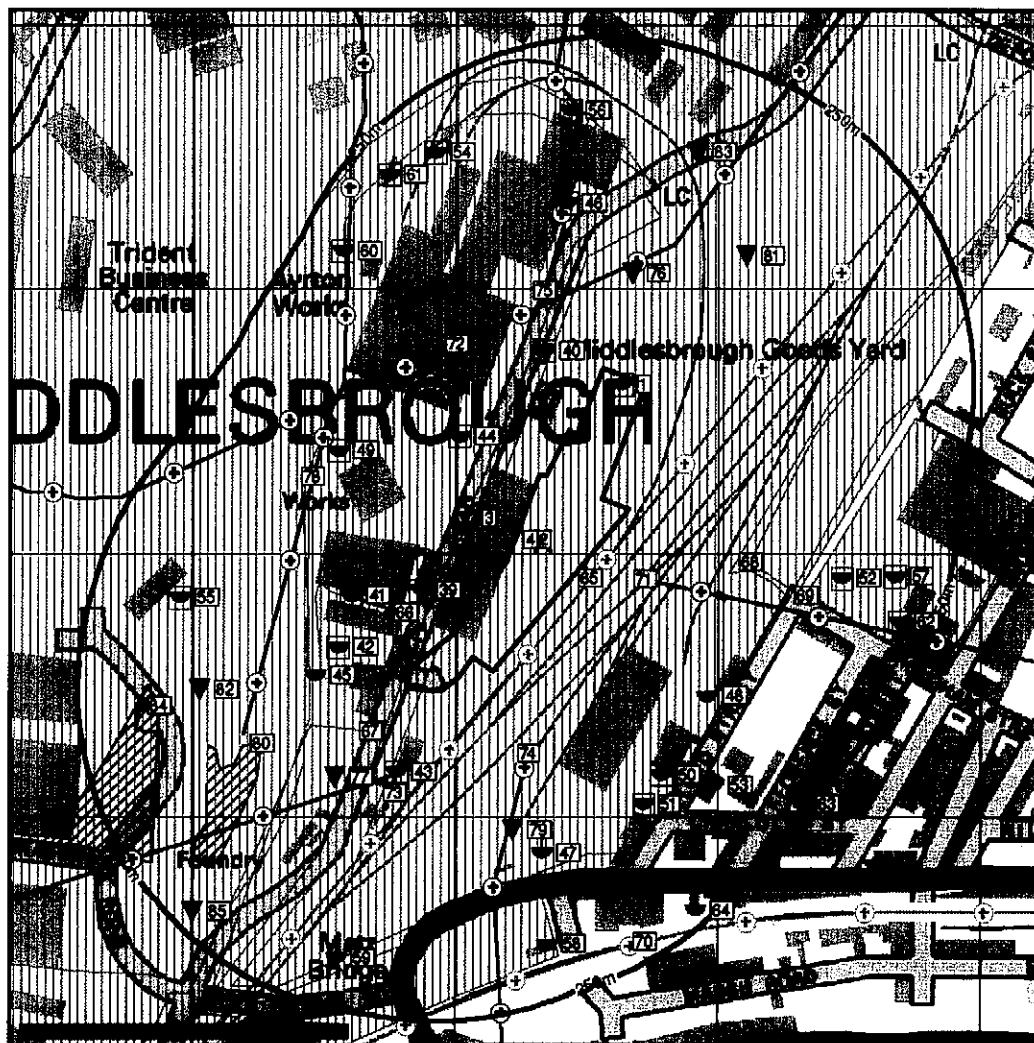
28

0-250m

SE

Sources	Ref No.	Search Buffer	Direction
Potentially Contaminative Uses			
Commercial Land Use Potential			
Auto Weld, 33 North Rd, Middlesbrough, Cleveland, TS2 1DD, Garage Services, Status: Active, Positional Accuracy: Manually positioned within the geographical locality	28	0-250m	SE
Food Network Corporation Ltd, 1-6, Harwood Court, Riverside Park Industrial Estate, Middlesbrough, Cleveland, TS2 1PU, Food Products - Manufacturers, Status: Active, Positional Accuracy: Automatically positioned to the address	29	0-250m	N
Food Network Co-Op Ltd, 1-2, Harwood Court, Riverside Park Industrial Estate, Middlesbrough, Cleveland, TS2 1PU, Food Products - Manufacturers, Status: Inactive, Positional Accuracy: Automatically positioned to the address	29	0-250m	N
Wellington Garage, Florence St, Middlesbrough, Cleveland, TS2 1DR, Garage Services, Status: Inactive, Positional Accuracy: Manually positioned to the road within the address or location	30	0-250m	SE
Multicoat (North East) Ltd, 3 Florence St, Middlesbrough, Cleveland, TS2 1DR, Powder Coatings, Status: Active, Positional Accuracy: Manually positioned to the road within the address or location	30	0-250m	SE
G & J Auto Services, Florence St, Middlesbrough, Cleveland, TS2 1DR, Mechanical Engineers, Status: Inactive, Positional Accuracy: Manually positioned to the road within the address or location	30	0-250m	SE
Boro Autos, Charlotte St, Middlesbrough, Cleveland, TS2 1BT, Car Breakers & Dismantlers, Status: Inactive, Positional Accuracy: Manually positioned to the road within the address or location	31	0-250m	SE
Warrenmace Engineering Services Ltd, 1, Florence Street, Middlesbrough, Cleveland, TS2 1DR, Plant & Machinery Repairs, Status: Inactive, Positional Accuracy: Automatically positioned to the address	32	0-250m	SE
The Paint & Body Centre, Washington Street, Middlesbrough, Cleveland, TS2 1DW, Garage Services, Status: Active, Positional Accuracy: Automatically positioned to the address	33	0-250m	E
Wellington Garage, Florence Street, Middlesbrough, Cleveland, TS2 1DR, Garage Services, Status: Inactive, Positional Accuracy: Automatically positioned to the address	34	0-250m	SE
Cleveland Beetles, Florence Street, Middlesbrough, Cleveland, TS2 1DR, Classic Car Specialists, Status: Inactive, Positional Accuracy: Automatically positioned to the address	34	0-250m	SE
Martrac, Florence Street, Middlesbrough, Cleveland, TS2 1DR, Powder Coatings, Status: Inactive, Positional Accuracy: Automatically positioned to the address	34	0-250m	SE
Richmond & Brown, Florence Street, Middlesbrough, Cleveland, TS2 1DR, Joinery Manufacturers, Status: Active, Positional Accuracy: Automatically positioned to the address	34	0-250m	SE
Stanley Vickers Ltd, 6, Snowdon Road, Middlesbrough, Cleveland, TS2 1LG, Engineers - General, Status: Active, Positional Accuracy: Automatically positioned to the address	35	0-250m	E
Adj Fabrications Ltd, 8c, Bowes Road, Middlesbrough, Cleveland, TS2 1LU, Sheet Metal Work, Status: Active, Positional Accuracy: Automatically positioned to the address	36	0-250m	N
The Laundry, Unit 8c-8d, Bowes Road, Middlesbrough, Cleveland, TS2 1LU, Laundries & Launderettes, Status: Active, Positional Accuracy: Manually positioned to the address or location	36	0-250m	N

Sources	Ref No.	Search Buffer	Direction
Potentially Contaminative Uses			
Commercial and Industrial			
Buck Street Motors, 1, Buck Street, Middlesbrough, Cleveland, TS2 1LW, Car Breakers & Dismantlers, Status: Inactive, Positional Accuracy: Automatically positioned to the address	37	0-250m	E
Chris White, 7 Italy St, Middlesbrough, Cleveland, TS2 1DP, Car Body Repairs, Status: Inactive, Positional Accuracy: Manually positioned to the road within the address or location	38	0-250m	SE



General	Potentially Contaminative Use	Potentially Infilled Land
□ Site Boundary	▽ Point Feature	▽ Point Feature
▨ Search Buffer	▨ Area Feature	▨ Area Feature
× Bearing Reference Point	◆ Line Feature	◆ Line Feature
■ Reference Number		

Sources	Ref No.	Search Buffer	Direction
Potentially Contaminative Uses			
Potentially Contaminative Uses			
Tanks, Scale of Mapping: 1:2,500, Date of Mapping: 1953	1	On Site	NE
Tanks, Scale of Mapping: 1:1,250, Date of Mapping: 1952	1	On Site	NE
Tanks, Scale of Mapping: 1:2,500, Date of Mapping: 1954	39	0-250m	W
Tanks, Scale of Mapping: 1:1,250, Date of Mapping: 1953	39	0-250m	W
Electrical Sub Station Facilities, Scale of Mapping: 1:2,500, Date of Mapping: 1970	40	0-250m	N
Electrical Sub Station Facilities, Scale of Mapping: 1:1,250, Date of Mapping: 1968	40	0-250m	N
Tanks, Scale of Mapping: 1:1,250, Date of Mapping: 1953	41	0-250m	SW
Tanks, Scale of Mapping: 1:2,500, Date of Mapping: 1954	41	0-250m	W
Electrical Sub Station Facilities, Scale of Mapping: 1:2,500, Date of Mapping: 1954	42	0-250m	SW
Electrical Sub Station Facilities, Scale of Mapping: 1:1,250, Date of Mapping: 1953 - 1970	42	0-250m	SW
Tanks, Scale of Mapping: 1:1,250, Date of Mapping: 1987	43	0-250m	SW
Miscellaneous Power Facilities, Scale of Mapping: 1:2,500, Date of Mapping: 1953	44	0-250m	NW
Miscellaneous Power Facilities, Scale of Mapping: 1:1,250, Date of Mapping: 1952	44	0-250m	NW
Electrical Sub Station Facilities, Scale of Mapping: 1:1,250, Date of Mapping: 1987	43	0-250m	SW
Electrical Sub Station Facilities, Scale of Mapping: 1:1,250, Date of Mapping: 1987	45	0-250m	SW
Electrical Sub Station Facilities, Scale of Mapping: 1:2,500, Date of Mapping: 1953 - 1970	46	0-250m	N
Electrical Sub Station Facilities, Scale of Mapping: 1:1,250, Date of Mapping: 1952 - 1968	46	0-250m	N
Tanks, Scale of Mapping: 1:1,250, Date of Mapping: 1987	47	0-250m	S
Tanks, Scale of Mapping: 1:1,250, Date of Mapping: 1987	48	0-250m	SE
Electrical Sub Station Facilities, Scale of Mapping: 1:2,500, Date of Mapping: 1953 - 1970	49	0-250m	NW
Electrical Sub Station Facilities, Scale of Mapping: 1:1,250, Date of Mapping: 1952 - 1968	49	0-250m	NW
Tanks, Scale of Mapping: 1:2,500, Date of Mapping: 1954	50	0-250m	SE
Tanks, Scale of Mapping: 1:1,250, Date of Mapping: 1953	50	0-250m	SE
Oil Industry Facilities, Scale of Mapping: 1:2,500, Date of Mapping: 1954	51	0-250m	S
Oil Industry Facilities, Scale of Mapping: 1:1,250, Date of Mapping: 1953 - 1970	50	0-250m	S
Tanks, Scale of Mapping: 1:1,250, Date of Mapping: 1970	51	0-250m	S
Tanks, Scale of Mapping: 1:1,250, Date of Mapping: 1953 - 1970	50	0-250m	SE

Sources	Ref No	Search Buffer	Direction
Potentially Contaminative Uses			
Industrial Land Use			
Tanks, Scale of Mapping: 1:2,500, Date of Mapping: 1954	50	0-250m	SE
Gas Industry Facilities, Scale of Mapping: 1:1,250, Date of Mapping: 1968	52	0-250m	E
Gas Industry Facilities, Scale of Mapping: 1:2,500, Date of Mapping: 1970	52	0-250m	E
Gas Industry Facilities, Scale of Mapping: 1:1,250, Date of Mapping: 1953	52	0-250m	E
Gas Industry Facilities, Scale of Mapping: 1:2,500, Date of Mapping: 1954	52	0-250m	E
Gas Industry Facilities, Scale of Mapping: 1:1,250, Date of Mapping: 1970 - 1984	52	0-250m	E
Potential Tanks, Scale of Mapping: 1:1,250, Date of Mapping: 1987	53	0-250m	SE
Tanks, Scale of Mapping: 1:1,250, Date of Mapping: 1968	54	0-250m	N
Tanks, Scale of Mapping: 1:2,500, Date of Mapping: 1954	55	0-250m	W
Tanks, Scale of Mapping: 1:2,500, Date of Mapping: 1970	54	0-250m	N
Tanks, Scale of Mapping: 1:1,250, Date of Mapping: 1953	55	0-250m	W
Electrical Sub Station Facilities, Scale of Mapping: 1:1,250, Date of Mapping: 1968	56	0-250m	N
Electrical Sub Station Facilities, Scale of Mapping: 1:2,500, Date of Mapping: 1970	56	0-250m	N
Tanks, Scale of Mapping: 1:2,500, Date of Mapping: 1953 - 1970	54	0-250m	N
Tanks, Scale of Mapping: 1:1,250, Date of Mapping: 1952 - 1968	54	0-250m	N
Tanks, Scale of Mapping: 1:2,500, Date of Mapping: 1953	54	0-250m	N
Tanks, Scale of Mapping: 1:1,250, Date of Mapping: 1952	54	0-250m	N
Tanks, Scale of Mapping: 1:2,500, Date of Mapping: 1954	57	0-250m	E
Electrical Sub Station Facilities, Scale of Mapping: 1:1,250, Date of Mapping: 1987	58	0-250m	S
Tanks, Scale of Mapping: 1:1,250, Date of Mapping: 1953	57	0-250m	E
Potential Tanks, Scale of Mapping: 1:1,250, Date of Mapping: 1987	59	0-250m	SW
Electrical Sub Station Facilities, Scale of Mapping: 1:2,500, Date of Mapping: 1953 - 1970	60	0-250m	NW
Electrical Sub Station Facilities, Scale of Mapping: 1:1,250, Date of Mapping: 1952 - 1968	60	0-250m	NW
Electrical Sub Station Facilities, Scale of Mapping: 1:2,500, Date of Mapping: 1970	61	0-250m	NW
Electrical Sub Station Facilities, Scale of Mapping: 1:1,250, Date of Mapping: 1968	61	0-250m	NW
Tanks, Scale of Mapping: 1:2,500, Date of Mapping: 1954	62	0-250m	E
Tanks, Scale of Mapping: 1:1,250, Date of Mapping: 1953	62	0-250m	E

Sources	Ref No.	Search Buffer	Direction
Potentially Contaminative Uses			
Potentially Contaminative Agricultural Uses			
Potential Tanks, Scale of Mapping: 1:1,250, Date of Mapping: 1984	63	0-250m	SE
Tanks, Scale of Mapping: 1:1,250, Date of Mapping: 1970 - 1987	64	0-250m	S
Potential Tanks, Scale of Mapping: 1:1,250, Date of Mapping: 1984	63	0-250m	SE
Potentially Contaminative Industrial Uses (Past Land Use)			
Metal casting/foundries, Date of Mapping: 1899 - 1954	2	On Site	NW
Heavy product manufacture - rolling and drawing of iron, steel and ferroalloys, Date of Mapping: 1899 - 1954	3	On Site	W
Factory or works - use not specified, Date of Mapping: 1993	4	On Site	NW
Railways, Date of Mapping: 1857	65	0-250m	SE
Machinery: engines, building and general industrial [manufacture], Date of Mapping: 1895	66	0-250m	SW
Railways, Date of Mapping: 1899 - 1954	67	0-250m	SW
Coal storage and depot, Date of Mapping: 1923 - 1954	68	0-250m	E
Clay bricks & tiles [manufacture], Date of Mapping: 1895	46	0-250m	N
Electricity production & distribution [inc large transformers], Date of Mapping: 1923 - 1938	69	0-250m	E
Oil, petroleum & gas refining & storage, Date of Mapping: 1899	52	0-250m	E
Oil, petroleum & gas refining & storage, Date of Mapping: 1954 - 1993	52	0-250m	E
Railways, Date of Mapping: 1857 - 1993	70	0-250m	S

Potentially Infilled Land	Ref No.	Search Buffer	Direction
Former Marsh			
Former Marsh, Date of Mapping: 1857,	-	0-250m	W

Sources	Ref No.	Search Buffer	Direction
Potentially Infilled Land			
Unknown Filled Ground (Pond, marsh, river, stream, dock etc), Date of Mapping: 1857	71	0-250m	E
Unknown Filled Ground (Pond, marsh, river, stream, dock etc), Date of Mapping: 1857	72	0-250m	NW
Unknown Filled Ground (Pond, marsh, river, stream, dock etc), Date of Mapping: 1857	73	0-250m	SW
Unknown Filled Ground (Pond, marsh, river, stream, dock etc), Date of Mapping: 1857	74	0-250m	S
Unknown Filled Ground (Pond, marsh, river, stream, dock etc), Date of Mapping: 1857	75	0-250m	N
Unknown Filled Ground (Pond, marsh, river, stream, dock etc), Date of Mapping: 1954	76	0-250m	N
Unknown Filled Ground (Pond, marsh, river, stream, dock etc), Date of Mapping: 1857	77	0-250m	SW
Unknown Filled Ground (Pond, marsh, river, stream, dock etc), Date of Mapping: 1857	78	0-250m	W
Unknown Filled Ground (Pond, marsh, river, stream, dock etc), Date of Mapping: 1857	79	0-250m	S
Unknown Filled Ground (Pond, marsh, river, stream, dock etc), Date of Mapping: 1899	80	0-250m	SW
Unknown Filled Ground (Pond, marsh, river, stream, dock etc), Date of Mapping: 1857	81	0-250m	NE
Unknown Filled Ground (Pond, marsh, river, stream, dock etc), Date of Mapping: 1895	82	0-250m	SW
Unknown Filled Ground (Pond, marsh, river, stream, dock etc), Date of Mapping: 1857	83	0-250m	N
Unknown Filled Ground (Pond, marsh, river, stream, dock etc), Date of Mapping: 1895	84	0-250m	SW
Unknown Filled Ground (Pond, marsh, river, stream, dock etc), Date of Mapping: 1899	85	0-250m	SW

Map Details

The following maps have been analysed for Potentially Contaminative Uses and Potentially

1:1,250

	Mapsheet	Published
Ordnance Survey Plan	NZ4821SE	1952
Ordnance Survey Plan	NZ4820NE	1953
Ordnance Survey Plan	NZ4821SE	1968
Ordnance Survey Plan	NZ4820NE	1970
Ordnance Survey Plan	NZ4820NE	1987

1:2,500

	Mapsheet	Published
Ordnance Survey Plan	NZ4821	1953
Ordnance Survey Plan	NZ4820	1954
Ordnance Survey Plan	NZ4821	1970

The following maps have been analysed for Potentially Contaminative Uses and Potentially Infilled Land Information

1:10,000

	Mapsheet	Published
Ordnance Survey Plan	NZ42SE	1993

1:10,000

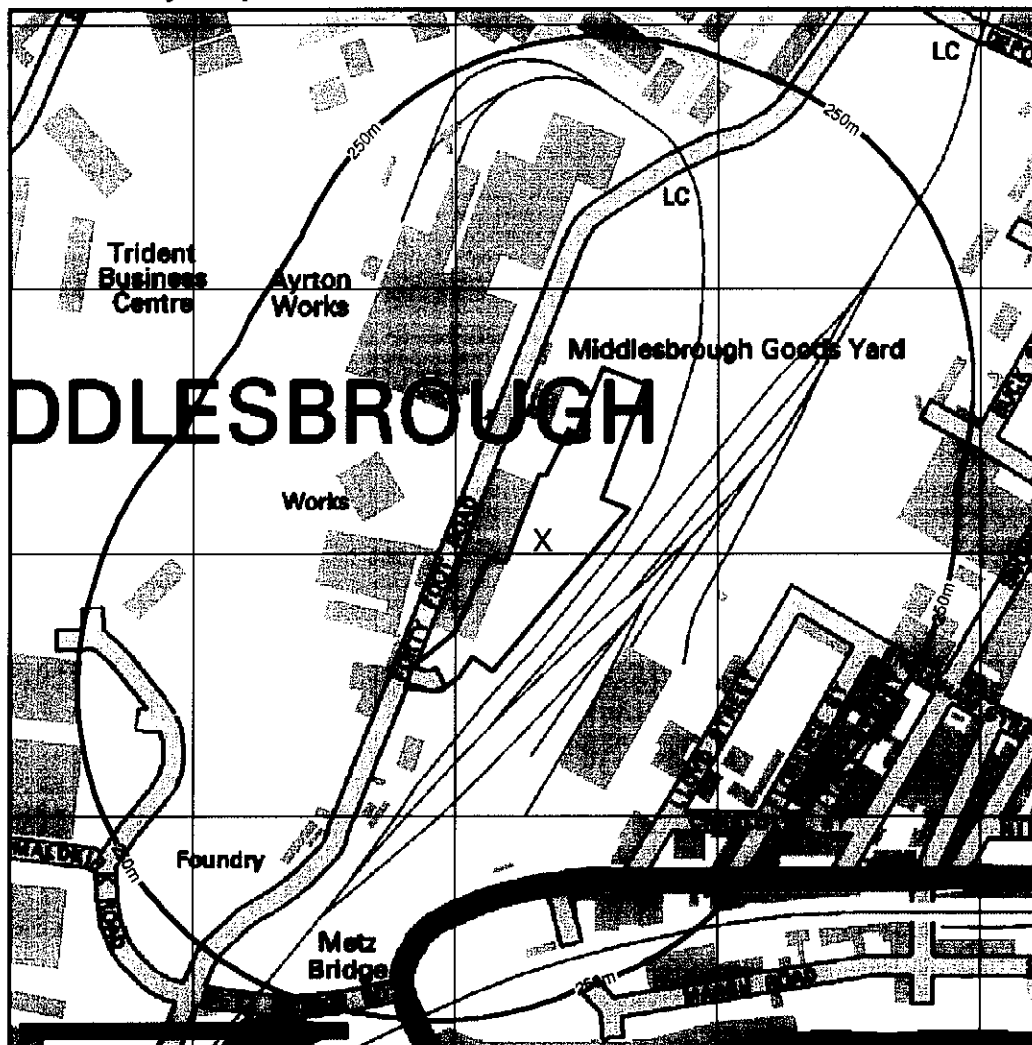
	Mapsheet	Published
Yorkshire	006_00	1857
Durham	051_00	1859
Yorkshire	006_SW	1895
Durham	051_NW	1899
Yorkshire	006_SW	1920
Durham	051_00	1923
Yorkshire	006_SW	1938
Durham	051_NW	1938
Ordnance Survey Plan	NZ42SE	1954

Flood Map



General		Area of Floodplain	
	Site Boundary		Areas Benefiting from Flood Defences
	Search Buffer		Flood Water Storage Areas
	Bearing Reference Point		Flood Defences
	Reference Number		Extreme Flooding from Rivers or Sea without Defences (Zone 2)
			Flooding from Rivers or Sea without Defences (Zone 3)

Sensitivity Map



General	Environmentally Sensitive Land Use		Protected Countryside Areas
Site Boundary	Area of Outstanding Natural Beauty	Site of Special Scientific Interest	Forest Park
Search Buffer	Environmentally Sensitive Area	Special Area of Conservation	National Park
Bearing Reference Point	Local Nature Reserve	Special Protection Area	National Scenic Area
Reference Number	Marine Nature Reserve	Nearest Surface Water Feature	
	National Nature Reserve	Water Abstractions	
	Ramsar Site		

Pathways and Receptors	Ref No.	Search Buffer	Direction
Groundwater Receptors			
Geological Classification: Non Aquifer (Negligibly permeable) - Formations which are generally regarded as containing insignificant quantities of groundwater. However, groundwater flow through such rocks, although imperceptible, does take place and needs to be considered in assessing the risk associated with persistent pollutants. Soil Classification: Not classified, Map Scale: 1:100,000, Map Name: Sheet 5 Tyne and Tees, Contact Ref: 1	-	On Site	NW
Soil Receptors			
None	-		
Extreme Flooding from Rivers or Sea without Defences			
Type: Extent of Extreme Flooding from Rivers or Sea without Defences, Contact Ref: 1	-	On Site	NW
Flooding from Rivers or Sea without Defences			
Type: Extent of Flooding from Rivers or Sea without Defences, Contact Ref: 1	-	On Site	NW
Air Receptors (Ground Level)			
None	-		
Flood Water Receptor Zones			
None	-		
Flood Defences			
None	-		

Other Factors	Search Buffer	Direction
Geological		
Drone Contamination		
No		
Coal Mining Affected Areas		
In an area which may not be affected by Coal Mining		
Non Coal Mining Contaminated Areas		
No Hazard		
Radon Protection Measures Affected Areas		
Affected Areas: The property is not in a radon affected area, as less than 1% of homes are above the action level. Source: British Geological Survey, National Geoscience Information Service, Contact Ref: 4	On Site	NW
Radon Protection Measures Affected Areas		
Radon Protection Measures: None. Source: British Geological Survey, National Geoscience Information Service, Contact Ref: 4	On Site	NW
Potential for Collapse Ground Stability Hazards		
No Hazard		
Potential for Erosion Ground Stability Hazards		
Hazard Potential: Very Low, Contact Ref: 4	On Site	NW
Hazard Potential: Moderate, Contact Ref: 4	0-250m	SE
Potential for Ground Dissolution Stability Hazards		
No Hazard		
Potential for Landslide Ground Stability Hazards		
Hazard Potential: Very Low, Contact Ref: 4	On Site	NW
Potential for Slumping Ground Stability Hazards		
Hazard Potential: Very Low Contact Ref: 4	On Site	NW
Hazard Potential: Moderate Contact Ref: 4	0-250m	SE
Potential for Shrinking or Swelling Clay Ground Stability Hazards		
Hazard Potential: Very Low Contact Ref: 4	On Site	NW

Registered Landfill Sites

At present no complete national data set exists for landfill site boundaries, therefore a point grid reference, provided by the data supplier, is used for some landfill sites. In certain cases the point grid references supplied provide only an approximate position and can vary from the site entrance to the centre of the site. Where the exact position of the site is unclear, Landmark construct either a 100 metre or 250 metre "buffer" around the point to warn of the possible presence of landfill. The size of this "buffer" relates to the positional accuracy that can be attributed to the site. The "buffer" is shown on the map as an orange cross-hatched circle and is referred to in the map legend as Potential Landfill Buffer. Where actual boundaries are available, the landfill site area is shown on the map as a red diagonal hatched polygon and referred to in the map legend as Registered Landfill Site.

Local Authority Recorded Landfill Sites

Local Authority landfill data are sourced from individual local authorities that were able to provide information on sites operating prior to the introduction of the Control of Pollution Act (COPA) in 1974. Appropriate authorities are listed under Local Authority Landfill Coverage with an indication of whether or not they were able to make landfill data available. Details of any records identified are disclosed. You should be aware that if the local authority 'Had landfill data but passed it to the relevant environment agency' it does not necessarily mean that local authority landfill data is included in our other Landfill datasets. In addition if no data has been made available, for all or part of the search area, you should be aware that a negative response under 'Local Authority Recorded Landfill Sites' does not necessarily confirm that no local authority landfills exist.

Flooding

The Sitecheck report flood map plots all flood related features revealed within the search area as supplied by the relevant agency. However, to avoid confusion, the text entry in the body of the report only reveals the detail of the nearest feature in each flood data set. This is also reflected in the summary table where only a single entry is included to indicate the search buffer of the nearest occurrence.

Mining Instability Data

The Mining Instability data was obtained on Licence from Ove Arup + Partners Limited (for further information, contact mining.review@arup.com). No reproduction or further use of such data is to be made without the prior written consent of Ove Arup + Partners Limited. The information and data supplied in the Product are derived from publicly available records and other third party sources and neither Ove Arup + Partners nor Landmark warrant the accuracy or completeness of such information or data.

The information in this Sitecheck Data Report is derived from a number of statutory and non-statutory sources. While every effort is made to ensure accuracy, Landmark cannot guarantee the accuracy or completeness of such information or data, nor to identify all the factors that may be relevant. If you are a private individual using this report Landmark recommend that you discuss its contents in full with your professional advisor. It is essential to read this report in conjunction with the Product User Guide and your attention is drawn to the scope of the report section within this guide.

The Sitecheck Data User guide is available free of charge from our website www.sitecheck.co.uk

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Contact Names and Addresses**1 Environment Agency National Customer Contact Centre (NCCC)**

PO Box 544
Templeborough
Rotherham
S60 1BY

Telephone 08708 506 506

enquiries@environment-agency.gov.uk

Please note that the Environment Agency/SEPA have a charging policy in place for enquiries.

2 Middlesbrough Council Environmental Health Department

P O Box 65
Vancouver House
Central Mews
Gurney Street
Middlesbrough
TS1 1QS

Telephone 01642 245432
Fax 01642 264199

www.middlesbrough.gov.uk

3 Middlesbrough Council

PO Box 98
Vancouver House
Gurney Street
Middlesbrough
Cleveland
TS1 1QP

Telephone 01642 245432
Fax 01642 264317

www.middlesbrough.gov.uk

4 British Geological Survey Enquiry Service

British Geological Survey
Kingsley Dunham Centre
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Nottinghamshire
NG12 5GG

Telephone 0115 936 3143
Fax 0115 936 3276

enquiries@bgs.ac.uk
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Search Code



Important Consumer Protection Information

This search has been produced by Landmark Information Group Ltd, The Smith Centre, Fairmile, Henley on Thames, RG9 6AB. Telephone 0844 844 9966, email helpdesk@landmark.co.uk which is registered with the Property Codes Compliance Board (PCCB) as a subscriber to the Search Code. The PCCB independently monitors how registered firms maintain compliance with the Code.

The Search Code provides protection for homebuyers, sellers, conveyancers and mortgage lenders who rely on property search reports carried out on residential property within the United Kingdom. It sets out minimum standards which firms compiling and/or selling search reports have to meet. By giving you this information, your search provider is confirming that they keep to the principles of the Code. This provides important protection for you.

The Code's core principles

Search providers which subscribe to the Code will:

- Display the Code logo prominently on their search reports.
- Act with integrity and carry out work with due skill, care and diligence.
- At all times maintain adequate and appropriate insurance to protect consumers.
- Conduct business in an honest, fair and professional manner.
- Handle complaints speedily and fairly.
- Ensure that all search services comply with the law, registration rules and standards.
- Monitor their compliance with the Code.

Keeping to the Search Code

How search organisations maintain compliance with the Search Code is monitored independently by the Property Codes Compliance Board (PCCB). If you have a query or complaint about your search, you should raise it directly with the firm, and if appropriate ask for your complaint to be considered under their formal internal complaints procedure. If you remain dissatisfied with the firm's final resolution after your complaint has been formally considered or if the firm has exceeded the response timescales, you may refer your complaint to The Property Ombudsman (TPO). TPO can award compensation of up to £5,000 to you if it finds that you have suffered actual loss as a result of your search provider failing to keep to the Code.

Please note that all queries or complaints regarding your search should be directed to your search provider in the first instance, not to TPOs or to the PCCB.

TPOs Contact Details:

The Property Ombudsman Scheme
Beckett House
4 Bridge Street
Salisbury
Wiltshire SP1 2LX
Tel: 01722 333306
Fax: 01722 332296
Email: admin@tpos.co.uk

Search Code



Complaints Procedure - Information for customers

If you wish to make a complaint, we will deal with it speedily and fairly. We will:

- Produce a formal written complaints procedure and tell you what this is.
- Acknowledge a complaint within 5 working days of its receipt.
- Normally deal with a complaint fully and in writing within 20 working days of receipt.
- Keep you informed by letter, telephone or e-mail, as you prefer, if we need more time.
- Provide a final written response at the latest within 40 days of receipt.
- Liaise, at your request, with anyone acting formally on your behalf.

If you are not satisfied with the final decision, you may refer the complaint to The Property Ombudsman scheme (TPOs).

You can get more information about the PCCB from www.propertycodes.org.uk

Please contact our Customer Service Team on 0844 844 9966 if you would like a copy of the full search code.

Complaints should be sent to:

Customer Relationship Manager
Landmark Information Group Ltd
Landmark UK Property
The Smith Centre
Fairmile
Henley-On-Thames
RG9 6AB

Telephone: 0844 844 9966

E-mail: helpdesk@landmark.co.uk

LANDMARK TERMS AND CONDITIONS

Definitions

"**Authorised Reseller**" means an agent or reseller of Landmark whom Landmark has duly appointed to resell its Reports and Services.

"**Content**" means any data, computing and information services and software, and other content and documentation or support materials and updates included in and/or supplied by or through the Websites, in Reports or Services or in any other way by Landmark and shall include Landmark developed and Third Party Content.

"**First Purchaser**" means the first person, or legal entity to purchase the Property Site following provision of a Report.

"**First Purchaser's Lender**" means the funding provider for the First Purchaser

"**Information Pack**" means a pack compiled by or on behalf of the owner or prospective buyer of the Property Site, designed to aid the marketing or purchase of the Property Site and containing information provided by or on behalf of the owner or prospective buyer of the Property Site.

"**Intellectual Property Rights**" means copyright, patent, design right (registered or unregistered), service or trade mark (registered or unregistered), database right or other data right, moral right or know how or any other intellectual property right.

"**Order**" means the request for Services from Landmark by You.

"**Property Site**" means a land site on which Landmark provides a Service.

References to "**We**", "**Us**" and "**Our**" are references to Landmark Information Group Limited ("Landmark"), whose registered office is 7 Abbey Court, Eagle Way, Exeter, EX2 7HY. Where You are not ordering the Services directly from Landmark, but from an Authorised Reseller, references to "Landmark" or "We", "Us" and "Our" shall be construed so as to mean either Landmark and/or the Authorised Reseller as the context shall indicate.

References to "**You/Your/Yourself**" refer to the contracting party who accesses the Website or places an Order with Landmark.

"**Report**" includes any information that Landmark supplies to You including all reports, services, datasets, software or information contained in them.

"**Services**" means the provision of any service by Landmark pursuant to these Terms, including without limitation, any Report.

"**Landmark Fees**" means any charges levied by Landmark for Services provided to You.

"**Suppliers**" means any organisation who provides data or information of any form to Landmark.

"**Terms**" means these Terms & Conditions.

"**Third Party Content**" means the services, software, information and other content or functionality provided by third parties and linked to or contained in the Services.

"**Websites**" means websites hosted by Landmark and includes the Content and any report, service, document, data-set, software or information contained therein, derived there from or thereby.

1. Terms & Conditions

- These Terms govern the relationship between You and Landmark whether You are an unregistered visitor to the Website or are purchasing Services. Where these Terms are not expressly accepted by You they will be deemed to have been accepted by You, and You agree to be bound by these Terms when You place any Order, or pay for any Services provided
- If the person communicating with Landmark is an Authorised Reseller, they must ensure that You agree to these Terms.
- The headings in these Terms are for convenience only and shall not affect the meaning or interpretation of any part of these Terms.
- Landmark may modify these Terms, and may discontinue or revise any or all other aspects of the Services at its sole discretion, with immediate effect and without prior notice, including without limitation changing the Services available at any given time. Any amendment or variation to these Terms shall be posted on our Websites. Continued use of the Services by You shall be deemed an acceptance by You to be bound by any such amendments to the Terms.
- These Terms, together with the prices and delivery details set out on our Websites, Landmark's Privacy Policy and Your Order comprise the whole agreement relating to the supply of Services to You by Landmark. No prior stipulation, agreement, promotional material or statement whether written or oral made by any sales or other person or representative on our behalf should be understood as a variation of these Terms. Save for fraud or misrepresentation, Landmark shall have no liability for any such representation being untrue or misleading.
- These Terms shall prevail at all times to the exclusion of all other terms and conditions including any terms and conditions which You may purport to apply even if such other provisions are submitted in a later document or purport to exclude or override these Terms and neither the course of conduct between parties nor trade practice shall act to modify these Terms.

2. Services

- Landmark will use reasonable care and skill in providing the Services to You, however, the Services are provided on the express basis that the information and data supplied in the Services are derived from third party sources and Landmark does not warrant the accuracy or completeness of such information or data. Such information is derived solely from those sources specifically cited in the Services and Landmark does not claim that these sources represent an exhaustive or comprehensive list of all sources that might be consulted.

3. Intellectual Property

- You acknowledge that all Intellectual Property Rights in the Services are and shall remain owned by either Landmark or our Suppliers and nothing in these Terms purports to transfer, assign or grant any rights to You in respect of the Intellectual Property Rights.
- Subject always to these Terms You may, without further charge, make the Services available to:
 - the owner of the Property at the date of the Report,
 - any person who purchases the whole of the Property Site,
 - any person who provides funding secured on the whole of the Property Site,
 - any person for whom You act in a professional or commercial capacity,
 - any person who acts for You in a professional or commercial capacity; and
 - prospective buyers of the Property Site as part of an Information Pack but for the avoidance of doubt, Landmark shall have no liability to such prospective buyer unless the prospective buyer subsequently purchases the Property Site, and the prospective (or actual) buyer shall not be entitled to make the Service available to any other third party.Accordingly Landmark shall have the same duties and obligations to those persons in respect of the Services as it has to You.
- Each of those persons referred to in clause 3.b. shall have the benefit and the burden of Your rights and obligations under these Terms. The limitations of Landmark's liability as set out in clause 6 shall apply to all users of the Service in question in aggregate and Landmark shall not be liable to any other person.
- All parties given access to the Services agree that they will treat as strictly private and confidential the Services and all information which they obtain from the Services and shall restrict any disclosure to employees or professional advisors to enable the relevant party to conduct its internal business. The requirement in this clause to treat the Services as confidential shall include a requirement to maintain adequate security measures to safeguard the Services from unauthorised access, use or copying.
- Each recipient of the Services agrees (and agrees it will cause its employees, agents or contractors who may from time to time have access to the Services to agree) it will not, except as permitted herein or by separate agreement with Landmark:-

- effect or attempt to effect any modification, merger or change to the Service, nor permit any other person to do so; or
 - copy, use, market, re-sell, distribute, merge, alter, add to or carry on any redistribution, reproduction, translation, publication, reduction to any electronic medium or machine readable form or commercially exploit or in any other way deal with or utilise or (except as expressly permitted by applicable law) reverse engineer, decompile or disassemble the Services, Content or Website; or
 - remove, alter or in any way change any trademark or proprietary marking in any element of the Services and You shall acknowledge the ownership of the Content, where such Content is incorporated or used into Your own documents, reports, systems or services whether or not these are supplied to any third party.
 - create any product which is derived directly or indirectly from the data contained in the Services.
- The mapping contained in any Services is protected by Crown Copyright and must not be used for any purpose outside the context of the Services or as specifically provided by these Terms.
 - You are permitted to make five copies of any Report, but are not authorised to re-sell the Report, any part thereof or any copy thereof unless you are an Authorised Reseller. Further copies may not be made in whole or in part without the prior written permission of Landmark who shall be entitled to make a charge for each additional copy.

4. Charges

- VAT at the prevailing rate shall be payable in addition to the Landmark Fees. You shall pay any other applicable indirect taxes related to Your use of the Services.
- An individual or a monthly invoice showing all Orders created by You will be generated subject to these Terms. You will pay the Landmark Fees at the rates set out in Landmark's or its Authorised Reseller's invoice. The Landmark Fees are payable in full within 30 days without deduction, counterclaim or set off. You acknowledge that time is of the essence with respect to the payment of such invoices. Landmark reserve the right to amend the Landmark Fees from time to time and the Services will be charged at the Landmark Fee applicable at the date on which the Service is ordered.
- We may charge interest on late payment at a rate equal to 3% per annum above the base lending rate of National Westminster Bank plc.
- Landmark or its Authorised Reseller shall not be obliged to invoice any party other than You for the provision of Services, but where Landmark or its Authorised Reseller does so invoice any third party at Your request, and such invoice is not accepted or remains unpaid, Landmark or its Authorised Reseller shall have the option at any time to cancel such invoice and invoice You direct for such Services. Where Your order comprises a number of Services or severable elements within any one or more Services, any failure by Landmark or its Authorised Reseller to provide an element or elements of the Services shall not prejudice Landmark's or its Authorised Reseller's ability to require payment in respect of the Services delivered to You.

5. Termination

- Landmark may suspend or terminate Your rights under these Terms without any liability to You with immediate effect if at any time:-
 - You fail to make any payment due in accordance with clause 4;
 - You repeatedly breach or commit or cause to be committed any material breach of these Terms; or
 - You commit a breach and You fail to remedy the breach within 7 days of receipt of a written notice to do so; additionally, without prejudice to the foregoing, Landmark may remedy the breach and recover the costs thereof from You.
- If Your rights are terminated under this clause and You have made an advance payment We will refund You a reasonable proportion of the balance as determined by Us in relation to the value of Services previously purchased.
- Landmark reserves the right to refuse to supply any or all Services to You without notice or reason.

6. Liability

- We provide warranties and accept liability only to the extent stated in this clause 6 and clause 7.
- Nothing in these Terms excludes either party's liability for death or personal injury caused by that party's negligence or wilful default, and the remainder of this clause 6 is subject to this provision and Your statutory rights.
- As most of the information contained in the Services is provided to Landmark by others, Landmark cannot control its accuracy or completeness, nor is it within the scope of Landmark's Services to check the information on the ground. Accordingly, Landmark will only be liable to You for any loss or damage caused by its negligence or wilful default and subject to clause 6.0 below neither Landmark nor any person providing information contained in any Services shall in any circumstances be liable for any inaccuracies, faults or omissions in the Services, nor shall Landmark have any liability if the Services are used otherwise than in accordance with these Terms.
- Save as precluded by law, Landmark shall not be liable for any indirect or consequential loss, damage or expenses (including loss of profits, loss of contracts, business or goodwill) howsoever arising out of any problem, event, action or default by Landmark.
- In any event, and notwithstanding anything contained in these Terms, Landmark's liability in contract, tort (including negligence or breach of statutory duty) or otherwise howsoever arising by reason or in connection with this Contract (except in relation to death or personal injury) shall be limited to an aggregate amount not exceeding £1 million if the complaint is in relation to a Report on residential property and an aggregate amount not exceeding £10 million in respect of any other Report or Service purchased from Landmark. Landmark will not be liable for any defect, failure or omission relating to Services that is not notified to Landmark within six months of the date of the issue becoming apparent and in any event, within twelve years of the date of the Service.
- You acknowledge that:-
 - Subject to clause 6.0 below You shall have no claim or recourse against any Third Party Content supplier nor any of our other Suppliers. You will not in any way hold us responsible for any selection or retention of, or the acts or omissions of Third Party Content suppliers or other Suppliers (including those with whom We have contracted to operate various aspects or parts of the Services) in connection with the Services (for the avoidance of doubt Landmark is not a Third Party Content supplier). Landmark does not promise that the supply of the Services will be uninterrupted or error free or provide any particular facilities or functions, or that the Content will always be complete, accurate, precise, free from defects of any other kind, computer viruses, software locks or other similar code although Landmark will use reasonable efforts to correct any inaccuracies within a reasonable period of them becoming known to us;
 - Landmark's only obligation is to exercise reasonable skill and care in providing environmental property risk information to persons acting in a professional or commercial capacity who are skilled in the use of property and environmental information and You hereby acknowledge that You are such a person;
 - no physical inspection of the Property Site reported on is carried out as part of any Services offered by Landmark and Landmark do not warrant that all land uses or features whether past or current will be identified in the Services. The Services do not include any information relating to the actual state or condition of any Property Site nor should they be used or taken to indicate or exclude actual fitness or unfitness of a Property Site

- for any particular purpose nor should it be relied upon for determining saleability or value or used as a substitute for any physical investigation or inspection. Landmark recommends that You inspect and take other advice in relation to the Property Site and not rely exclusively on the Services.
- iv. Subject to clause 6.0 below, Landmark shall not be responsible for error or corruption in the Services resulting from inaccuracy or omission in primary or secondary information and data, inaccurate processing of information and data by third parties, computer malfunction or corruption of data whilst in the course of conversion, geo-coding, processing by computer or electronic means, or in the course of transmission by telephone or other communication link, or printing.
 - v. Landmark will not be held liable in any way if a Report on residential property is used for commercial property or more than the one residential property for which it was ordered.
 - vi. The Services have not been prepared to meet Your or anyone else's individual requirements; that You assume the entire risk as to the suitability of the Services and waive any claim of detrimental reliance upon the same; and You confirm You are solely responsible for the selection or omission of any specific part of the Content.
 - vii. Landmark offer no warranty for the performance of any linked internet service not operated by Landmark.
 - viii. You will on using the Services make a reasonable inspection of any results to satisfy Yourself that there are no defects or failures. In the event that there is a material defect You will notify us in writing of such defect within seven days of its discovery;
 - ix. Any support or assistance provided to You in connection with these Terms is at Your risk;
- h. All liability for any insurance products purchased by You rests solely with the insurer. Landmark does not endorse any particular product or insurer and no information contained within the Services should be deemed to imply otherwise. You acknowledge that if You Order any such insurance Landmark will deem such as Your consent to forward a copy of the Report to the insurers. Where such policy is purchased, all liability remains with the insurers and You are entirely responsible for ensuring that the insurance policy offered is suitable for Your needs and should seek independent advice. Landmark does not guarantee that an insurance policy will be available on a Property Site. All decisions with regard to the offer of insurance policies for any premises will be made solely at the discretion of the insurers and Landmark accepts no liability in this regard. The provision of a Report does not constitute any indication by Landmark that insurance will be available on the property.
- i. Professional opinions contained in Reports are provided to Landmark by third parties, and such third parties are solely liable for the opinion provided. For the avoidance of doubt, those parties providing assessments or professional opinions on Landmark products include RPS Plc & Wilbourn Associates Limited, and any issues with regard to the provision of such opinion should be taken up with the relevant third party.
- If Landmark provides You with any additional service obtained from a third party, including but not limited to any interpretation or conclusion, risk assessment or environmental report or search carried out in relation to a Report on Your Property Site, subject to clause 6.0 below Landmark will not be liable in any way for any information contained therein or any issues arising out of the provision of those additional services to You. Landmark will be deemed to have acted as an agent in these circumstances and the supply of these additional services will be governed by the terms and conditions of those Third Parties.
- j. In any event no person may rely on a Service more than 12 months after its original date.
- k. If You wish to vary any limitation of liability as set out in these Terms. You must request such variation prior to ordering the Service. Landmark shall use its reasonable endeavours to agree such variation but shall not be obliged to do so.
- l. Time shall not be of the essence with respect to the provision of the Services.
- m. Ordnance Survey have undertaken a positional accuracy improvement programme which may result in discrepancies between the positioning of features used in datasets in the Services and the updated Ordnance Survey mapping. Subject to clause 6.0 below, Landmark and its Suppliers exclude all and any liability incurred as a result of the implementation of such positional accuracy improvement programme.
- n. Where Landmark provides its own risk assessment in connection with any Report, Landmark shall carry out such assessment with all reasonable skill and care but shall have no liability for any such risk assessment conclusion which is provided for information only, save where Landmark conducted the same negligently, in which case the provisions of clause 6 shall apply. Notwithstanding the provision of any such risk assessment conclusion you should carefully examine the remainder of the Report and should not take or refrain from taking any action based solely on the basis of the risk assessment. For the avoidance of doubt, the provisions of this clause 6n apply solely to risk assessments conducted by Landmark, and the provision of any other risk assessment by a third party shall be governed by such third party's terms in accordance with the provisions of clause 6i above.
- o. Landmark obtains much of the information contained in its Report from third parties. Landmark will not accept any liability to You for any negligent or incorrect entry, or error or corruption in the Third Party Content supplied to Landmark, but Landmark's Suppliers may be liable for such negligent or incorrect entries, or errors or corruptions, subject to the terms and conditions on which they supply the Third Party Content to Landmark.
- ## 7. Contribution
- a. Save where expressly provided, this clause 7 shall apply solely to Envirosearch Residential Reports (regardless of the result of such Report). Nothing in this clause 7 shall operate to override or vary the provisions of clause 6.
 - b. Landmark are prepared to offer, at their sole discretion, and without any admission or inference of liability a contribution towards the costs of any remediation works required under a Notice (as defined below) on the terms of this clause 7 ("the Contribution").
 - c. In the event that a Remediation Notice is served on the First Purchaser or First Purchaser's Lender of a Property Site under Part II(A) of the Environmental Protection Act 1990 ("the Notice") Landmark will contribute to the cost of such works as either the First Purchaser or First Purchaser's Lender (but not both) are required to carry out under the Notice subject to the provisions of this clause 7 and on the following terms:
 - i. the Contribution shall only apply to contamination or a pollution incident present or having occurred prior to the date of the Report;
 - ii. the Contribution shall only apply where the Property Site is a single residential dwelling house or a single residential flat within a block of flats. For the avoidance of doubt, this obligation does not apply to any commercial property, nor to any Property Site being developed or redeveloped whether for residential purposes or otherwise;
 - iii. the Contribution is strictly limited to the cost of works at the Property Site and at no other site;
 - iv. the Contribution will not be paid in respect of any of the following:
 - Radioactive contamination of whatsoever nature, directly or indirectly caused by or contributed to or arising from ionising radiations or contamination by radioactivity from any nuclear fuel or from any nuclear waste from the combustion of nuclear fuel or the radioactive toxic explosive or other hazardous properties of any explosive nuclear assembly or nuclear component thereof.
 - Asbestos arising out of or related in any way to asbestos or asbestos-containing materials on or in structures or services serving the structures. Naturally occurring materials arising from the presence or required removal of naturally occurring materials except in circumstances where such materials are present in concentrations which are in excess of their natural concentration.
 - Intentional non-compliance arising from the intentional disregard of or knowing wilful or deliberate non-compliance by any owner or occupier of the Property Site with any statute, regulation, administrative complaint, notice of violation, or notice letter of any Regulatory Authority.
- Any condition which is caused by acts of War or an Act of Terrorism.
- Any property belonging to or in the custody or control of the First Purchaser which does not form a fixed part of the Property Site or the structure.
- Any fines, liquidated damages punitive or exemplary damages.
- Any bodily injury including without limitation, death, illness or disease, mental injury, anguish or nervous shock.
- Any financial loss in respect of any loss of any rental, profit, revenue, savings or business or any consequential indirect or economic loss damage or expense including the cost of rent of temporary premises or business interruption.
- Any losses incurred following a material change in use of, alteration or development of the Property Site.
- d. The maximum sum that shall be contributed by Landmark in respect of any Contribution shall be limited to £80,000. In the event that more than one Report is purchased on the Property Site the Contribution will only be payable under the first Report purchased by or on behalf of any First Purchaser or First Purchaser's Lender and no Contribution will be made in respect of subsequent Reports purchased by or on behalf of such First Purchaser, First Purchaser's Lender or any person connected to them.
 - e. Landmark shall only pay a Contribution where the Notice is served within 36 months of the date of the Report.
 - f. Any rights to a Contribution under this Clause 7 are not assignable in the event of a sale of the Property Site and Landmark will not make any Contribution after the date of completion of such sale.
 - g. In the event the First Purchaser or First Purchaser's Lender wishes to claim any Contribution, it shall notify Landmark in writing within 3 months of the date of the Notice. The First Purchaser or First Purchaser's Lender (as applicable) shall comply with all reasonable requirements of Landmark with regard to the commission and conduct of the remediation works to be carried out under the Notice, and in the event the First Purchaser or First Purchaser's Lender (as applicable) does not do so, including without limitation, obtaining Landmark's prior written consent to any estimates for such works or complying with any other reasonable request by Landmark, Landmark shall not be required to pay any Contribution. Notwithstanding the payment of the Contribution by Landmark the First Purchaser or First Purchaser's Lender as applicable shall take all reasonable steps to mitigate any costs incurred in connection with the conduct of works required under the terms of any Notice.
 - h. In the event that the First Purchaser or First Purchaser's Lender receives any communication from a statutory authority to the effect that there is an intent to serve a notice received under Part II(A) of the Environmental Protection Act 1990 they will advise Landmark within a maximum period of two months from receipt of such communication. This clause 7h and the service of any notice under it shall not affect the provisions of clauses 7 e and g, and any such communications, even if advised to Landmark will not operate as notice under clause 7e.
 - i. Landmark reserve the right at any time prior to a claim for Contribution being made in accordance with clause 7 g) above, to withdraw the offer of payment of Contributions without further notice.
- ## 8. Events Beyond Our Control
- a. You acknowledge that Landmark shall not be liable for any delay, interruption or failure in the provision of the Services which are caused or contributed to by any circumstance which is outside our reasonable control including but not limited to, lack of power, telecommunications failure or overload, computer malfunction, inaccurate processing of data, or delays in receiving, loading or checking data, corruption of data whilst in the course of conversion, geo-coding, processing by computer in the course of electronic communication, or printing.
- ## 9. Severability
- a. If any provision of these Terms are found by either a court or other competent authority to be void, invalid, illegal or unenforceable, that provision shall be deemed to be deleted from these Terms and never to have formed part of these Terms and the remaining provisions shall continue in full force and effect.
- ## 10. Governing Law
- a. These terms shall be governed by and construed in accordance with English law and each party agrees irrevocably submit to the exclusive jurisdiction of the English courts. If any dispute arises out of or in connection with this agreement (a "Dispute") the parties undertake that, prior to the commencement of Court proceedings, they will seek to have the Dispute resolved amicably by use of an alternative dispute resolution procedure acceptable to both parties with the assistance of the Centre for Dispute Resolution (CEDR) if required, by written notice initiating that procedure. If the Dispute has not been resolved to the satisfaction of either party within 60 days of initiation of the procedure or if either party fails or refuses to participate in or withdraws from participating in the procedure then either party may refer the Dispute to the Court.
- ## 11. General; Complaints
- a. Landmark may assign its rights and obligations under these Terms without prior notice or any limitation.
 - b. Landmark may authorise or allow our contractors and other third parties to provide to Landmark and/or to You services necessary or related to the Services and to perform Landmark's obligations and exercise Landmark's rights under these Terms, which may include collecting payment on Landmark's behalf.
 - c. No waiver on Landmark's part to exercise, and no delay in exercising, any right, power or provision hereunder shall operate as a waiver thereof, nor shall any single or partial exercise of any right, power or provision hereunder preclude the exercise of that or any other right, power or provision.
 - d. Unless otherwise stated in these Terms, all notices from You to Landmark must be in writing and sent to the Landmark registered office (or in the case of an Authorised Reseller, to its registered office address) and subject to paragraph e below all notices from Landmark to You will be displayed on our Websites from time to time.
 - e. Any complaints in relation to the Services should, in the first instance, be in writing addressed to the Customer Service Support Manager at the Landmark registered office. Landmark or its agents will respond to any such complaints in writing as soon as practicable possible.
 - f. A person who is not a party to any contract made pursuant to these Terms shall have no right under the Contract (Right of Third Parties) Act 1999 to enforce any terms of such contract and Landmark shall not be liable to any such third party in respect of any Services supplied.
 - g. Landmark's Privacy Policy as displayed on the Website governs the use made of any information You supply to Landmark.

REPORT ON GROUND INVESTIGATION

FOR Proposed Biogas Facility, Forty Foot Road,
Middlesbrough

DURING July 2012

FOR Moorehead Sutton and Laing

YOUR REF.

OUR REF. G12071

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Our Ref. **G12146**

Your Ref.

17 August 2012

Mr C Wilson
Moorehead Sutton and Laing
20 Woodlands Road
Middlesbrough
TS1 3BE

Dear Sir

Re: - Ground Investigation for Proposed BioGas Facility, Forty Foot Road, Middlesbrough

1. Introduction

In accordance with your instruction Geoinvestigate Ltd carried out a ground investigation for the above development between the 18th & 27th July 2012. The investigation was carried out in line with your suggested scope of works.

It is understood that the client proposes to construct a new biogas facility on the site, comprising several large digester and storage tanks and several smaller tanks and buildings.

The proposed access to the site is from the west off Forty Foot Road, with additional access roadways round the property for tankers and other vehicles.

Currently, the site comprises a reasonably level area of mostly concrete or gravel hardstanding. The site is located within an industrial area of Middlesbrough and is adjacent to railway sidings associated with the nearby railhead which connects to Dawsons AV which lies to east.

The purpose of the investigation was to establish the nature of the ground conditions at the site to identify suitable foundations for the new structures and to establish if contamination and hazardous gas were present.

2. Scope of Current Investigation

The current investigation comprised the following components:

- The sinking of six (6) dynamic windowless sampling boreholes to depths up to 6.00m (BH1 - BH6) in order to establish the nature of the shallow ground conditions across the site. Samples were recovered for contamination analyses and to enable an assessment of the foundation requirements for lighter structures.
- The installation of three (3) gas wells in boreholes BH1, BH4 and BH6 and the provision of six (6) gas monitoring visits to provide information on the possible requirement for gas measures in the design of the development.
- The sinking of five (5) light cable percussion boreholes (CPB1 – CPB5) to depths up to 23.00m to establish the nature of the ground at depth for a possible piled foundation design for the larger structures at the site.
- Excavation by hand to recover three (3) samples of near surface fill material for laboratory CBR testing in order to provide information for the design of parking areas and access roads.
- The excavation of a single test pit to a depth of 1.40m (TP1) in order to carry out a soakaway test to provide information on the permeability of the horizon of fill material which covers the site.
- The recovery of two (2) concrete core samples from within an existing warehouse to provide information on the suitability of the current floor for reuse in the new development.
- Contamination analyses on four (4) samples of fill material recovered from the near surface (<0.50m) and two samples of fill recovered from depths between 1.50m and 2.00m for a range of contaminants including metals, non-metals, Speciated PAH (EPA16) and TPH (CWG) and Asbestos.
- Contamination analyses of three (3) samples of leachates obtained from samples of fill for the presence of a range of metals, non metals and total PAH.

The positions of the boreholes and excavations and CBR tests together with the outline of the proposed new development are shown on the site plan provided.

The excavations were sampled and logged at site by an engineering geologist and the ground conditions encountered are described on the borehole and trial pit logs.

The results of the CBR and contamination testing, carried out at MCerts / UKAS accredited laboratories are included in the report along with logs of the boreholes.

3 Encountered Ground Conditions

3.1 Dynamic Windowless Sampling Boreholes (BH1 – BH6)

The shallow boreholes encountered compact / loose to medium dense and in places dense / very dense sandy gravel of ash, slag and occasional concrete to depths ranging from 1.20m (BH1) to 2.75m (BH6). It is speculated that the fill may have originated from a former steel works activities that were previously carried out within the site and the surrounding area.

Natural ground comprising initially firm or firm to stiff clays were encountered below the fill becoming soft to firm, soft and very soft as the horizon became siltier and sandier with increasing depth.

No standing water levels were recorded in the shallower boreholes.

3.2 Cable Percussion Boreholes (CPB1 – CPB5)

The cable percussion boreholes encountered similar ground conditions to those encountered in the shallower window sampling boreholes namely fill underlain by firm clay becoming soft with increasing depth.

In the deeper boreholes soft silty clays extended to depths ranging from 7.10m to 7.90m, below which medium dense sand was encountered extending to depths ranging from 18.90m (CPB2) to 19.80m (CPB5). This was followed by firm to stiff slightly organic clay exceeding depths of 23.00m (CPB3 and CPB5).

SPT N_{300} values within the made ground ranged from $N=10$ to $N>75$ ie loose to medium dense and very dense. SPT N_{300} values within the upper silty clay horizons ranged from $N=0$ to $N=7$ reflecting its variable strength from very soft to stiff.

SPT N_{300} values within the natural sand horizon were ranged from $N=12$ to $N=39$, though mostly between $N=20$ and $N=26$ ie medium dense.

SPT N_{300} values within the lower silty clay horizon were recorded ranging from $N=18$ to $N=25$.

Standing water was noted in the boreholes at depths ranging from of 6.80m to 7.30m.

3.3 Concrete Cores

Concrete cores were taken at positions selected by the engineer. These encountered unreinforced concrete to depths of 0.18m (Core 2) and 0.20m (Core 1). No DPM was found beneath the concrete.

3.4 Soakaway Test

A single trial pit was excavated to a depth of 1.40m, within the compact 'ashy' fill horizon which covers the site. The sides of the pit were trimmed to near vertical and water was pumped in rapidly using a 75mm centrifugal pump, in line with the recommendations provided in BRE Digest 365.

Approximately 1000 litres of water were pumped into the pit. The water drained almost as quickly as it could be pumped in. The maximum head that could be achieved in the pit was 1.06m bgl or 0.34m above the base at which point depth the timed test was commenced. Water drained away below the base of the pit to a depth > 1.40m after 180 seconds.

3.5 CBR Tests

Three samples of the 'ashy' fill were recovered from depths ranging from 0.30m to 0.65m and were re-compacted for laboratory CBR testing. CBR 1 returned a CBR value of 35% and CBR 2 18%. CBR 3 contained too much oversized material to test, but would be expected to return results well in excess of 5%.

3.6 Vegetation Influence and Clay Shrinkability

No significant vegetation was present within an influencing distance of the development site. Atterberg Limit tests on the natural silty clay below the fill recovered from depths ranging from 1.50m to 2.50m indicate this horizon classifies as Clay or Silt of Intermediate to Very High Plasticity according to BS5930. As the fill horizon covering the site is mostly granular it could be expected to be essentially non-plastic.

4. Contamination

4.1 Testing Strategy

A review of a desk study report carried out for the site in 2005 by Geoinvestigate Limited (Ref: Report No G05232) for an earlier development suggested that there might be a moderate to high risk with regard to the potential for contamination to exist at the site. The most significant potential sources of contamination were identified as the previous steel works and railway sidings activities carried out within and adjacent to the site. The presence of ash, slag clinker within the made ground encountered in the current boreholes at the site generally confirmed the validity of this assumption.

A visual and olfactory assessment of samples of fill recovered from the boreholes during the current investigation found no obvious signs of hydrocarbon contamination or of physical hazards such as glass within this horizon to depths of 2.75m and if present contamination may not be severe. In addition nine (9) contamination results from the earlier 2005 SI had been reasonably favourable indicating the site was suitable for a proposed commercial end use with little remediation being required.

It is understood that the site will largely be covered by hard-standing, new buildings, tanks and their floors and slabs. Consequently the possible pathways between the surface end users of the site and possible contamination in the underlying and particularly the near surface fill horizon will be wholly removed on completion of the development

As the shallow fill materials posed the most likely source of contaminants six (6) samples of this horizon were analysed for the presence of a range of potential inorganic and organic substances. The range of target analytes chosen were based on the potential chemicals that may be found in association with historical steelworks and railway land.

Analysis was also carried out on three leachates (3) from the fill in order to assess the potential risks to neighbouring sites from the movement of ground water, surface water captured within the site and the underlying groundwater, though the latter may be of less concern because the site was known to be underlain by a Non-Aquifer according to the 2005 Sitecheck Report.

The results of the contamination testing have been used in a contamination risk assessment for both human health and controlled waters.

4.2 Risk Assessment

4.2.1 Method

Geoinvestigate Ltd uses a combination of Generic Assessment Criteria from Land Quality Management / Chartered Institute of Environmental Health (LQM/CIEH) and published SGVs in order to assess the presence of potentially harmful substances within the soil. This assessment has been carried out with regard to human health and controlled waters which have been identified as the main site receptors.

In this instance as the sites intended end use is a Biogas Facility and therefore is a commercial development. The site has been classified as such with commercial SGVs and GACs adopted as the most appropriate limits.

Results from the contamination analysis of the site samples have been compared to the limit values from the above sources and where they fall below have been deemed safe for the proposed commercial end use.

An appraisal of the chemical testing results and the relevant limits is set out in the Contamination Risk Assessment which follows.

4.2.2 Contamination Risk to Human Health

In light of the initial observations made in the boreholes, it was anticipated that hydrocarbon contamination would not pose a significant hazard for the new development. However given the ashy nature of the fill horizon it was considered that PAH might pose a moderate risk. Physical hazards, such as shards of glass and metal were largely absent from the fill.

4.2.2.1 Inorganic Chemicals – Human Health

As mentioned earlier in this report, levels of inorganic chemicals have been compared to the published SGVs for commercial end-use and Generic Assessment Criteria from Land Quality Management / Chartered Institute of Environmental Health (LQM/CIEH).

Results returned from the analyses of six (6) samples of near surface and deeper fill material of the same general horizon of 'ashy' fill recovered between depths ranging from 0.20m to 2.00m returned concentrations of a range of substances generally falling below their respective SGVs for commercial end-use, as published by the Environment Agency in their individual SGV and toxicology reports and accompanying documents.

A summary of the analyses is shown in Table 1 along with the published SGV values and LQM/CIEH GACs.

Table 1, Inorganic Chemicals – Fill material

Analyte	Max Returned Concentration (mg/kg)	Commercial SGV (mg/kg)	LQM/CIEH Generic Assessment Criteria (mg./kg)	Number of samples tested
Arsenic	59	640		6
Boron	0.7		192000	6
Cadmium	0.75	230		6
Chromium	820			6
Chromium III	820		8840	6
Chromium VI	<0.5		35	6
Copper	130		71700	6
Mercury (elemental)	<0.1	26		6
Nickel	140	1800		6
Lead	300	750*		6
Selenium	0.66	13000		6
Zinc	320		665000	6
Asbestos	Not detected			3

NB * denotes old SGV approach.

The made ground returned levels of inorganic contaminants well below all of the chosen assessment criteria. Therefore the risk of contamination with regard to the above inorganic substances is considered to be negligible and no remedial measures are necessary.

4.2.2.2 Organic Chemicals – Human Health

It was anticipated that organic contaminants such as PAH, associated with the presence of ash, slag and clinker within the made ground might be present at the site, though a visual and olfactory assessment of the fill did not indicate the presence of TPHs.

Notwithstanding, testing was carried out on two (2) samples of the ashy fill for the presence of Speciated TPHs (CWG). In addition four (4) samples were tested for the presence of Speciated PAHs (EPA16).

The results of the testing are presented in Table 2 along with the chosen assessment criteria (for commercial land use) assuming a Total Organic Content of 1% in line with the TOC returned of 0.82% to 1.2% by the sample tested. A result of 25% from BH1 at 0.50m was discounted as an erratic value.

Table 2, Organic Chemicals – Fill Material

Analyte	Max. Returned Concentration (mg/kg)	Commercial SGV (mg/kg)	LQM/CIEH Generic Assessment Criteria (mg./kg)	Number of samples tested
Phenol	<0.3	3200		6
Speciated TPHs				
TPH aliphatic (C5-C6)	<0.1	N/A	3400	2
TPH aliphatic (C6-C8)	<0.1		8300	2
TPH aliphatic (C8-C10)	<0.1		2100	2
TPH aliphatic (C10-C12)	<1		10000	2
TPH aliphatic (C12-C16)	<1	N/A	61000	2
TPH aliphatic (C16-C21)	<1		160000	2
TPH aliphatic (C21-C35)	<1			2
TPH aliphatic (C35-C44)	<1		160000	2
TPH aromatic (C5-C7)	<0.1		28000	2
TPH aromatic (C7-C8)	<0.1		59000	2
TPH aromatic (C8-C10)	<0.1		3700	2
TPH aromatic (C10-C12)	<1		17000	2
TPH aromatic (C12-C16)	<1		360000	2
TPH aromatic (C16-C21)	<1		28000	2
TPH aromatic (C21-C35)	<1		28000	2
TPH aromatic (C35-C44)	<1		28000	2
Speciated PAHs				
Napthalene	3	N/A	200	4
Acenaphthylene	2		84000	4
Acenaphthene	5		85000	4
Fluorene	4.1		64000	4
Phenanthrene	44		22000	4
Anthracene	11		53000	4
Fluoranthene	61		23000	4
Pyrene	48		54000	4
Benzo(a)anthracene	33		90	4
Chrysene	39		140	4
Benzo(b)fluoranthene	28		100	4
Benzo(k)fluoranthene	21		140	4
Benzo(a)pyrene	23		14	4
Dibenzo(a,h)pyrene	5		13	4
Indeno(1,2,3-cd)pyrene	18		60	4
Benzo(g,h,i)perylene	19		650	4
Total PAH	360			6

The concentrations of organic contaminants in the fill were below detectable limits or low or only slightly raised (in the commercial context) and were generally well below the LQM/CIEH GACs for commercial end use.

A single sample of fill from BH2 at 0.20m returned a concentration of Benzo(a)pyrene (BaP) in excess of the GAC. This sample also returned the highest concentrations of total PAH at 360mg/kg. The remaining samples returned levels of BaP ranging from 0.51mg/kg to 5.1mg/kg with total PAH not exceeding 61mg/kg elsewhere at the site.

Save for the raised levels returned by a single sample, the contamination risk associated with potential organic contaminants is assessed to be generally negligible and no remedial measures are necessary in this context. However, some further action/remediation may be needed locally in the vicinity of BH2 with regard to the occurrence of BaP at shallow depth.

4.2.3 Contamination Risk to Controlled Waters

Concentrations of potential contaminants returned from the testing of the six (6) soil samples from the site returned levels below the chosen assessment criteria, according to the chosen testing criteria. Therefore there is considered to be a very low potential risk to controlled waters from the soils at this site.

In addition, the Sitecheck Report obtained for the site as part of a desk study appraisal in 2005, (Our Ref: G05232) identified the groundwater below the site to be a Non-Aquifer and therefore not nearly as sensitive or critical as an Aquifer.

Three (3) leachate samples were obtained from the soil samples. The screening of these returned generally negligible concentrations and concentrations below detectable limits and safe water levels as provided by UK Drinking Water Standards which were used as the assessment criteria. The results of the testing and the assessment criteria are shown below in Table 3.

Table 3 Chemical Determinants in Leachate

Analyte	Max. Returned Concentrations (ug/l)	UKDWS (ug/l)
<i>Inorganic Chemicals</i>		
Arsenic	6.1	10
Boron	110	1000
Mercury (elemental Hg)	<0.5 (total)	1
Selenium	22	10
Cadmium	<0.08	5
Nickel	2.6	20
Chromium	5.4	50
Copper	<1	2000
Lead	<1	25 (Yorkshire Water DWS)
<i>Organic Chemicals</i>		
Phenols	<30	
PAH	11	0.1

Three (3) samples of 'ashy' fill returned levels of inorganic and organic contaminants which were generally low or below detectable limits.

Exceedance of the assessment criteria has only occurred in a single sample (BH2 at 0.20m) with levels of Selenium (22ug/l) and total PAH (11ug/l) well above the UKDWS limit for this analyte. The remaining samples of leachate recovered from other locations within the site returned results well below the chosen limits.

In summary it is assessed that the leachate testing has generally returned negligible concentrations of analytes and generally passes local drinking and ground water standard levels. However with regard to BH2 there is considered to be a Low risk to the development from the shallow soils and further action/remediation may be required locally in this area.

4.2.4 Review of Results

Concentrations of both inorganic and organic contaminants have been found to be generally well below the chosen assessment criteria. Physical hazards such as asbestos, glass and metal are also generally absent from the near surface made ground. Therefore the made ground horizon would generally be considered unlikely to pose a significant hazard in the context of the proposed commercial end use of the site.

Raised levels of Selenium and PAH returned by leachate from a single sample of shallow made ground in BH2 at 0.20m, which corresponds to raised levels of BaP (and higher than normal total PAH levels) that were returned by testing of the soil sample at that depth and location. Though these might pose some minor risk (through leaching and run-off) to surface waters, neighbouring sites and controlled waters at depth, the main risk would be to drinking water in an underlying aquifer. However, with regard to the latter, the aquifer is classified as a Non-Aquifer and the risk would be negligible.

Standing water was encountered below the site in the sand horizon at a depth of 6.80-7.30m and this may be linked to the nearby River Tees. Therefore it is necessary to include this as a potential receptor. However this risk is assessed to be small given that the concentrations of potentially mobile contamination are generally low and there is the presence of up to 6.00m of silty clay which would create a barrier to the downward migration into controlled waters.

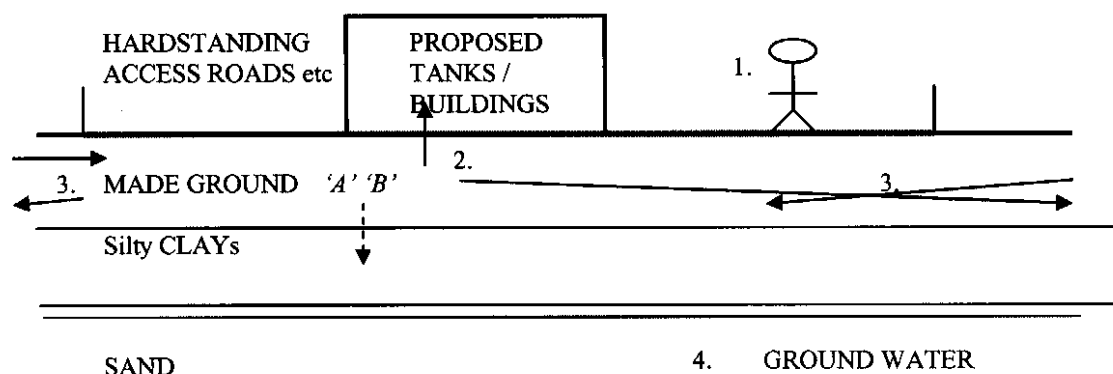
In addition testing previously carried out in 2005 returned similarly generally low results. with PAH not exceeding 125mg/kg in nine (9) samples. Therefore the raised levels of BaP in soil and total PAH and selenium in leachate are considered to be a localised condition in the vicinity of borehole BH2 at shallow depth ,rather than an extensive problem.

Therefore some remediation in the shape of a localised excavation to a depth of 0.50m in the vicinity of BH2 would be considered appropriate to remove the source of the raised levels of the aforementioned contaminants. If this is done, the all be it low risks to surface water, neighbouring sites and groundwater would be removed altogether.

4.2.4.1 Conceptual Ground Hazard Model

Based on the contamination test results and knowledge of the ground conditions from this and a previous investigation on the site, a conceptual ground hazard model has been created for the site. This demonstrates the general absence of a potential source of contamination at harmful levels in the proposed context of the development. The model also highlights the potential pathway – receptor linkages that were considered.

The conceptual model presented in Figure 1 shows potential pollutant linkages are not likely to exist between the made ground horizon and end users of the site, though pathways remain between this horizon and vegetation, neighbouring sites and the materials used in constructing the building itself.



SOURCES

NO DISCERNABLE PHYSICAL SOURCE IS PRESENT

A – Raised levels of BaP in vicinity of BH2 at 0.20m and raised levels of selenium and PAH in leachate from the same area are currently considered to pose a low risk to controlled waters & neighbouring sites

RECEPTORS and PATHWAY

- 1 End Users and Construction Workers through Direct Contact / Inhalation. (NB –Hard standing is proposed across the whole site, therefore the pollutant linkage between end users of the site and the potential source of pollution in the made ground would not be present.)
- 2 The Building and Supply Pipes through Direct Contact.
- 3 Neighbouring Sites through lateral migration (in and out of site).
- 4 Ground Water through leaching of contaminants.
- 5 Surface Water through leaching / runoff.

Figure 1 – Conceptual Cross Section of site showing a Source Pathway and Receptor Model

5. Hazardous Gas

A moderate to high gas risk was highlighted by the desk study and previous site investigation because of the presence of fill materials thought to be associated with historical steel works and railway land uses on and near to the site and past industrial land uses in the area. Therefore three (3) gas wells were installed in the boreholes and have been subject to gas monitoring at a range of atmospheric pressures in accordance with the recommendations of CIRIA C665.

Five gas visits remain to be completed and a summary of gas results to date are included in the table below.

Table 4 Summary of Gas Monitoring Data

Borehole	Number of Visits	CH ₄ (%)	CO ₂ (%)	O ₂ (%)	Flow Rate (l/hr)	Atmospheric Pressure (mb)
BH1	1	0.0	1.4	19.4	<0.1	1010
BH4		0.0	0.2	20.3	<0.1	
BH6		0.0	1.0	18.9	<0.1	

A single gas monitoring visit has been completed so far at a pressure of 1010mb returning near normal levels of O₂ at 18.9 -20.3%, with zero (0.0%) CH₄ and raised levels of CO₂ at 0.2-1.4%. Gas flow rates were below detectable limits at <0.1lt/hr.

6. Conclusions

6.1 Foundations

6.1.1 Minor Structures

Given the occurrence of variably compact ashy made ground to depths of up to 2.75m and natural clay of variable strength including soft material below this it considered that the site is not suitable for normal strip or pad foundations. In light of this raft or semi raft foundations bearing on the fill may be adopted for lightly loaded or minor structures. As the fill is essentially granular, long term settlement would not be expected. Raft bearing pressures should not exceed 50kN/m².

6.1.2 Major Structures

It was anticipated by the developer and his engineer that larger structures at the site, such as the digester tanks might need to be constructed on piled foundations and the variable and poorer ground conditions nearer surface encountered in the boreholes have confirmed this.

The generally medium dense sands encountered below the site between depths of 6.80m to 19.80m would provide a suitable horizon to locate friction piles. SPT N₃₀₀ values in this horizon ranged from of N=12 to N=39 but were mostly between 20 and 26. Advice on pile design should be sought from a specialist piling contractor.

6.2 Existing Concrete Slab

Two concrete cores were taken from the existing warehouse floor at the site. The concrete floor was found to be between 0.18m and 0.20m thick. No reinforcement was found in these samples of core and no DPM was present below the slab.

6.3 Soakaway Design

The soakaway test has confirmed that the ashy fill horizon exhibits extremely high permeability and on the basis of its very good drainage characteristics would be suitable for soakaway construction.

However this horizon may not be suitable as the fill is of steel works origin (a known potentially contaminative industry) and the results of leachate testing have shown that it could provide a source of mobile PAH and Selenium contamination. Therefore, as a precaution to protect neighbouring sites and the ground water, it is recommended that soakaways are not located in the fill and an alternative means of disposing waste water is found.

6.4 Road Design

The CBR testing returned results in excess of 5% at all three locations.

Therefore no additional capping will be needed in the vicinity of new access roads and parking areas at the site and only the minimum sub base of 250mm (Categories 1 & 2) or 280mm (Categories 3, 4, or 5) will be required.

6.5 Concrete Design

Testing on samples of the ashy fill returned pH levels ranging from 7.6 to 11.4 and SO₄ levels ranging from 10mg/l to 850mg/l and indicate that concrete in contact with the ground would need to be designed to sulphate class DS-2, AEC class AC-2.

6.6 Contamination

Contamination testing carried out on samples of fill recovered from the site has generally returned low levels of contamination mostly below the chosen assessment criteria.

Contamination testing carried out at the site previously in 2005 also returned favourable results with levels also below the current assessment criteria. Therefore contamination at the site is not considered to be a major issue in the context of the proposed commercial end use of the site. Furthermore as most of the ground surface/fill horizon will be covered by hard-standing and floor slabs or tank bases, the pathway between the soil and the sites end users will be removed effectively removing any risk that the fill might pose.

Raised levels of BaP were returned from a single sample of fill from BH2 at 0.20m with elevated levels of PAH and Selenium in the leachate from this sample. In light of this it is recommended that some limited remediation (comprising excavation and removal to a

depth of 0.50m) is carried out in the vicinity of BH2, although there is not considered to be a serious risk to human health owing to the installation of hard-standing at this location. Localised removal of the fill at BH5 would also remove the current low risk that it poses to ground and surface water and neighbouring sites through leaching and run-off.

Ashy fill waste from the site would need to be disposed of at a suitably licensed land fill.

Workers involved in the construction of the new development would need to be made aware of the raised levels of PAH within the fill and should wear appropriate PPE to limit contact with the soil where possible.

6.7 Hazardous Gas

On the basis of the initial gas results the gas conditions at the site would be expected to fall within "Characteristic Situation 1" of the Modified Wilson and Card classification.

However, five (5) more gas visits are required before final advice on the gas situation can be given and results taken at a later date and at lower air pressures may indicate a need for higher level gas protection measures to be installed. These results and final conclusions are anticipated to be completed in an addendum to this report in October 2012.

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Issued on behalf of GEOINVESTIGATE LIMITED by



Jamie Hogg BSc (Hons) FGS
Geotechnical Engineer

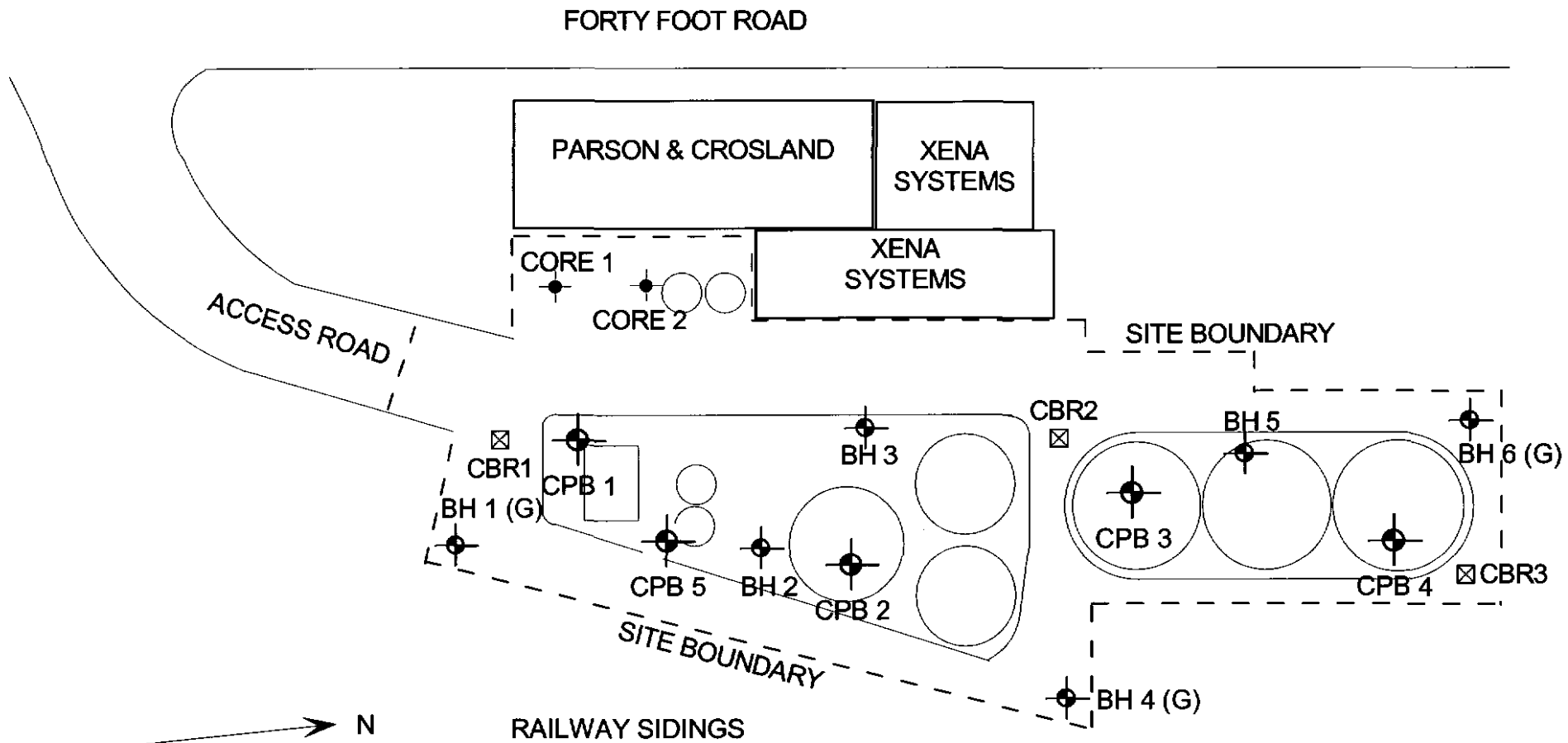


Ross Nicolson BSc (Hons) MSc(Eng) CEng MIMM
Principal Geotechnical Engineer

SITE PLAN

GEOINVESTIGATE Ltd.

OUR REF: G12146	YOUR REF:	SITE PLAN (NOT TO SCALE)
DATE: July 2012	LOCATION: Proposed BioGas Facility, Forty Foot Road, Middlesbrough	



NB - Proposed development is indicated feintly in background.

WINDOWLESS SAMPLING BOREHOLE LOGS

GEOINVESTIGATE Ltd.

Your Ref:

Our Ref: G12146

BH No.1 Sheet No. 1 of 1

Location: Proposed Biogas Facility, Forty Foot Road, Middlesbrough

DATE: 18/07/12

Depth (m)	Description of Strata	Thickness	Legend	Gas Well	Sample	Test Type Result	Root Information	Depth to Water	Depth (m)
0.15	MADE GROUND Yellowish brown dolomitic hardcore.	150				Cv kN/m ²			
1.20	MADE GROUND "Medium dense" Dark grey sandy gravel of slag, ash, coal and sandstone. Cobbles noted.	1050			O				0.20
					O				0.50
					O				0.75
					O				1.00
									1.25
	Firm grey mottled greenish brown CLAY.				O	52			1.50
									1.75
	Becoming soft to firm and silty from 2.20m.	1600			O	60			2.00
									2.25
	Becoming soft sandy silty CLAY from 2.60m.				O	32			2.50
									2.75
2.80									
	Soft grey sandy SILT/ silty SAND. Sand is fine.	400			O	32			3.00
3.20									3.25
	Very soft dark grey clayey sandy SILT / silty s CLAY. Sand is very fine.				O	20			3.50
									3.75
	Sand content increasing from 3.90m.	1350			O	15			4.00
									4.25
					O	16			4.50
4.55									
	"Loose" dark grey clayey silty SAND. Sand is	450							4.75
5.00	Borehole terminated at 5.00m				O				5.00

Remarks: Hand excavated to 1.00m

Dynamic windowless sampling to 5.00m

Borehole remained open and dry on completion

Gas well to 5.00m (4m slotted, 1m plain)

	Plain Key:		Disturbed sample
	Slotter Pipe		Cv Shear vane
	Bentonite		W Water sample
	Gravel		

GEOINVESTIGATE Ltd.

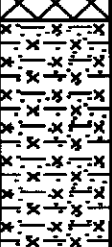
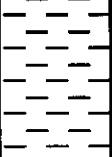
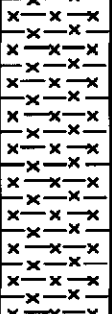
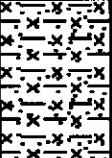
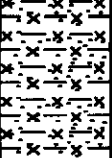
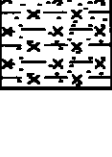
Your Ref:

Our Ref. G12146

BH No.2 Sheet No. 1 of 1

Location: Proposed Biogas Facility, Forty Foot Road, Middlesbrough

DATE: 18/07/12

Depth (m)	Description of Strata	Thickness	Legend	Sample	Test Type Result	Root Information	Depth to Water	Depth (m)
0.15	MADE GROUND "Medium dense" yellow sandy gravel of dolomite hardcore.	150			Cv kN/m ²			
1.20	MADE GROUND "Medium dense" dark grey and orangish brown sandy gravel of slag, ash, brick, clinker, coal, sandstone and occasional iron. Cobbles noted.	950		O				0.20
				O				0.50
								0.75
				O				1.00
								1.25
1.50	MADE GROUND Soft brown and orangish brown very sandy gravelly clay. Gravel is fine to coarse of sandstone, slag and brick.	300		O	50			1.50
2.20	Firm brownish green, brown mottled dark grey/blackish sandy silty CLAY. Becoming soft to firm from 1.80m.	700		O	34			1.75
								2.00
								2.25
	Firm greenish brown and grey CLAY.			O	63			2.50
								2.75
	Becoming silty and soft to firm from 2.90 with fine sandy inclusions.	1500		O	43			3.00
								3.25
	Becoming soft from 3.20m.			O	28			3.50
3.70								3.75
	Soft dark grey and brown sandy silty CLAY/very clayey SILT. Fine sandy inclusions noted.			O	21			4.00
								4.25
	Becoming very soft from 4.10m.	1600		O	18			4.50
								4.75
5.00	Borehole continued on Sheet 2			O	16			5.00

Remarks: Hand excavated to 0.85m

Dynamic windowless sampling to 6.00m

Borehole closed below 3.00m on completion

Casing to 2.00m.

Key: O Disturbed sample

Cv Shear vane

W Water sample

GEOINVESTIGATE Ltd.

Your Ref:

Our Ref. G12146

BH No.2 Sheet No. 2 of 2

Location: Proposed Biogas Facility, Forty Foot Road, Middlesbrough

DATE: 18/07/2012

Depth (m)	Description of Strata	Thick- ness	Legend	Sample	Test Type Result	Root Information	Depth to Water	Depth (m)
5.30	Soft dark grey and brown sandy silty CLAY/ very clayey SILT. Fine sandy inclusions noted.	1600		O	Cv kN/m²			5.25
5.70	Very soft dark grey sandy clayey SILT. Moist	400		O	10			5.50
6.00	Loose dark grey and greenish brown silty SAND. Sand is fine. Moist.	300		O				5.75
	Borehole terminated at 6.00m.							6.00

Remarks: Hand excavated to 0.85m
Dynamic windowless sampling to 6.00m
Borehole closed below 3.00m on completion
Casing to 2.00m.

Key: O Disturbed sample
Cv Shear vane
W Water sample

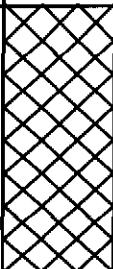
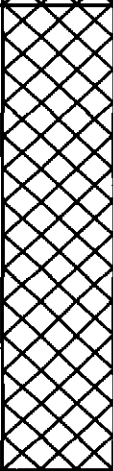
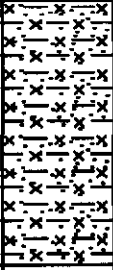
GEOINVESTIGATE Ltd.

Our Ref. G12146

BH No.3 Sheet No. 1 of 1

Location: Proposed Biogas Facility, Forty Foot Road, Middlesbrough

DATE: 18/07/12

Depth (m)	Description of Strata	Thickness	Legend	Sample	Test Type Result	Root Information	Depth to Water	Depth (m)
0.85	MADE GROUND "Medium dense" yellow sandy gravel. Gravel is fine to coarse of dolomitic hardcore, concrete and sandstone. Occasional cobbles noted. Underlain by HDPE membrain.	850		O O	Cv kN/m ²			0.20 0.50 0.75
2.20	MADE GROUND Compact dark grey, black and dark brown sandy gravel. Gravel is fine to coarse of ash, slag, concrete and clinker. Cobbles noted.	1350		O O O			1.75m	1.00 1.25 1.50 1.75 2.00 2.25
3.00	Firm to stiff grey and brown mottled orangish brown silty sandy CLAY. Becoming firm from 2.60m.	800		O O	76 51			2.50 2.75 3.00
	Borehole terminated at 3.00m due to borehole collapse.							

Remarks: Hand excavated to 0.80m
Dynamic windowless sampling to 3.00m
Borehole collapsed to 1.00m, closed to 1.80m
Casing to 1.00m.

Key: O Disturbed sample
Cv Shear vane
W Water sample

GEOINVESTIGATE Ltd.

Your Ref:

Our Ref. G12146

BH No.4 Sheet No. 1 of 1

Location: Proposed Biogas Facility, Forty Foot Road, Middlesbrough

DATE: 18/07/12

Depth (m)	Description of Strata	Thick-ness	Legend	Gas Well	Sample	Test Type Result	Root Information	Depth to Water	Depth (m)
0.50	MADE GROUND Compact brown very sandy gravel. Gravel is fine to coarse of sandstone, brick, concrete, coal and occasional slag. Cobbles noted.	500			O	Cv kN/m ²			0.20
					O				0.50
	MADE GROUND "Medium dense" dark grey and dark brown sandy gravel. Gravel is fine to coarse of sandstone, concrete, brick, glass coal and ash. Slight hydrocarbon noted.								0.75
	Becoming clayey in places from 1.20m				O				1.00
									1.25
		2000			O				1.50
									1.75
	Becoming reddish brown from 1.90m.				O				2.00
	Becoming wet from 2.00m.								2.25
2.50					O				2.50
	Firm to stiff grey mottled orangish brown slightly silty CLAY.	300				86			2.60
2.80									2.75
	Firm grey mottled orangish brown silty CLAY.				O	60			3.00
	Becoming soft from 3.10m.								3.25
		1200			O	28			3.50
									3.75
4.00					O	14			4.00
	Borehole terminated at 4.00m due to collapse of borehole.								

Remarks: Hand excavated to 0.60m

Dynamic windowless sampling to 4.00m

Borehole closed below 2.20m on completion

Gas well installed to 2.20m with bung and cover.

	Plain	Key:	O	Disturbed sample
	Slotter Pipe		Cv	Shear vane
	Bentonite		W	Water sample
	Gravel			

GEOINVESTIGATE Ltd.

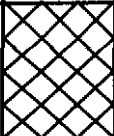
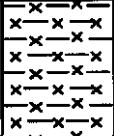
Your Ref:

Our Ref. G12146

BH No.5 Sheet No. 1 of 1

Location: Proposed Biogas Facility, Forty Foot Road, Middlesbrough

DATE: 18/07/12

Depth (m)	Description of Strata	Thickness	Legend	Sample	Test Type Result	N ₃₀₀ Values (Depth)	Depth to Water	Depth (m)
0.40	MADE GROUND Compact brown sandy gravel of dolomitic hardcore and sandstone.	400		O	Cv kN/m ²	N=161 15,17,28,36,40,57 (1.00-1.45m)		0.25
				O				0.50
	MADE GROUND "Medium dense" Dark grey very sandy gravel. Gravel is fine to coarse of slag, sandstone, clinker, coal and ash. Cobbles noted.							0.75
	Becoming very dense with occasional concrete from 0.90m.			O				1.00
		1800		O				1.25
				O				1.50
	Becoming reddish brown and orangish brown sandy gravel from 1.50m.			O				1.75
2.20				O				2.00
								2.25
	Firm grey mottled dark grey and brown silty CLAY. Slight organic odour noted.			O	58			2.50
		800						2.75
	Becoming firm to stiff from 2.70m.			O	76			3.00
3.00								
	Borehole terminated at 3.00m Casing deflected to angle by dense made ground.							

Remarks: Hand excavated to 0.90m
Dynamic windowless sampling to 3.00m
Borehole remained open and dry on completion
Cased to 2.00m.

Key: O Disturbed sample
Cv Shear vane
W Water sample

GEOINVESTIGATE Ltd.

Our Ref. G12146

BH No.6 Sheet No. 1 of 1

Location: Proposed Biogas Facility, Forty Foot Road, Middlesbrough

DATE: 18/07/2012

Depth (m)	Description of Strata	Thick-ness	Legend	Gas Well	Sample	Test Type Result	N=300 Values (Depth)	Depth to Water	Depth (m)
0.28	MADE GROUND Brown sandy gravel of sandstone, brick and dolomite hardcore. Underlain by geo-membrain.	280			O	Cv kN/m ²			0.25
	MADE GROUND "Dense" dark grey sandy gravel. Gravel is fine to coarse of sandstone, slag, dolomite and occasional coal. Cobbles noted.				O				0.50
	Becoming very dense from 0.90m.				O				0.75
					O				1.00
					O				1.25
					O				1.50
	Becoming orangish and reddish brown in places from 1.70m.				O				1.75
					O			1.80m	2.00
					O				2.25
					O				2.50
2.75					O				2.75
	Firm grey mottled greenish brown and brown CLAY				O	58			3.00
	Becoming soft from 3.20m				O				3.25
					O	29			3.50
	Becoming silty and sandy from 3.70m				O				3.75
	Becoming very soft from 3.80m.				O				4.00
4.00					O	19			4.00
	Borehole terminated at 4.00 due to collapse of borehole.								

Remarks: Hand excavated to 0.80m
 Dynamic windowless sampling to 4.00m
 Borehole closed below 2.60m on completion
 Casing to 1.00m.
 Gas well installed to 2.60m with bung and cover.

Plain Key: O Disturbed sample
 Slotter Pipe Cv Shear vane
 Bentonite W Water sample
 Gravel

GEOTECHNICAL TESTING RESULTS

- *Table 1 - Atterberg Limits*
+ *Moisture Profiles*
- *CBR Results*

GEOINVESTIGATE Ltd.

Atterberg Limit Test Results

Our ref. G12146

Table 1

Location: Proposed biogas facility, Forty Foot Road, Middlesbrough

TP / BH No.	Sample Depth (m)	Insitu Moisture Content (%)	% Passing BS 425 Micron Sieve	Corrected Moisture Content (%)	Plastic Limit (%)	Liquid Limit (%)	Plasticity Index (%)	Soil Classification BS5930 [1999]
1	1.00	27.8	>95	46.0	37.4	68.2	30.8	CH
	1.50	46.0						
	2.00	37.4						
	2.50	39.3						
	3.00	29.4						
	3.50	37.0						
	4.00	41.5						
	4.50	40.7						
	5.00	34.6						

Atterberg Limit Test Results

Table 1

Location: Proposed biogas facility, Forty Foot Road, Middlesbrough

TP / BH No.	Sample Depth (m)	Insitu Moisture Content (%)	% Passing BS 425 Micron Sieve	Corrected Moisture Content (%)	Plastic Limit (%)	Liquid Limit (%)	Plasticity Index (%)	Soil Classification BS5930 [1999]
2	0.50	13.8	>95	36.5	16.0	36.0	20.0	Cl
	1.00	21.0						
	1.50	36.5						
	2.00	86.6						
	2.50	35.5						
	3.00	38.0						
	3.50	50.1						
	4.00	38.5						
	4.50	45.1						
	5.00	44.5						
	5.50	43.9						
	6.00	32.0						

GEOINVESTIGATE Ltd.

Atterberg Limit Test Results

Our ref. G12146

Table 1

Location: Proposed biogas facility, Forty Foot Road, Middlesbrough

TP / BH No.	Sample Depth (m)	Insitu Moisture Content (%)	% Passing BS 425 Micron Sieve	Corrected Moisture Content (%)	Plastic Limit (%)	Liquid Limit (%)	Plasticity Index (%)	Soil Classification BS5930 [1999]
3	0.20	8.7						
	0.50	7.9						
	2.00	5.0						
	2.50	29.0	>95	29.0	25.3	43.4	18.1	CI
	3.00	36.9						
4	0.50	11.1						
	1.00	8.0						
	1.50	16.1						
	2.00	23.2						
	2.50	38.2	>95	38.2	29.7	72.1	42.4	CV
	3.00	27.2						
	3.50	39.1						
	4.00	62.0						

GEOINVESTIGATE Ltd.

Atterberg Limit Test Results

Our ref. G12146

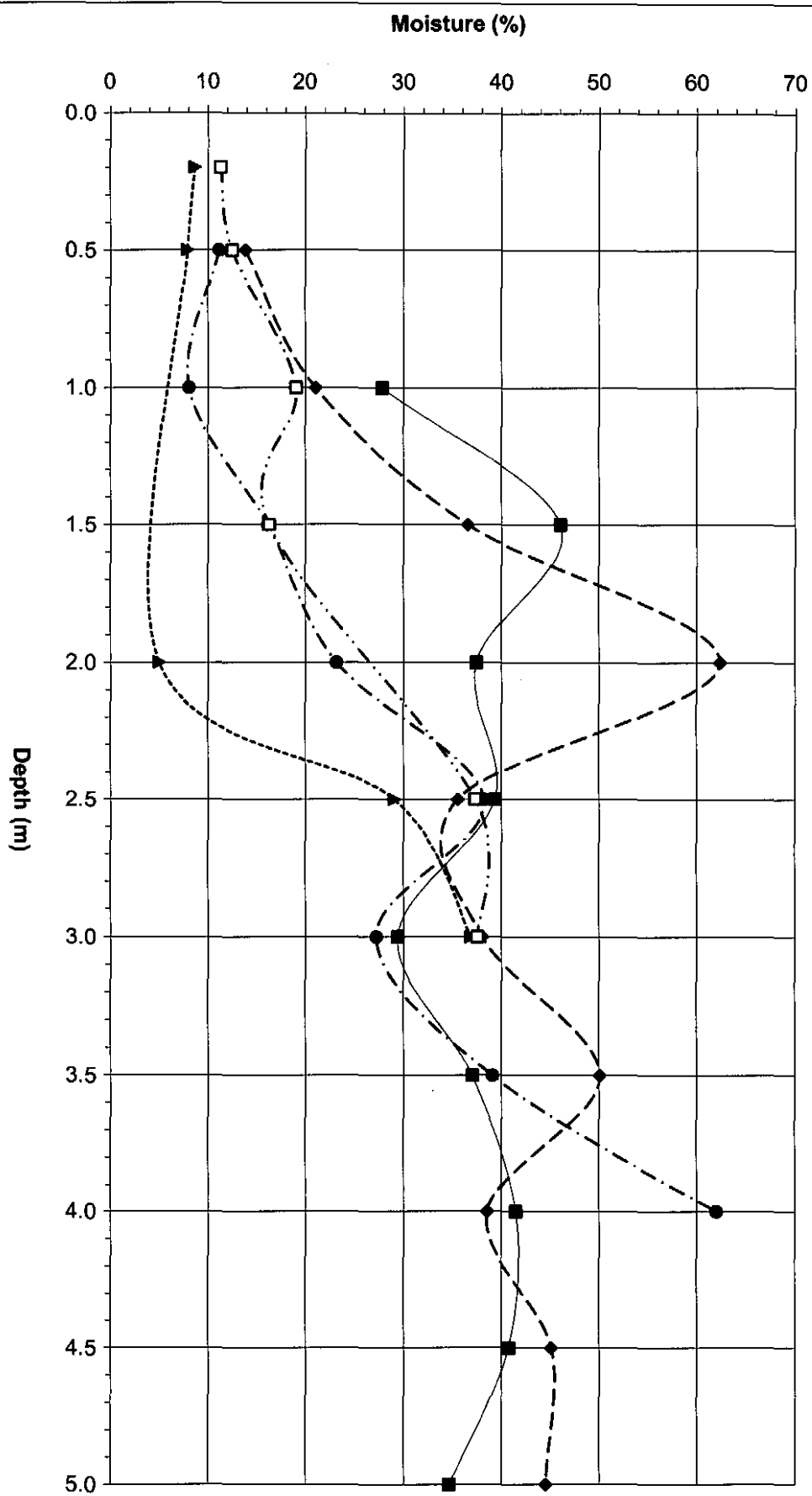
Table 1

Location: Proposed biogas facility, Forty Foot Road, Middlesbrough

TP / BH No.	Sample Depth (m)	Insitu Moisture Content (%)	% Passing BS 425 Micron Sieve	Corrected Moisture Content (%)	Plastic Limit (%)	Liquid Limit (%)	Plasticity Index (%)	Soil Classification BS5930 [1999]
5	0.20	11.3						
	0.50	12.5						
	1.00	19.0						
	1.50	16.2						
	2.50	37.3	>95	37.3	34.4	66.8	32.4	CH
	3.00	37.5						
6	0.20	5.4						
	1.00	18.4						
	1.50	13.0						
	2.00	29.2						
	3.00	41.5	>95	41.5	32.8	57.4	24.6	CH

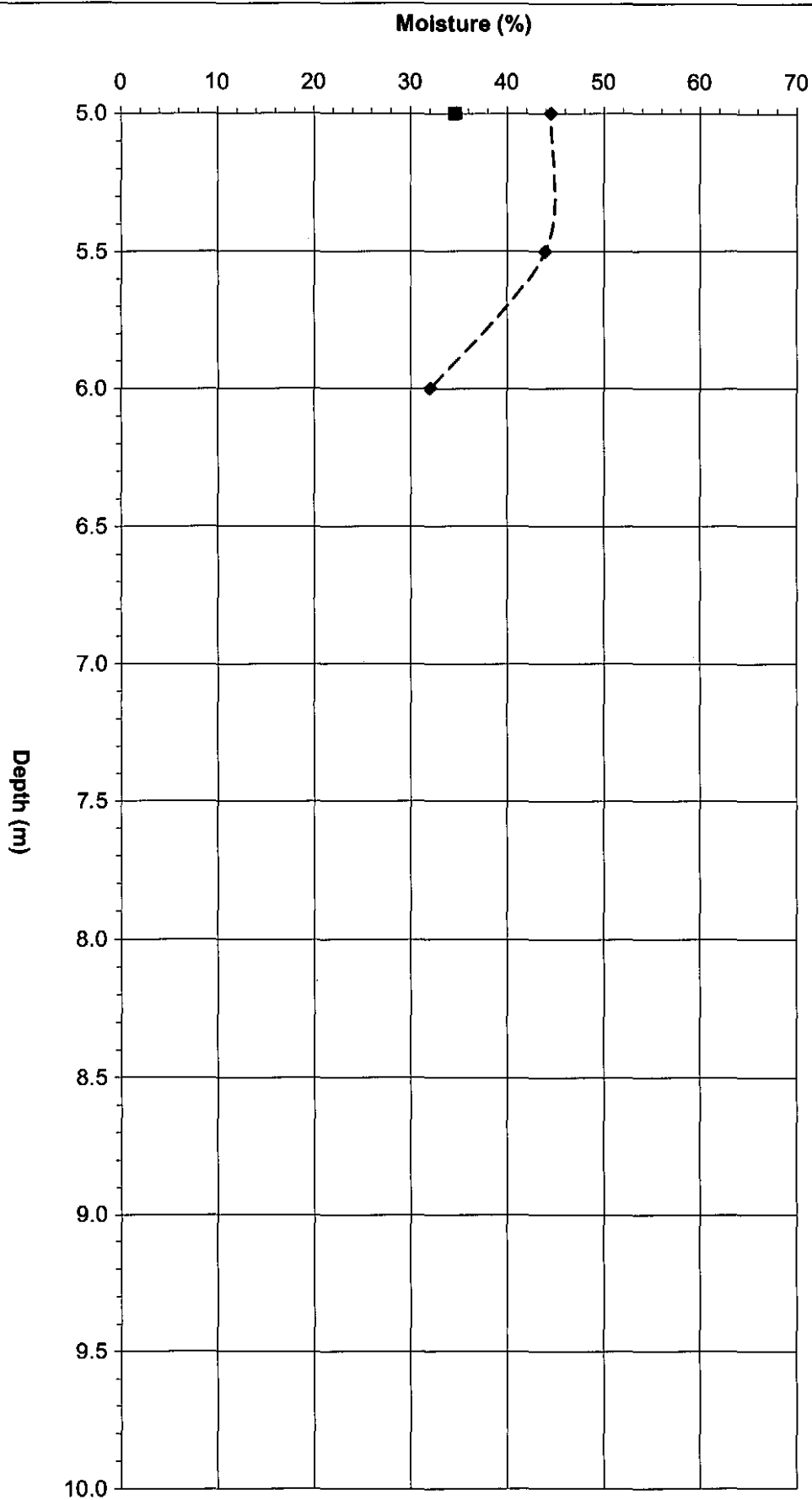
Moisture / depth profile

G12146



Moisture / depth profile

G12146



Middlesbrough Council

Highways & Transportation Manager: Derek Gittins

Laboratory Services Section, Unit 5, Whorlton Road, Riverside Park Ind. Estate, TS2 1QJ.

A Lead Authority Service supported by the Borough Councils of Stockton, Hartlepool and Redcar & Cleveland



Middlesbrough



Stockton-on-Tees



GeoInvestigate
Unit 4 & 5
Terry Dicken Industrial Estate
Ellerbeck Way
Stokesley
TS9 7AE

Please quote the following
reference in your reply

Your Order Ref: **G12146**

Our Report No: **12/029**

Our Project No: **D2393**

Date: **01st August 2012**

Pages: **1 of 2**

When telephoning please ask for:

Jackie Steel

Direct Dial: **01642 282308**

Email: **Jackie_steel@middlesbrough.gov.uk**

Switchboard: **(01642) 239076**

Fax: **(01642) 239078**

Dear Sirs,

Re: Remould CBR Testing – Forty Foot Road, M'bro

Further to your request, 3 CBR tests were delivered to our labs on the 19th July 2012 for testing to BS1377. Test report certificates are attached to this letter. The results may be summarised as follows:-

Sample Reference	Trial Hole	CBR Value %	Moisture Content (%)
12S0065	CBR 1 – Fill	35	15
12S0066	CBR 2 – Fill	18	7.7

The third sample contained too much oversized material for a test to be carried out, however based on the type of material it can be assumed the CBR value would be >5%.

Should you have any queries, please do not hesitate to call me direct on 01642 239076.

Yours sincerely,

Digitally signed by Jackie Steel.
Signature can be verified or original
Document viewed at Laboratory
Services on Request

Digitally signed by Jackie
Steel
DN: cn=Jackie Steel, o,
ou=Laboratory Services,
email=jackie_steel@middles
brough.gov.uk, c=GB
Date: 2012.08.01 16:35:11
+01'00'

Jackie Steel
Project Officer
For Group Leader (Advisory & Inspection Services)

Laboratory Services

Group Leader (Laboratory Services) – Chris Bates

Unit 5 Whorlton Road, Riverside Park Industrial Estate,

Middlesbrough TS2 1QJ

☎ (01642) 239070 Fax : (01642) 239078

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Middlesbrough

HARTLEPOOL



Stockton-on-Tees

STOCKTON-ON-TEES



Certificate Reference – CV12S0066/CBR /1

Page 1 of 1

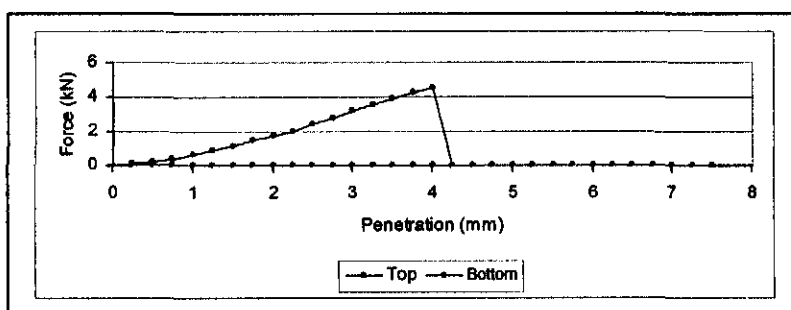
California Bearing Ratio (Remoulded 2.5kg)

BS 1377 : Part 4 : 1990, Clause 7

Client	Mr Jamie Hogg, Geoinvestigate, Units 4 & 5, Terry Dicken Ind. Estate, Ellerbeck Way, Stokesley		
Scheme / Site	D2393- Proposed Biogas Facility, Forty Foot Road, Mbro.		
Sample Location	Borehole / Trialhole Ref - Site Reference - Forty Foot Road, depth 0.30-0.65m.		
Material	Soil (Miscellaneous)		
Contractor	-		
Supplier / Source		Date Received	19/07/2012
Date Sampled	19/07/2012	Date Tested	25/07/2012
Sample Number	12S0066	Date Reported	1 August 2012

Test Results

Specimen Preparation	Remould		
% Oversize Material Removed	6.9		
Soil Description	Dark brown silt, with small amount of granular particles.		
Condition at Test	Not Soaked	Surcharge @ 12 kg Equivalent Construction	
No Layers / Blows per Layer	3/ 62	Device	2.5 kg Rammer
Dry Density (Mg/m ³)		Bulk Density (Mg/m ³)	
CBR Top 2.5mm Penetration	18.39	CBR Bottom 2.5mm Penetration	
CBR Top 5mm Penetration		CBR Bottom 5mm Penetration	
Moisture Content Top (%)	7.7	CBR Results Top (%)	18
Moisture Content Bottom (%)		CBR Results Bottom (%)	



Opinions and Interpretations

Test reached maximum calibration load allowed

Authorised Signatory

Jackie Steel (Project Officer)

Steven Shepherd (Laboratory Engineer)

[]

[]

Date

Jackie Steel

Digitally signed by Jackie Steel
Signature can be verified or original
Document viewed at Laboratory
Services on Request

Digitally signed by Jackie Steel

DN: cn=Jackie Steel, o,
ou=Laboratory Services,
email=jackie_steel@middlesbrough.gov.uk, c=GB

Date: 2012.08.01 16:25:42
+01'00'

This report relates only to the samples tested.

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S:\PROJECTS\D2393 Forty Foot Rd Geoinvest\MSDATA-12S0066-1-Jackiesteel-161831-0.DOC/ Oct 2010/Issue 9

Laboratory Services

Group Leader (Laboratory Services) – Chris Bates

Unit 5 Whorlton Road, Riverside Park Industrial Estate,

Middlesbrough TS2 1QJ

☎ (01642) 239070 Fax : (01642) 239078

A Lead Authority Service supported by the councils of Middlesbrough, Stockton-on-Tees, Hartlepool and Redcar and Cleveland



Middlesbrough

HARTLEPOOL



Stockton-on-Tees



Certificate Reference - CV12S0065/CBR /1

Page 1 of 1

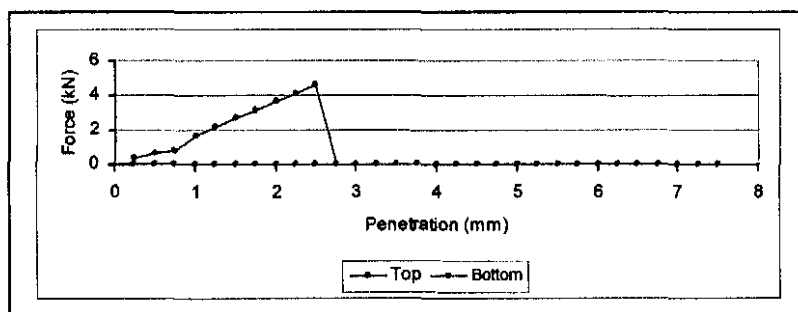
California Bearing Ratio (Remoulded 2.5kg)

BS 1377 : Part 4 : 1990, Clause 7

Client	Mr Jamie Hogg, Geoinvestigate, Units 4 & 5, Terry Dicken Ind. Estate, Ellerbeck Way, Stokesley		
Scheme / Site	D2393- Proposed Biogas Facility, Forty Foot Road, Mbros.		
Sample Location	Borehole / Trialhole Ref - Site Reference - Forty Foot Road, depth 0.35-0.55m.		
Material	Soil (Miscellaneous)		
Contractor	-		
Supplier / Source	Unknown	Date Received	19/07/2012
Date Sampled	19/07/2012	Date Tested	25/07/2012
Sample Number	12S0065	Date Reported	1 August 2012

Test Results

Specimen Preparation	Remould		
% Oversize Material Removed	17.1		
Soil Description	Dark brown coarse sand		
Condition at Test	Not Soaked	Surcharge @ 12 kg Equivalent Construction	450
No Layers / Blows per Layer	3/ 62	Device	2.5 kg Rammer
Dry Density (Mg/m³)	1.98	Bulk Density (Mg/m³)	2.28
CBR Top 2.5mm Penetration	34.75	CBR Bottom 2.5mm Penetration	
CBR Top 5mm Penetration		CBR Bottom 5mm Penetration	
Moisture Content Top (%)	15	CBR Results Top (%)	35
Moisture Content Bottom (%)		CBR Results Bottom (%)	



Opinions and Interpretations

Test reached maximum calibration load allowed

Digitally signed by

Jackie Steel

DN: cn=Jackie Steel, o,

ou=Laboratory

Services,

email=jackie_steel@m

iddlesbrough.gov.uk,

c=GB

Date: 2012.08.01

16:25:20 +01'00'

Jackie Steel

Digitally signed by Jackie Steel,
Signature can be verified or original
Document viewed at Laboratory
Services on Request

Authorised Signatory

Jackie Steel (Project Officer)

[] Date

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SOAKAWAY PIT

GEOINVESTIGATE Ltd.

Your Ref:

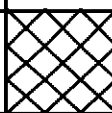
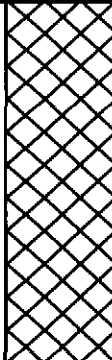
Our Ref. G12146

TP 1

Sheet No. 1 of 1

Location: Proposed Biogas Facility, Forty Foot Road, Middlesbrough

DATE: 27/07/2012

Depth (m)	Description of Strata	Thick- ness	Legend	Sample	Test Type Result	Root Information	Depth to Water	Depth (m)																					
0.30	MADE GROUND Compact grey, red and brown sandy gravel. Gravel is fine to coarse of brick, coal and occasional ash. Cobbles noted.	300			Cv kN/m ²																								
1.40	MADE GROUND "Medium dense" Dark grey sandy gravel of slag, ash, coal and sandstone. Cobbles noted.	1100																											
	Trial Pit Terminated at 1.40m <table><tr><td><u>Dimensions</u></td><td><u>Orientation</u></td></tr><tr><td>Width 500</td><td>North South</td></tr><tr><td>Depth 1400</td><td></td></tr><tr><td>Length 2000</td><td></td></tr></table> <table><tr><td><u>Time (seconds)</u></td><td><u>Depth (mm)</u></td></tr><tr><td>0</td><td>1060</td></tr><tr><td>60</td><td>1260</td></tr><tr><td>90</td><td>1340</td></tr><tr><td>120</td><td>1300</td></tr><tr><td>150</td><td>1390</td></tr><tr><td>180</td><td>1400</td></tr></table> End at 180 seconds Approximately 1000 litres pumped in to the trail pit. Trial pit visibly drained as it was filled. Maximum water level = 1.06m below ground level	<u>Dimensions</u>	<u>Orientation</u>	Width 500	North South	Depth 1400		Length 2000		<u>Time (seconds)</u>	<u>Depth (mm)</u>	0	1060	60	1260	90	1340	120	1300	150	1390	180	1400						
<u>Dimensions</u>	<u>Orientation</u>																												
Width 500	North South																												
Depth 1400																													
Length 2000																													
<u>Time (seconds)</u>	<u>Depth (mm)</u>																												
0	1060																												
60	1260																												
90	1340																												
120	1300																												
150	1390																												
180	1400																												

Remarks: Excavated by JCB 3CX

Key: O Disturbed sample
Cv Shear vane
W Water sample

CABLE PERCUSSION BOREHOLE LOGS

GEOINVESTIGATE Ltd

Your Ref.

Our Ref. G12146

BH No. 1

Sheet No. 1 of 2

Location: Proposed BioGas Facility, Forty Foot Road, Middlesbrough

DATE: 19/07/12

Depth (m)	Description of Strata	Thick- ness	Level (m)	Legend	Samples / Tests				Depth to Water	Depth (m)
					No	Type	Depth (m)	Results		
0.10	MADE GROUND Dolomitic hardcore.	100								
2.05	MADE GROUND Compact dark grey and black sandy gravel. Gravel is fine to coarse of ash, slag, clinker and occasional concrete. Cobbles noted.	1950			1	D	0.50	N=13 (2,2,3,3,3,4)		1.00
					2	S	1.50-1.95			
3.20	Soft to firm dark grey and brown silty CLAY.	1150			3	D	2.10	12 Blows		2.00
					4	U	3.00-3.45			
6.00	Soft dark grey clayey clayey SILT.	2800			5	S	4.50-4.95	N=1 0,0,1,0,0,0		4.00
					6	D	5.00			
7.90	Soft dark grey sandy SILT with occasional fine sand horizons noted. Becoming medium dense from 7.00m	1900			7	S	6.00-6.45	N=0 0,0,0,0,0,0		6.00
					8	S	7.00-7.45			
	Medium dense brown SAND.	11500			9	S	9.00-9.45	N=13 3,2,3,3,4,3		7.00
									6.80	
										8.00
										9.00
	Borehole continued on Sheet 2									10.00
Remarks: Light cable percussion drilling to 20.60m Casing installed from g.l to 20.00m Trial Excavated for 1.0 hrs from GL to 1.20m				Key: B Bulk disturbed sample Cv Shear vane S Standard Penetration Test W Water sample C SPT with solid cone D Small disturbed sample U Undisturbed sample						
				BH 1						

GEOINVESTIGATE Ltd

Your Ref.

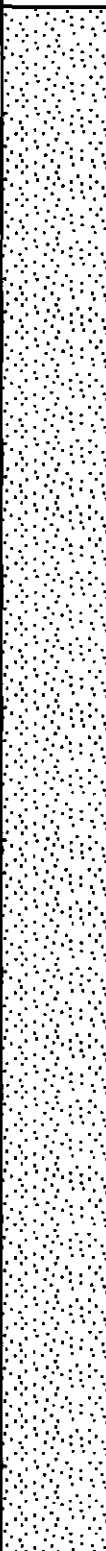
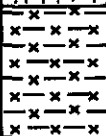
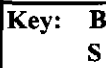
Our Ref. G12146

BH No. 1

Sheet No. 2 of 2

Location: Proposed BioGas Facility, Forty Foot Road, Middlesbrough

DATE: 19/07/12

Depth (m)	Description of Strata	Thick- ness	Level (m)	Legend	Samples / Tests				Depth to Water	Depth (m)
					No	Type	Depth (m)	Results		
	Medium dense brown SAND.				10	S	10.50-10.95	N=14 2,2,3,3,4,4		11.00
					11	S	12.00-12.45	N=15 2,3,4,3,4,4		12.00
										13.00
	Becoming greyish brown from 13.50m.				12	S	13.50-13.95	N=19 3,4,4,5,5,5		14.00
										15.00
		11500			13	S	15.00-15.45	N=24 4,5,6,6,5,7		16.00
										17.00
					14	S	16.50-16.95	N=26 4,5,6,7,6,7		18.00
										19.00
19.40					15	S	18.00-18.45	N=28 5,6,7,7,7,7		
	Firm to stiff dark grey silty CLAY. Slight organic odour noted.				16	S	19.50-19.95	N=21 4,4,5,6,5,5		20.00
20.60	Borehole Terminated at 20.60m	1200			17	S	20.10-20.45	N=21 4,5,5,5,5,6		20.60
Remarks: Light cable percussion drilling to 20.60m Casing installed from g.l to 20.00m Trial Excavated for 1.0 hrs from GL to 1.20m					Key: B Bulk disturbed sample Cv Shear vane S Standard Penetration Test W Water sample C SPT with solid cone D Small disturbed sample U Undisturbed sample					BH 1

GEOINVESTIGATE Ltd

Your Ref.

Our Ref. G12146

BH No. 2

Sheet No. 1 of 2

Location: Proposed BioGas Facility, Forty Foot Road, Middlesbrough

DATE: 23/07/12

Depth (m)	Description of Strata	Thick- ness	Level (m)	Legend	Samples / Tests				Depth to Water	Depth (m)
					No	Type	Depth (m)	Results		
0.20	MADE GROUND Dolomitic hardcore.	200								
1.50	MADE GROUND Compact dark grey and black sandy gravel. Gravel is fine to coarse of ash, slag, clinker and occasional concrete. Cobbles noted.	1300			1	D	0.50			1.00
3.20	MADE GROUND Compact reddish brown gravel and cobbles of brick. Bricks pushed ahead of auger.	1700			2 4	C D	1.50-1.95 1.50	N=75+		2.00
					3	C	2.50-2.95	N=75+		3.00
7.50	Soft dark grey clayey SILT.	4300			5	U	4.00-4.45	20 Blows		4.00
					6	S	5.50-5.95	N=8 1,2,2,2,2,2		5.00
					7	S	7.00-7.45	N=8 2,2,2,2,2,2	7.30	6.00
	Medium dense greyish brown SAND.	2500			8	S	8.50-8.95	N=37 4,7,8,8,9,12		7.00
										8.00
										9.00
	Borehole continued on Sheet 2									10.00
Remarks: Light cable percussion drilling to 20.00m Casing from GL to 18.00m Trial Excavated for 0.5 hrs from GL to 1.20m					Key: B Bulk disturbed sample Cv Shear vane S Standard Penetration Test W Water sample C SPT with solid cone D Small disturbed sample U Undisturbed sample					BH 2

GEOINVESTIGATE Ltd

Your Ref.

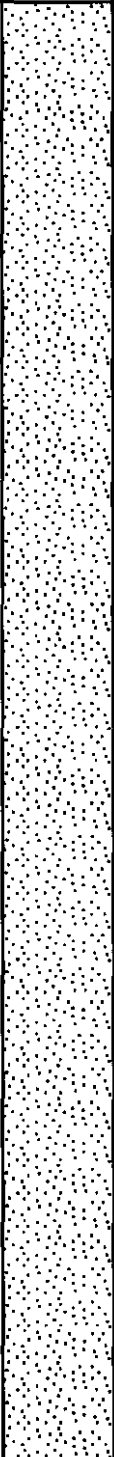
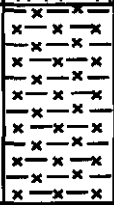
Our Ref. G12146

BH No. 2

Sheet No. 2 of 2

Location: Proposed BioGas Facility, Forty Foot Road, Middlesbrough

DATE: 23/07/12

Depth (m)	Description of Strata	Thick- ness	Level (m)	Legend	Samples / Tests				Depth to Water	Depth (m)
					No	Type	Depth (m)	Results		
	Medium dense greyish brown SAND.				9	S	10.00-10.45	N=23 2,4,5,5,6,7		11.00
					10	S	11.50-11.95	N=27 4,5,7,7,6,7		12.00
					11	S	13.00-13.45	N=25 4,5,6,6,7,6		13.00
					12	S	14.50-14.95	N=24 3,4,5,6,6,7		14.00
					13	S	16.00-16.45	N=27 4,5,7,7,6,7		15.00
					15	S	17.50-17.95	N=29 4,5,7,7,6,9		16.00
					16	S	19.00-19.45	N=23 2,4,5,6,6,6		17.00
	Becoming medium dense to dense from 15.80m				17	U	19.50-19.95	30 Blows (failed)		18.00
18.90					18	D	20.00			19.00
	Firm to stiff dark grey silty CLAY. Slight organic odour noted.				16	S	19.00-19.45	N=23 2,4,5,6,6,6		19.00
					17	U	19.50-19.95	30 Blows (failed)		20.00
20.00	Borehole terminated at 20.00m	10400								
Remarks: Light cable percussion drilling to 20.00m Casing from GL to 18.00m Trial Excavated for 0.5 hrs from GL to 1.20m					Key: B Bulk disturbed sample Cv Shear vane S Standard Penetration Test W Water sample C SPT with solid cone D Small disturbed sample U Undisturbed sample					BH 2

GEOINVESTIGATE Ltd

Your Ref.

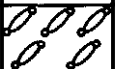
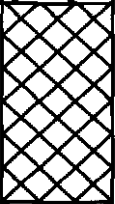
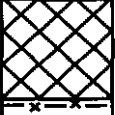
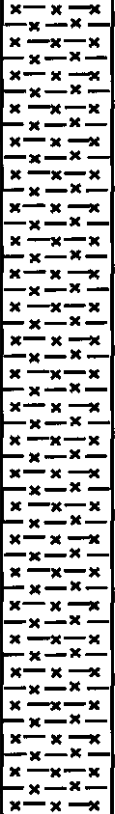
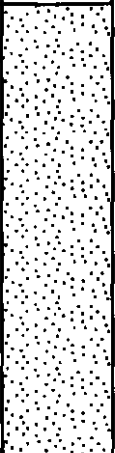
Our Ref. G12146

BH No. 3

Sheet No. 1 of 3

Location: Proposed BioGas Facility, Forty Foot Road, Middlesbrough

DATE: 20/07/12

Depth (m)	Description of Strata	Thick- ness	Level (m)	Legend	Samples / Tests				Depth to Water	Depth (m)
					No	Type	Depth (m)	Results		
0.40	CONCRETE - Reinforced.	400								
1.60	MADE GROUND Medium dense yellowish brown dolomitic hardcore.	1200			1	D	0.50			1.00
2.20	MADE GROUND Compact dark grey and black sandy gravel. Gravel is fine to coarse of ash, slag, clinker and occasional concrete. Cobbles noted.	600			2	S	1.50-1.95	N=10 2,3,2,3,3,2		2.00
7.10	Soft dark grey clayey SILT.	4900			3	D	2.20			
					4	S	3.00-3.45	N=3 1,0,0,1,1,1		3.00
					5	S	4.50-4.95	N=1 0,0,1,0,0,0		4.00
					6	S	6.00-6.45	N=3 1,1,1,0,1,1		5.00
					7	S	7.50-7.95	N=15 2,3,4,3,4,4		6.00
					8	D	8.00			7.00
					9	S	9.00-9.45	N=22 6,7,6,5,5,6		7.30
	Medium dense greyish brown SAND.	12100								
	Borehole continued on Sheet 2.									10.00
Remarks: Light cable percussion drilling to 23.00m Trial Excavated for 1.0 hrs from GL to 1.20m Casing installed from g.l to 19.50m					Key: B Bulk disturbed sample Cv Shear vane S Standard Penetration Test W Water sample C SPT with solid cone D Small disturbed sample U Undisturbed sample					BH 3

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Your Ref.

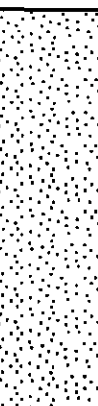
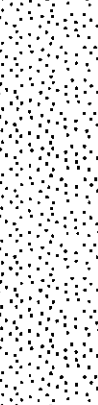
Our Ref. G12146

BH No. 3

Sheet No. 2 of 3

Location: Proposed BioGas Facility, Forty Foot Road, Middlesbrough

DATE: 20/07/12

Depth (m)	Description of Strata	Thick- ness	Level (m)	Legend	Samples / Tests				Depth to Water	Depth (m)
					No	Type	Depth (m)	Results		
	Medium dense brownish grey SAND.				10	S	10.50-10.95	N=39 5,7,7,10,12,10		11.00
					11	S	12.00-12.45	N=24 6,7,6,6,6,6		12.00
	Becoming dense from 13.10m				12	S	13.50-13.95	N=33 8,7,7,9,9,8		13.00
					13	S	15.00-15.45	N=32 6,7,7,8,8,9		14.00
	Becoming medium dense from 15.40m				14	S	16.50-16.95	N=24 6,6,6,6,6,6		15.00
		12100			15	S	18.00-18.45	N=35 6,7,10,9,8,8		16.00
	Becoming dense from 17.60m				16	D	19.20			17.00
					17	S	19.50-19.95	N=23 4,5,6,7,5,5		18.00
										19.00
19.20										
	Firm to stiff brownish grey silty CLAY. Slightly organic odour noted.				16	D	19.20			
		3800			17	S	19.50-19.95	N=23 4,5,6,7,5,5		20.00
	Borehole continued on Sheet 3									
Remarks: Light cable percussion drilling to 23.00m Trial Excavated for 1.0 hrs from GL to 1.20m Casing installed from g.l to 19.50m					Key: B Bulk disturbed sample Cv Shear vane S Standard Penetration Test W Water sample C SPT with solid cone D Small disturbed sample U Undisturbed sample					BH 3

GEOINVESTIGATE Ltd

Your Ref.

Our Ref. G12146

BH No. 3

Sheet No. 3 of 3

Location: Proposed BioGas Facility, Forty Foot Road, Middlesbrough

DATE: 20/07/12

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GEOINVESTIGATE Ltd

Your Ref.

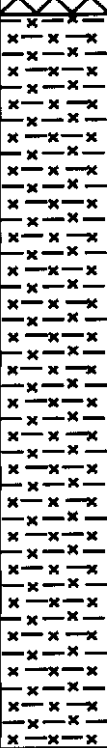
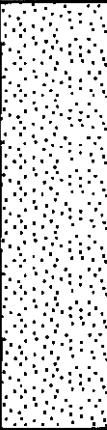
Our Ref. G12146

BH No. 4

Sheet No. 1 of 2

Location: Proposed BioGas Facility, Forty Foot Road, Middlesbrough

DATE: 25-26/07/12

Depth (m)	Description of Strata	Thick- ness	Level (m)	Legend	Samples / Tests				Depth to Water	Depth (m)
					No	Type	Depth (m)	Results		
0.40	MADE GROUND Gravel of brick, concrete ash and hardcore.	400								
3.00	MADE GROUND Compact dark grey and black sandy gravel. Gravel is fine to coarse of ash, slag, clinker and occasional concrete and brick. Cobbles noted. Obstruction encountered at 1.20m - poor sample recovery to 3.00m.	2600			1	D	0.50			1.00
					2	C	1.50-1.95	N=50/40mm 9,13,50/40mm		2.00
					3	D	2.00			2.00
					4	C	3.00-3.45	N=75+/0mm		3.00
7.50	Soft dark grey clayey SILT.	4500								4.00
					5	S	4.50-4.95	N=5 3,3,2,1,1,1		5.00
					6	S	6.00-6.45	N=3 1,0,0,1,1,1		6.00
					7	D	6.70		6.80	7.00
	Medium dense greyish brown SAND.	11500			8	S	7.50-7.95	N=20 2,3,4,5,6,6		8.00
					9	S	9.00-9.45	N=24 3,4,5,7,6,6		9.00
										10.00
Borehole continued to Sheet 2										
Remarks: Light cable percussion drilling to 20.00m Trial Excavated for 1.0 hrs from GL to 1.20m Casing installed from g.l to 18.00m				Key: B Bulk disturbed sample Cv Shear vane S Standard Penetration Test W Water sample C SPT with solid cone D Small disturbed sample U Undisturbed sample						
				BH 4						

GEOINVESTIGATE Ltd

Your Ref.

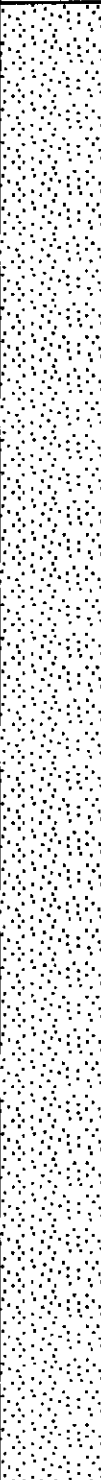
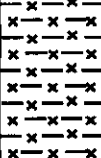
Our Ref. G12146

BH No. 4

Sheet No. 2 of 2

Location: Proposed BioGas Facility, Forty Foot Road, Middlesbrough

DATE: 25-26/07/12

Depth (m)	Description of Strata	Thick- -ness	Level (m)	Legend	Samples / Tests				Depth to Water	Depth (m)
					No	Type	Depth (m)	Results		
	Medium dense greyish brown SAND.	11500			10	S	10.50-10.95	N=24 3,4,5,5,7,7		11.00
					11	S	12.00-12.45	N=21 4,5,6,6,5,5		12.00
					12	S	13.50-13.95	N=27 4,5,7,7,7,6		13.00
					13	S	15.00-15.95	N=22 3,4,5,5,6,6		14.00
					14	S	16.50-16.95	N=23 3,5,5,6,6,6		15.00
					15	S	18.00-18.45	N=26 3,5,6,6,7,7		16.00
19.00					17	D	19.00			19.00
	Firm to stiff grey slightly silty CLAY. Slight organic odour noted.	1000			16	S	19.50-19.95	N=25 3,4,5,6,7,7		
20.00	Borehole terminated at 20.00m									
Remarks: Light cable percussion drilling to 20.00m Trial Excavated for 1.0 hrs from GL to 1.20m Casing installed from g.l to 18.00m				Key: B Bulk disturbed sample Cv Shear vane S Standard Penetration Test W Water sample C SPT with solid cone D Small disturbed sample U Undisturbed sample						
BH 4										

GEOINVESTIGATE Ltd

Your Ref.

Our Ref. G12146

BH No. 5

Sheet No. 1 of 3

Location: Proposed BioGas Facility, Forty Foot Road, Middlesbrough

DATE: 20/07/12

Depth (m)	Description of Strata	Thick- ness	Level (m)	Legend	Samples / Tests				Depth to Water	Depth (m)	
					No	Type	Depth (m)	Results			
0.30	MADE GROUND Yellowish brown hardcore.	300									
	MADE GROUND Compact dark grey and black sandy gravel. Gravel is fine to coarse of ash, slag, clinker and occasional concrete and brick. Cobbles noted.	2500			1	D	0.50			1.00	
					2	S	1.50-1.95	N=50/95mm 9,12,12,38/20mm		2.00	
2.80											
	Soft grey clayey SILT. Occasional sand horizons noted.	3700			3	S	3.00-3.45	N=4 1,2,1,1,1,1		3.00	
					4	S	4.50-4.95	N=7 1,1,1,2,2,2		4.00	
										5.00	
										6.00	
					5	S	6.00-6.45	N=0 0,0,0,0,0,0			
6.50											
	Loose grey silty SAND.	1000			6	D	6.50		7.00	7.00	
7.50											
	Medium dense greyish brown SAND.	12300			7	S	7.50-7.95	N=12 2,2,3,3,3,3		8.00	
					8	S	9.00-9.45	N=12 1,2,3,3,3,3		9.00	
Borehole continued on Sheet 2											10.00
Remarks: Light cable percussion drilling to 23.00m Trial Excavated for 1.0 hrs from GL to 1.20m Casing installed from g.l to 21.50m				Key: B Bulk disturbed sample Cv Shear vane S Standard Penetration Test W Water sample C SPT with solid cone D Small disturbed sample U Undisturbed sample							BH 5

GEOINVESTIGATE Ltd

Your Ref.

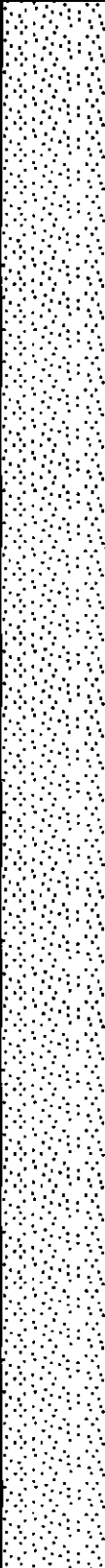
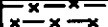
Our Ref. G12146

BH No. 5

Sheet No. 2 of 3

Location: Proposed BioGas Facility, Forty Foot Road, Middlesbrough

DATE: 20/07/12

Depth (m)	Description of Strata	Thick- ness	Level (m)	Legend	Samples / Tests				Depth to Water	Depth (m)
					No	Type	Depth (m)	Results		
	Medium dense greyish brown SAND.				9	S	10.50-10.95	N=17 2,3,4,4,4,5		11.00
					10	S	12.00-12.45	N=15 3,3,4,4,3,4		12.00
										13.00
					11	S	13.50-13.95	N=16 2,3,4,4,4,4		14.00
		12500			12	S	15.00-15.45	N=19 3,4,4,5,5,5		15.00
										16.00
					13	S	16.50-16.95	N=24 4,4,5,6,6,7		17.00
					14	S	18.00-18.45	N=25 4,5,5,6,7,7		18.00
										19.00
19.80	Becoming medium dense to dense from 19.50m				15	S	19.50-19.95	N=28 5,5,6,7,7,8		
	Firm to stiff grey silty CLAY. Slighty organic odour.	3200			16	D	19.80			20.00
Remarks: Light cable percussion drilling to 23.00m Trial Excavated for 1.0 hrs from GL to 1.20m Casing installed from g.l to 21.50m				Key: B Bulk disturbed sample Cv Shear vane S Standard Penetration Test W Water sample C SPT with solid cone D Small disturbed sample U Undisturbed sample						BH 5

GEOINVESTIGATE Ltd

Your Ref.

Our Ref. G12146

BH No. 5

Sheet No. 3 of 3

Location: Proposed BioGas Facility, Forty Foot Road, Middlesbrough

DATE: 20/07/12

Depth (m)	Description of Strata	Thick- ness	Level (m)	Legend	Samples / Tests				Depth to Water	Depth (m)
					No	Type	Depth (m)	Results		
23.00	Firm to stiff brownish grey silty CLAY. Slightly organic odour noted.	3200								

GAS RESULTS

GEOINVESTIGATE Ltd.

Gas Monitoring Results

Our Ref: G12146

Location: **Proposed Biogas Facility**, Forty Foot Road, Middlesbrough

03/08/2012

ATMOSPHERIC PRESSURE: 1010mb

	BH1	BH3	BH6
OXYGEN (O₂) (%)	19.4	20.3	18.9
CARBON DIOXIDE (CO₂) (%)	1.4	0.2	1.0
METHANE (CH₄) (%)	0.0	0.0	0.0
TOTAL FLOW RATE (lt/hr) Ave	0.0	0.0	0.0

CONTAMINATION TESTING RESULTS

Geo Investigate Ltd
Units 4 & 5 Terry Dicken Industrial Est
Ellerbeck Way
Stokesley, North Yorkshire
TS9 7AE

FAO Jack Harper
02 August 2012

Dear Jack Harper

Test Report Number 210044
Your Project Reference G12146, Forty Foot Road, Middlesbrough

Please find enclosed the results of analysis for the samples received 25 July 2012.

All soil samples will be retained for a period of one month and all water samples will be retained for 7 days following the date of the test report. Should you require an extended retention period then please detail your requirements in an email to customerservices@chemtest.co.uk. Please be aware that charges may be applicable for extended sample storage.

If you require any further assistance, please do not hesitate to contact the Customer Services team.

Yours sincerely



Keith Jones, Technical Manager



2183



Notes to accompany report:

- The sign < means 'less than'
- Tests marked 'U' hold UKAS accreditation
- Tests marked 'M' hold MCertS (and UKAS) accreditation
- Tests marked 'N' do not currently hold UKAS accreditation
- Tests marked 'S' were subcontracted to an approved laboratory
- n/e means 'not evaluated'
- i/s means 'insufficient sample'
- u/s means 'unsuitable sample'
- Comments or interpretations are beyond the scope of UKAS accreditation
- The results relate only to the items tested
- All results are expressed on a dry weight basis
- The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, phenols
- For all other tests the samples were dried at < 37°C prior to analysis
- Uncertainties of measurement for the determinands tested are available upon request
- None of the test results included in this report have been recovery corrected

Geo Investigate Ltd
Units 4 & 5 Terry Dicken Industrial Est
Ellerbeck Way
Stokesley, North Yorkshire
TS9 7AE

LABORATORY TEST REPORT



Results of analysis of 3 samples
received 25 July 2012

Report Date
02 August 2012

FAO Jack Harper

G12146, Forty Foot Road, Middlesbrough

Login Batch No

Chemtest LIMS ID

Sample ID

Sample No

Sampling Date

Depth

Matrix

				210044			
				AH56566	AH56567	AH56568	
				Foot Road, Middlesb	Foot Road, Middlesb	Foot Road, Middlesb	
				BH1	BH3	BH6	
				Not Provided	Not Provided	Not Provided	
				0.20m	1.00m	2.50m	
				LEACHATE	LEACHATE	LEACHATE	
SOP↓	Determinand↓	CAS No↓	Units↓	*			
1010	pH	PH		U	8.0	8.4	7.6
1300	Cyanide (total)	57125	mg l ⁻¹	U	< 0.05	< 0.05	< 0.05
	Cyanide (free)	57125	mg l ⁻¹	U	< 0.05	< 0.05	< 0.05
	Thiocyanate	302045	mg l ⁻¹	U	< 0.5	0.73	< 0.5
1325	Sulfide	18496258	mg l ⁻¹	U	<0.050	<0.050	<0.050
1220	Sulfate	14808798	mg l ⁻¹	U	21	4.7	170
1450	Arsenic	7440382	µg l ⁻¹	U	6.1	3.8	2.8
	Boron	7440428	µg l ⁻¹	U	26	19	110
	Cadmium	7440439	µg l ⁻¹	U	<0.08	<0.08	<0.08
	Chromium	7440473	µg l ⁻¹	U	3.9	1.9	5.4
	Copper	7440508	µg l ⁻¹	U	<1	<1	<1
	Mercury	7439976	µg l ⁻¹	U	<0.5	<0.5	<0.5
	Nickel	7440020	µg l ⁻¹	U	<1	<1	2.6
	Lead	7439921	µg l ⁻¹	U	<1	<1	<1
	Selenium	7782492	µg l ⁻¹	U	22	8.4	7.1
	Zinc	7440666	µg l ⁻¹	U	<1	<1	1.2
1490	Chromium (trivalent)	16065831	µg l ⁻¹	N	<20	<20	<20
	Chromium (hexavalent)	18540299	µg l ⁻¹	U	<20 *	<20 *	<20 *
1701	PAH (total EPA 16)		µg l ⁻¹	U	11	<2	<2
1920	Phenols (total)		mg l ⁻¹	N	< 0.03	< 0.03	< 0.03

*No sampling date was specified, stability times for this analyte may have been exceeded and these results may be compromised and will not be accredited (UKAS/MCerts)

All tests undertaken between 23/07/2012 and 02/08/2012

* Accreditation status

This report should be interpreted in conjunction with the notes on the accompanying cover page.

Column page 1

Report page 1 of 4

LIMS sample ID range AH56557 to AH56568

LABORATORY TEST REPORT

Results of analysis of 9 samples
received 25 July 2012

Report Date
02 August 2012

FAO Jack Harper

G12146, Forty Foot Road, Middlesbrough

Login Batch No

Chemtest LIMS ID

Sample ID

Sample No

Sampling Date

Depth

Matrix

SOP↓	Determinand↓	CAS No↓	Units↓	*	00.2	00.2	00.2	00.2	00.2	00.2
2010	pH			M	8.2	8.6	8.2	11.4	7.6	8.4
2180	Sulfur (elemental)	7704349	mg kg ⁻¹	M	88	660	110	81	110	25
2300	Cyanide (free)	57125	mg kg ⁻¹	M	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	Cyanide (total)	57125	mg kg ⁻¹	M	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	Thiocyanate	302045	mg kg ⁻¹	M	7.5	<5.0	<5.0	<5.0	<5.0	<5.0
2325	Sulfide (Easily Liberatable)	18496258	mg kg ⁻¹	M	17	45	82	41	43	18
2625	Total Organic Carbon		%	M	25			1.2	0.82	
2120	Boron (hot water soluble)	7440428	mg kg ⁻¹	M	<0.4	<0.4	<0.4	0.4	0.7	<0.4
	Sulfate (2:1 water soluble) as SO4	14808798	g l ⁻¹	M	<0.01	<0.01	<0.01	0.85	0.12	0.01
2490	Chromium (hexavalent)	18540299	mg kg ⁻¹	N	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2430	Sulfate (total) as SO4	14808798	%	M	0.15	0.09	0.13	0.55	0.27	0.04
2450	Arsenic	7440382	mg kg ⁻¹	M	59	29	41	16	57	12
	Cadmium	7440439	mg kg ⁻¹	M	0.20	0.75	<0.10	<0.10	<0.10	<0.10
	Chromium	7440473	mg kg ⁻¹	M	50	52	220	27	820	45
	Copper	7440508	mg kg ⁻¹	M	130	100	100	56	100	26
	Mercury	7439976	mg kg ⁻¹	M	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
	Nickel	7440020	mg kg ⁻¹	M	42	38	140	25	97	28
	Lead	7439921	mg kg ⁻¹	M	84	180	68	47	300	65
	Selenium	7782492	mg kg ⁻¹	M	0.50	0.50	0.50	<0.20	0.66	<0.20
	Zinc	7440666	mg kg ⁻¹	M	220	320	46	120	200	94
2490	Chromium (trivalent)	7440473	mg kg ⁻¹	N	50	52	220	27	820	45
2675	TPH aliphatic >C5-C6		mg kg ⁻¹	N	< 0.1 ^{1 2}				< 0.1 ^{1 2}	
	TPH aliphatic >C6-C8		mg kg ⁻¹	N	< 0.1 ^{1 2}				< 0.1 ^{1 2}	

¹No sampling date was specified, stability times for this analyte may have been exceeded and these results may be compromised and will not be accredited (UKAS/MCerts)

²The sample container/fill level was not appropriate for the specified analysis - these results may be compromised and will not be accredited (UKAS/MCerts)

All tests undertaken between 23/07/2012 and 02/08/2012

* Accreditation status

This report should be interpreted in conjunction with the notes on the accompanying cover page.

Column page 1

Report page 2 of 4

LIMS sample ID range AH56557 to AH56568

LABORATORY TEST REPORT

Results of analysis of 9 samples
received 25 July 2012

Report Date
02 August 2012

FAO Jack Harper

G12146, Forty Foot Road, Middlesbrough

				210044					
				AH56558	AH56559	AH56561	AH56562	AH56563	AH56564
				Foot Road, Middlesb	Foot Road, Middlesb	Foot Road, Middlesb	Foot Road, Middlesb	Foot Road, Middlesb	Foot Road, Middlesb
				BH1	BH2	BH3	BH4	BH5	BH6
				Not Provided	Not Provided	Not Provided	Not Provided	Not Provided	Not Provided
				0.50m	0.20m	1.50m	0.20m	2.00m	0.50m
				SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
2675	TPH aliphatic >C8-C10	mg kg ⁻¹	N	< 0.1 ^{1 2}				< 0.1 ^{1 2}	
	TPH aliphatic >C10-C12	mg kg ⁻¹	M	< 1 ^{1 2}				< 1 ^{1 2}	
	TPH aliphatic >C12-C16	mg kg ⁻¹	M	< 1 ^{1 2}				< 1 ^{1 2}	
	TPH aliphatic >C16-C21	mg kg ⁻¹	M	< 1 ^{1 2}				< 1 ^{1 2}	
	TPH aliphatic >C21-C35	mg kg ⁻¹	M	< 1 ^{1 2}				< 1 ^{1 2}	
	TPH aliphatic >C35-C44	mg kg ⁻¹	N	< 1 ^{1 2}				< 1 ^{1 2}	
	TPH aromatic >C5-C7	mg kg ⁻¹	N	< 0.1 ^{1 2}				< 0.1 ^{1 2}	
	TPH aromatic >C7-C8	mg kg ⁻¹	N	< 0.1 ^{1 2}				< 0.1 ^{1 2}	
	TPH aromatic >C8-C10	mg kg ⁻¹	N	< 0.1 ^{1 2}				< 0.1 ^{1 2}	
	TPH aromatic >C10-C12	mg kg ⁻¹	M	< 1 ^{1 2}				< 1 ^{1 2}	
	TPH aromatic >C12-C16	mg kg ⁻¹	M	3.1 ^{1 2}				< 1 ^{1 2}	
	TPH aromatic >C16-C21	mg kg ⁻¹	M	7.7 ^{1 2}				< 1 ^{1 2}	
	TPH aromatic >C21-C35	mg kg ⁻¹	M	17 ^{1 2}				< 1 ^{1 2}	
	TPH aromatic >C35-C44	mg kg ⁻¹	N	< 1 ^{1 2}				< 1 ^{1 2}	
	Total Petroleum Hydrocarbons	mg kg ⁻¹	N	28 ^{1 2}				< 10 ^{1 2}	
2700	Naphthalene	91203 mg kg ⁻¹	M		3	0.67	< 0.1		< 0.1
	Acenaphthylene	208968 mg kg ⁻¹	M		2	1.8	< 0.1		< 0.1
	Acenaphthene	83329 mg kg ⁻¹	M		5	0.73	1		< 0.1
	Fluorene	86737 mg kg ⁻¹	M		4.1	0.23	0.66		< 0.1
	Phenanthrene	85018 mg kg ⁻¹	M		44	2.2	5.5		1.3
	Anthracene	120127 mg kg ⁻¹	M		11	0.3	1.3		0.16
	Fluoranthene	206440 mg kg ⁻¹	M		61	1.2	10		2.3
	Pyrene	129000 mg kg ⁻¹	M		48	1.8	12		2
	Benzo[a]anthracene	56553 mg kg ⁻¹	M		33	0.78	5.3		0.92

¹No sampling date was specified, stability times for this analyte may have been exceeded and these results may be compromised and will not be accredited (UKAS/MCerts)

²The sample container/fill level was not appropriate for the specified analysis - these results may be compromised and will not be accredited (UKAS/MCerts)

All tests undertaken between 23/07/2012 and 02/08/2012

* Accreditation status

This report should be interpreted in conjunction with the notes on the accompanying cover page.

Column page 1

Report page 3 of 4

LIMS sample ID range AH56557 to AH56568

LABORATORY TEST REPORT

Results of analysis of 9 samples
received 25 July 2012

Report Date
02 August 2012

FAO Jack Harper

G12146, Forty Foot Road, Middlesbrough

				210044					
				AH56558	AH56559	AH56561	AH56562	AH56563	AH56564
				Foot Road, Middlesb	Foot Road, Middlesb	Foot Road, Middlesb	Foot Road, Middlesb	Foot Road, Middlesb	Foot Road, Middlesb
				BH1	BH2	BH3	BH4	BH5	BH6
				Not Provided	Not Provided	Not Provided	Not Provided	Not Provided	Not Provided
				0.50m	0.20m	1.50m	0.20m	2.00m	0.50m
				SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
2700	Chrysene	218019	mg kg ⁻¹	M	39	0.98	6.1		2.8
	Benzo[b]fluoranthene	205992	mg kg ⁻¹	M	28	0.8	5.2		1
	Benzo[k]fluoranthene	207089	mg kg ⁻¹	M	21	0.34	2.5		0.48
	Benzo[a]pyrene	50328	mg kg ⁻¹	M	23	0.57	5.1		0.84
	Dibenzo[a,h]anthracene	53703	mg kg ⁻¹	M	5	< 0.1	0.51		< 0.1
	Indeno[1,2,3-cd]pyrene	193395	mg kg ⁻¹	M	18	0.33	2.9		0.58
	Benzo[g,h,i]perylene	191242	mg kg ⁻¹	M	19	0.11	3		0.29
	Total (of 16) PAHs		mg kg ⁻¹	M	360	13	61		13
2701	PAH (total EPA 16)		mg kg ⁻¹	M	57	13	61	<2	13
2920	Phenols (total)		mg kg ⁻¹	N	<0.3	<0.3	<0.3	<0.3	<0.3

¹No sampling date was specified, stability times for this analyte may have been exceeded and these results may be compromised and will not be accredited (UKAS/MCerts)

²The sample container/fill level was not appropriate for the specified analysis - these results may be compromised and will not be accredited (UKAS/MCerts)

All tests undertaken between 23/07/2012 and 02/08/2012

* Accreditation status

This report should be interpreted in conjunction with the notes on the accompanying cover page.

Column page 1

Report page 4 of 4

LIMS sample ID range AH56557 to AH56568

Geo Investigate Ltd
Units 4 & 5 Terry Dicken Industrial Est
Ellerbeck Way
Stokesley, North Yorkshire
TS9 7AE

LABORATORY TEST REPORT

Asbestos in Soils



FAO Jack Harper

Results of analysis of 3 samples
received 25 July 2012
G12146, Forty Foot Road, Middlesbrough

Report Date
02 August 2012

Login Batch No: 210044

Qualitative Results

				ACM Type	SOP 2190	Asbestos Identification
Chemtest ID	Sample ID	Sample Desc	Depth (m)			
AH56557	BH1	Forty Foot	0.20	-		No Asbestos Detected
AH56560	BH3	Forty Foot	1.00	-		No Asbestos Detected
AH56565	BH6	Forty Foot	2.50	-		No Asbestos Detected

The detection limit for this method is 0.001%

Signed

Albert Vella
Senior Environmental Surveyor

Appendix SCR2 H5 Template (completed)

SITE CONDITION REPORT TEMPLATE

For full details, see H5 *SCR guide for applicants* v3 April 2013

COMPLETE SECTIONS 1-3 AND SUBMIT WITH APPLICATION

DURING THE LIFE OF THE PERMIT: MAINTAIN SECTIONS 4-7

AT SURRENDER: ADD NEW DOC REFERENCE IN 1.0; COMPLETE SECTIONS 8-10; & SUBMIT WITH YOUR SURRENDER APPLICATION.

1.0 SITE DETAILS	
Name of the applicant	Greenlight Teesside Limited
Activity address	Forty Foot Road, Middlesbrough, TS2 1HG, UK
National grid reference	NZ 48809 20979
Document reference and dates for Site Condition Report at permit application and surrender	Site Condition Report, SLR Reference 405.4387.0001/SCR, Feb 2014
Document references for site plans (including location and boundaries)	Drawings are included with the Environmental permit Application including:- Drawing 1: Location Plan with 10km Sensitive Receptors Drawing 2: Location Plan with 5km Sensitive Receptors Drawing 3: Layout Plan including Drainage & Release points

Note:

In Part A of the application form you must give us details of the site's location and provide us with a site plan. We need a detailed site plan (or plans) showing:

- Site location, the area covered by the site condition report, and the location and nature of the activities and/or waste facilities on the site.
- Locations of receptors, sources of emissions/releases, and monitoring points.
- Site drainage.
- Site surfacing.

If this information is not shown on the site plan required by Part A of the application form then you should submit the additional plan or plans with this site condition report.

2.0 Condition of the land at permit issue	
Environmental setting including: • geology • hydrogeology • surface waters	Appendix SCR1 provides three environmental site assessment reports that cover the area of the site including Phase 1 and Site Investigation reports: a) Oct 2005: Geoinvestigate Ltd. Desk Study & Site Investigation (SI) b) Feb 2011: Geoinvestigate Ltd. Phase1 Desk Study & SiteCheck Annex c) Jul 2012: Geoinvestigate Ltd. Site Investigation Geology: Refer to the Phase 1 report Appx SCR 1b Section 3.1) and its Annex. Hydrogeology: Refer to Appx SCR1a) Section 3.2 & Appx SCR1b) Section 3.3.3. Surface Water: Refer to Appx SCR1a) Section 3.2 & Appx SCR1b) Section 3.3.3.
Pollution history including: • pollution incidents that may have affected land	Current landuse: refer to Appx SCR1a) Section 3.1; Appx SCR 1b) Section 3.3.1, & Appx SCR1c) Section 1.

- historical land-uses and associated contaminants - any visual/olfactory evidence of existing contamination - evidence of damage to pollution prevention measures.	Pollution Incidents & Historic land-use: refer to Appx SCR1a) Section 3.1 & Appx SCR 1b) Section 3.2. Visual/Olfactory Evidence: Appx SCR1a) Section 5, & Appx SCR 1b)Section 4. Damage to PP Measures: None described.
Evidence of historic contamination, for example, historical site investigation, assessment, remediation and verification reports (where available).	Historic Contamination: refer to Site investigations in two reports in Appx SCR1a) Section 5 & Appx SCR 1c) whole document.
Baseline soil and groundwater reference data.	See Site Investigation, borehole logs and assessment reports in: - Appx SCR1a - Appx SCR 1c)
Supporting information	- Source information identifying environmental setting and pollution incidents [Annex SCR1 Documents] - Historical Ordnance Survey plans [Annex to SCR1b] - Site reconnaissance [Annex SCR1 Documents] - Historical investigation / assessment / remediation / verification reports[Annex SCR1 Documents] - Baseline soil and groundwater reference data [Annex SCR1 Documents]

3.0 Permitted activities	
Permitted activities	The process is a listed activity under Schedule 1 of the Environmental Permitting regulations as follows:- <i>Waste Recovery</i> Section 5.4 Part A(1)(b)(i) for the biological treatment of waste, <i>“Recovery or mix of recovery and disposal of non-hazardous waste with a capacity exceeding 75 tonnes per day (or 100 tonnes per day if the only waste treatment activity is anaerobic digestion) involving one or more of the following activities, and excluding activities covered by Council Directive 91/271/EEC ...”</i>
Non-permitted activities undertaken	No non permitted activities are proposed that are no directly associated with the listed activity.
Document references for: - plan showing activity layout; and - environmental risk assessment.	Drawings are included with the Environmental permit Application including:- Drawing 3 Plant Layout & Release Points H1 Environmental Risk Assessment SLR Reference 405.4387.0001/H1 Mar 2014. Also see Appx SCR1b) Section 5.3 and Appx SCR1c Section 4.2

Note:

In Part B of the application form you must tell us about the activities that you will undertake at the site. You must also give us an environmental risk assessment. This risk assessment must

be based on our guidance (*Environmental Risk Assessment - EPR H1*) or use an equivalent approach.

It is essential that you identify in your environmental risk assessment all the substances used and produced that could pollute the soil or groundwater if there were an accident, or if measures to protect land fail.

These include substances that would be classified as 'dangerous' under the Control of Major Accident Hazards (COMAH) regulations and also raw materials, fuels, intermediates, products, wastes and effluents.

If your submitted environmental risk assessment does not adequately address the risks to soil and groundwater we may need to request further information from you or even refuse your permit application.

4.0 Changes to the activity	
Have there been any changes to the activity boundary?	If yes, provide a plan showing the changes to the activity boundary.
Have there been any changes to the permitted activities?	If yes, provide a description of the changes to the permitted activities
Have any 'dangerous substances' not identified in the Application Site Condition Report been used or produced as a result of the permitted activities?	If yes, list of them
Checklist of supporting information	- Plan showing any changes to the boundary (where relevant) - Description of the changes to the permitted activities (where relevant) - List of 'dangerous substances' used/produced by the permitted activities that were not identified in the Application Site Condition Report (where relevant)

5.0 Measures taken to protect land	
Use records that you collected during the life of the permit to summarise whether pollution prevention measures worked. If you can't, you need to collect land and/or groundwater data to assess whether the land has deteriorated.	
Checklist of supporting information	- Inspection records and summary of findings of inspections for all pollution prevention measures - Records of maintenance, repair and replacement of pollution prevention measures

6.0 Pollution incidents that may have had an impact on land, and their remediation	
Summarise any pollution incidents that may have damaged the land. Describe how you investigated and remedied each one. If you can't, you need to collect land and /or groundwater reference data to assess whether the land has deteriorated while you've been there.	
Checklist of supporting information	- Records of pollution incidents that may have impacted on land - Records of their investigation and remediation

7.0 Soil gas and water quality monitoring (where undertaken)

Provide details of any soil gas and/or water monitoring you did. Include a summary of the findings. Say whether it shows that the land deteriorated as a result of the permitted activities. If it did, outline how you investigated and remedied this.

Checklist of supporting information	• Description of soil gas and/or water monitoring undertaken • Monitoring results (including graphs)
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8.0 Decommissioning and removal of pollution risk

Describe how the site was decommissioned. Demonstrate that all sources of pollution risk have been removed. Describe whether the decommissioning had any impact on the land. Outline how you investigated and remedied this.

Checklist of supporting information	• Site closure plan • List of potential sources of pollution risk • Investigation and remediation reports (where relevant)
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9.0 Reference data and remediation (where relevant)

Say whether you had to collect land and/or groundwater data. Or say that you didn't need to because the information from sections 3, 4, 5 and 6 of the Surrender Site Condition Report shows that the land has not deteriorated.

If you did collect land and/or groundwater reference data, summarise what this entailed, and what your data found. Say whether the data shows that the condition of the land has deteriorated, or whether the land at the site is in a "satisfactory state". If it isn't, summarise what you did to remedy this. Confirm that the land is now in a "satisfactory state" at surrender.

Checklist of supporting information	• Land and/or groundwater data collected at application (if collected) • Land and/or groundwater data collected at surrender (where needed) • Assessment of satisfactory state • Remediation and verification reports (where undertaken)
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10.0 Statement of site condition

Using the information from sections 3 to 7, give a statement about the condition of the land at the site. This should confirm that:

- the permitted activities have stopped
- decommissioning is complete, and the pollution risk has been removed
- the land is in a satisfactory condition.



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