Appendix D – NE3 – Carrs Industrial Estate North Extension, Haslingden – Access Road Preliminary Study (Appendices D to F)

D. Envirocheck Report



Envirocheck® Report:

Datasheet

Order Details:

Order Number:

241411014_1_1

Customer Reference:

391034AA06

National Grid Reference:

378340, 423810

Slice:

Α

Site Area (Ha):

2.26

Search Buffer (m):

1000

Site Details:

Site at

Rossendale Valley

Lancashire

Client Details:

Mr S Myles Mott Macdonald Spring Bank House 33 Stamford Street Altrincham Manchester WA14 1ES





Report Section	Page Number
Summary	-
Agency & Hydrological	1
Waste	38
Hazardous Substances	-
Geological	49
Industrial Land Use	56
Sensitive Land Use	87
Data Currency	88
Data Suppliers	94
Useful Contacts	95

Introduction

The Environment Act 1995 has made site sensitivity a key issue, as the legislation pays as much attention to the pathways by which contamination could spread, and to the vulnerable targets of contamination, as it does the potential sources of contamination.

For this reason, Landmark's Site Sensitivity maps and Datasheet(s) place great emphasis on statutory data provided by the Environment Agency/Natural Resources

Wales and the Scottish Environment Protection Agency; it also incorporates data from Natural England (and the Scottish and Welsh equivalents) and Local Authorities; and highlights hydrogeological features required by environmental and geotechnical consultants. It does not include any information concerning past uses of land. The datasheet is produced by querying the Landmark database to a distance defined by the client from a site boundary provided by the client. In this datasheet the National Grid References (NGRs) are rounded to the nearest 10m in accordance with Landmark's agreements with a number of Data Suppliers.

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Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Agency & Hydrological					
BGS Groundwater Flooding Susceptibility	pg 1	Yes	Yes	Yes	n/a
Contaminated Land Register Entries and Notices					
Discharge Consents	pg 2		3	14	2
Prosecutions Relating to Controlled Waters			n/a	n/a	n/a
Enforcement and Prohibition Notices					
Integrated Pollution Controls	pg 7		2		
Integrated Pollution Prevention And Control					
Local Authority Integrated Pollution Prevention And Control					
Local Authority Pollution Prevention and Controls	pg 7		1	1	6
Local Authority Pollution Prevention and Control Enforcements					
Nearest Surface Water Feature			Yes		
Pollution Incidents to Controlled Waters	pg 9		2	6	12
Prosecutions Relating to Authorised Processes	pg 12				1
Registered Radioactive Substances					
River Quality	pg 12		1		
River Quality Biology Sampling Points					
River Quality Chemistry Sampling Points					
Substantiated Pollution Incident Register	pg 12		1	2	2
Water Abstractions	pg 13			2	2 (*35)
Water Industry Act Referrals					
Groundwater Vulnerability Map	pg 23	Yes	n/a	n/a	n/a
Groundwater Vulnerability - Soluble Rock Risk			n/a	n/a	n/a
Groundwater Vulnerability - Local Information			n/a	n/a	n/a
Bedrock Aquifer Designations	pg 23	Yes	n/a	n/a	n/a
Superficial Aquifer Designations	pg 23	Yes	n/a	n/a	n/a
Source Protection Zones					
Extreme Flooding from Rivers or Sea without Defences	pg 23	Yes	Yes	n/a	n/a
Flooding from Rivers or Sea without Defences	pg 23	Yes	Yes	n/a	n/a
Areas Benefiting from Flood Defences				n/a	n/a
Flood Water Storage Areas				n/a	n/a
Flood Defences				n/a	n/a
OS Water Network Lines	pg 24	1	22	34	61





Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Waste					
BGS Recorded Landfill Sites	pg 38			1	
Historical Landfill Sites	pg 38		2	1	5
Integrated Pollution Control Registered Waste Sites					
Licensed Waste Management Facilities (Landfill Boundaries)	pg 39			1	2
Licensed Waste Management Facilities (Locations)	pg 40			1	3
Local Authority Landfill Coverage	pg 41	2	n/a	n/a	n/a
Local Authority Recorded Landfill Sites					
Potentially Infilled Land (Non-Water)	pg 41		1	2	7
Potentially Infilled Land (Water)	pg 41		6	10	12
Registered Landfill Sites	pg 43		2	2	5
Registered Waste Transfer Sites	pg 47				2
Registered Waste Treatment or Disposal Sites	pg 48			1	
Hazardous Substances					
Control of Major Accident Hazards Sites (COMAH)					
Explosive Sites					
Notification of Installations Handling Hazardous Substances (NIHHS)					
Planning Hazardous Substance Consents					
Planning Hazardous Substance Enforcements					





Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Geological					
BGS 1:625,000 Solid Geology	pg 49	Yes	n/a	n/a	n/a
BGS Estimated Soil Chemistry	pg 49	Yes	Yes		Yes
BGS Recorded Mineral Sites	pg 50				16
BGS Urban Soil Chemistry					
BGS Urban Soil Chemistry Averages					
CBSCB Compensation District			n/a	n/a	n/a
Coal Mining Affected Areas	pg 52	Yes	n/a	n/a	n/a
Mining Instability	pg 53	Yes	n/a	n/a	n/a
Man-Made Mining Cavities					
Natural Cavities					
Non Coal Mining Areas of Great Britain	pg 53	Yes		n/a	n/a
Potential for Collapsible Ground Stability Hazards	pg 53	Yes	Yes	n/a	n/a
Potential for Compressible Ground Stability Hazards	pg 53	Yes	Yes	n/a	n/a
Potential for Ground Dissolution Stability Hazards				n/a	n/a
Potential for Landslide Ground Stability Hazards	pg 53	Yes	Yes	n/a	n/a
Potential for Running Sand Ground Stability Hazards	pg 54	Yes	Yes	n/a	n/a
Potential for Shrinking or Swelling Clay Ground Stability Hazards	pg 54	Yes	Yes	n/a	n/a
Radon Potential - Radon Affected Areas	pg 55	Yes	n/a	n/a	n/a
Radon Potential - Radon Protection Measures	pg 55	Yes	n/a	n/a	n/a
Industrial Land Use					
Contemporary Trade Directory Entries	pg 56		49	39	93
Fuel Station Entries	pg 72			1	1
Points of Interest - Commercial Services	pg 72		7	14	34
Points of Interest - Education and Health					
Points of Interest - Manufacturing and Production	pg 77		21	13	28
Points of Interest - Public Infrastructure	pg 82			9	23
Points of Interest - Recreational and Environmental	pg 85			2	10
Gas Pipelines					
Underground Electrical Cables					



Summary

Page				501 to 1000m
Number	On Site	0 to 250m	251 to 500m	(*up to 2000m)
pg 87				2
pg 87				1
	pg 87	pg 87	pg 87	Number



Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A13NE (E)	0	1	378400 423814
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A13SE (S)	0	1	378341 423700
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A13NE	0	1	378341
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	(SW)	0	1	423814 378350
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	(SE) A13SE	16	1	423800 378400
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	(E) A13SE	78	1	423800 378350
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	(S) A13SE	101	1	423600 378500
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	(SE)	126	1	423700 378341
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	(S) A13NE	142	1	423550 378550
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	(NE)	177	1	424000 378600
	BGS Groundwater Flooding Susceptibility	(E)			423900
	Flooding Type: Potential for Groundwater Flooding to Occur at Surface BGS Groundwater Flooding Susceptibility	A13NE (NE)	178	1	378600 423950
	Flooding Type: Limited Potential for Groundwater Flooding to Occur BGS Groundwater Flooding Susceptibility	A13NE (E)	227	1	378650 423814
	Flooding Type: Limited Potential for Groundwater Flooding to Occur BGS Groundwater Flooding Susceptibility	A8NW (S)	229	1	378300 423450
	Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level BGS Groundwater Flooding Susceptibility	A13NE (NE)	237	1	378650 424000
	Flooding Type: Limited Potential for Groundwater Flooding to Occur BGS Groundwater Flooding Susceptibility	A12NE (W)	254	1	378000 423814
	Flooding Type: Limited Potential for Groundwater Flooding to Occur	A14NW (E)	277	1	378700 423814
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A8NW (S)	278	1	378300 423400
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A12SE (W)	304	1	377950 423700
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A18SW (NW)	319	1	378150 424200
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A14NW (E)	327	1	378750 423814
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A8NW (S)	378	1	378300 423300
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A8NW (S)	386	1	378250 423300



Map ID		Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Groundwater I Flooding Type:	Flooding Susceptibility Limited Potential for Groundwater Flooding to Occur	A8NW (S)	400	1	378200 423300
	BGS Groundwater I Flooding Type:	Flooding Susceptibility Limited Potential for Groundwater Flooding to Occur	A8NW (S)	417	1	378150 423300
	BGS Groundwater I Flooding Type:	Flooding Susceptibility Limited Potential for Groundwater Flooding to Occur	A18SW (NW)	423	1	378050 424250
	BGS Groundwater I Flooding Type:	Flooding Susceptibility Limited Potential for Groundwater Flooding to Occur	A8NE (S)	426	1	378341 423250
	BGS Groundwater I Flooding Type:	Flooding Susceptibility Limited Potential for Groundwater Flooding to Occur	A8NW (S)	428	1	378300 423250
	BGS Groundwater I Flooding Type:	Flooding Susceptibility Limited Potential for Groundwater Flooding to Occur	A12NE (W)	429	1	377850 423850
	Flooding Type:	Flooding Susceptibility Limited Potential for Groundwater Flooding to Occur	A7NE (SW)	437	1	377900 423450
	BGS Groundwater I Flooding Type:	Flooding Susceptibility Limited Potential for Groundwater Flooding to Occur	A14NW (E)	477	1	378900 423814
	BGS Groundwater I Flooding Type:	Flooding Susceptibility Limited Potential for Groundwater Flooding to Occur	A8NW (SW)	482	1	378100 423250
	BGS Groundwater I Flooding Type:	Flooding Susceptibility Potential for Groundwater Flooding of Property Situated Below Ground Level	A8NW (S)	495	1	378200 423200
1	Discharge Consents Operator: Property Type: Location: Authority: Catchment Area: Reference: Permit Version: Effective Date: Issued Date: Revocation Date: Discharge Type: Discharge Environment: Receiving Water: Status: Positional Accuracy:	P & P Micro Distributors Ltd LAND TRANSPORT + VIA PIPELINES/FREIGHT P & P Micro Distributors Swo Carrs Ind Estate, Haslingden, Rossendale, Lancashire Environment Agency, North West Region Not Given 016991313 1 2nd September 1988 Not Supplied 30th June 1991 Discharge Of Other Matter-Surface Water Freshwater Stream/River Swinnel Brook Authorisation revoked Located by supplier to within 100m	A13NE (NE)	82	2	378500 423900
1	Discharge Consents Operator: Property Type: Location: Authority: Catchment Area: Reference: Permit Version: Effective Date: Issued Date: Revocation Date: Discharge Type: Discharge Environment: Receiving Water: Status: Positional Accuracy:	P & P Micro Distributors Ltd LAND TRANSPORT + VIA PIPELINES/FREIGHT P & P Micro Distributors Swo Carrs Ind Estate, Haslingden, Rossendale, Lancashire Environment Agency, North West Region Not Supplied 016991313 2 1st July 1991 Not Supplied 1st September 1991 Discharge Of Other Matter-Surface Water Freshwater Stream/River Swinnel Brook Authorisation revoked Located by supplier to within 100m	A13NE (NE)	82	2	378500 423900



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Map ID		Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
2	Discharge Consents Operator: Property Type: Location: Authority: Catchment Area: Reference: Permit Version: Effective Date: Issued Date: Revocation Date: Discharge Type: Discharge Environment: Receiving Water: Status: Positional Accuracy:	P & P Micro Distributors Ltd REAL ESTATE ACTIVITIES/BUYING/SELLING/RENTING Plot 14 At Carrs Industrial Estate, Haslingden, Rossendale, Lancashire Environment Agency, North West Region Not Given 016992025 1 Not Supplied Not Supplied 1st November 1994 Discharge Of Other Matter-Surface Water Freshwater Stream/River Swinnel Brook Lapsed (under Environment Act 1995, Schedule 23) Located by supplier to within 100m	A13SW (SW)	213	2	378200 423500
3	Discharge Consents Operator: Property Type: Location: Authority: Catchment Area: Reference: Permit Version: Effective Date: Issued Date: Revocation Date: Discharge Type: Discharge Environment: Receiving Water: Status: Positional Accuracy:	North West Water Limited Not Given Beaconsfield, Bury Road Cso, HASLINGDEN Environment Agency, North West Region Upper Mersey ROS0079 Not Supplied Not Supplied 23rd June 1995 Not Supplied Sewage Effluent Discharge-Storm Effluent Freshwater Stream/River Swinnel Brook Not Supplied Located by supplier to within 100m	A13SW (SW)	255	2	378080 423520
3	Discharge Consents Operator: Property Type: Location: Authority: Catchment Area: Reference: Permit Version: Effective Date: Issued Date: Revocation Date: Discharge Type: Discharge Type: Discharge Type: This incomment: Receiving Water: Status: Positional Accuracy:	Laund Developments Ltd DOMESTIC PROPERTY (MULTIPLE) (INCL FARM HOUSES) Laund Res Development Swo Plot 14b, Carrs Ind Estate, Haslingden, Lancashire Environment Agency, North West Region Not Given 016991401 1 24th April 1989 Not Supplied 1st July 1991 Discharge Of Other Matter-Surface Water Freshwater Stream/River Swinnel Brook Authorisation revoked Located by supplier to within 100m	A13SW (SW)	258	2	378100 423500
4	Discharge Consents Operator: Property Type: Location: Authority: Catchment Area: Reference: Permit Version: Effective Date: Issued Date: Revocation Date: Discharge Type: Discharge Environment: Receiving Water: Status: Positional Accuracy:	Loks Plasma Services Ltd WWTW (NOT WATER CO) (NOT STP AT A PRIVATE PREMISES) Loks Plasma Services Ltd Swo Site 3b, Carrs Ind Estate, Haslingden, Lancashire Environment Agency, North West Region Not Given 016991336 1 1st October 1994 Not Supplied 14th December 1994 Discharge Of Other Matter-Surface Water Freshwater Stream/River Swinnel Brook Authorisation revoked Located by supplier to within 100m	A8NW (SW)	415	2	378080 423330



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Map ID		Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Discharge Consent	s				
4	Operator: Property Type: Location:	Loks Plasma Services Ltd WWTW (NOT WATER CO) (NOT STP AT A PRIVATE PREMISES) Loks Plasma Services Ltd Swo Site 3b, Carrs Ind Estate, Haslingden, Lancashire	A8NW (SW)	415	2	378080 423330
	Authority: Catchment Area: Reference: Permit Version:	Environment Agency, North West Region Not Given 017290123 1				
	Effective Date: Issued Date: Revocation Date: Discharge Type:	1st July 1991 Not Supplied 1st July 1991 Discharge Of Other Matter-Surface Water				
	Discharge Environment: Receiving Water: Status: Positional Accuracy:	Freshwater Stream/River Trib For Drainage Area 72 Authorisation revoked Located by supplier to within 10m				
	Discharge Consents	,				
5	Operator: Property Type: Location:	United Utilities Water Limited STORM TANK/CSO ON SEWERAGE NETWORK (WATER COMPANY) Deardengate/Bury Road Cso Deardengate, Haslingden, Rossendale, Lancashire, Bb4 5qj	A8NE (S)	418	2	378510 423297
	Authority: Catchment Area: Reference: Permit Version: Effective Date:	Environment Agency, North West Region Not Supplied 01ros0039 3 22nd March 2016				
	Issued Date: Revocation Date: Discharge Type: Discharge Environment:	22nd March 2016 Not Supplied Public Sewage: Storm Sewage Overflow Freshwater Stream/River				
	Receiving Water: Status:	Swinnel Brook Varied under EPR 2010 Located by supplier to within 10m				
	Discharge Consent	s				
6	Operator: Property Type: Location: Authority: Catchment Area: Reference: Permit Version:	United Utilities Water Limited STORM TANK/CSO ON SEWERAGE NETWORK (WATER COMPANY) Carr Mill Street Cso 1 Carr Mill Street, Rossendale, ., Lancashire, Bb4 5bu Environment Agency, North West Region Not Supplied 01ros0035 2	A18SE (NE)	444	2	378570 424350
	Effective Date: Issued Date: Revocation Date: Discharge Type: Discharge	6th December 2005 6th December 2005 10th December 2019 Public Sewage: Storm Sewage Overflow Freshwater Stream/River				
	Environment: Receiving Water: Status:	Swinnel Brook Modified (Water Resources Act 1991, Schedule 10 as amended by Environment Act 1995)				
	,	Located by supplier to within 10m				
6	Discharge Consents Operator:	s United Utilities Water Limited	A18SE	445	2	378575
O	Property Type: Location: Authority: Catchment Area: Reference: Permit Version:	United Utilities Water Limited STORM TANK/CSO ON SEWERAGE NETWORK (WATER COMPANY) Carr Mill Street Cso 1 Carr Mill Street, Rossendale, ., Lancashire, Bb4 5bu Environment Agency, North West Region Not Supplied 016993764 1	(NE)	440	2	378575 424349
	Effective Date: Issued Date: Revocation Date: Discharge Type: Discharge	11th December 2019 11th December 2019 Not Supplied Public Sewage: Storm Sewage Overflow Freshwater Stream/River				
	Environment: Receiving Water: Status: Positional Accuracy:	Clvrt'D Section Swinnel Brook Varied under EPR 2010 Located by supplier to within 10m				



Map ID		Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
6	Discharge Consent Operator: Property Type: Location: Authority: Catchment Area: Reference: Permit Version: Effective Date: Issued Date: Revocation Date: Discharge Type:	United Utilities Water Limited STORM TANK/CSO ON SEWERAGE NETWORK (WATER COMPANY) Haslingden Council Depot Sso, Carr Hall Street, Haslingden, Lancashire Environment Agency, North West Region Not Given 016950297 1 18th September 1978 Not Supplied Not Supplied Public Sewage: Storm Sewage Overflow	A18SE (N)	463	2	378570 424370
	Discharge Environment: Receiving Water: Status:	Freshwater Stream/River Swinnel Brook Pre National Rivers Authority Legislation where issue date < 01/09/1989 Located by supplier to within 100m				
6	Discharge Consent Operator: Property Type: Location: Authority: Catchment Area: Reference: Permit Version: Effective Date: Issued Date: Revocation Date: Discharge Type: Discharge Environment: Receiving Water: Status: Positional Accuracy:	United Utilities Water Limited STORM TANK/CSO ON SEWERAGE NETWORK (WATER COMPANY) Carr Mill Street Cso 1 Carr Mill Street, Rossendale, ., Lancashire, Bb4 5bu Environment Agency, North West Region Not Given 01ROS0035 1 1st January 1995 1st January 1995 1st January 1995 5th December 2005 Public Sewage: Storm Sewage Overflow Freshwater Stream/River Swinnel Brook Consent revoked or revised: New Consent issued (Section 37(1)) Located by supplier to within 100m	A18SE (NE)	476	2	378580 424380
7	Discharge Consent Operator: Property Type: Location: Authority: Catchment Area: Reference: Permit Version: Effective Date: Issued Date: Revocation Date: Discharge Type: Discharge Environment: Receiving Water: Status: Positional Accuracy:	United Utilities Water Limited STORM TANK/CSO ON SEWERAGE NETWORK (WATER COMPANY) Deardengate/Bury Road Cso Deardengate, Haslingden, Rossendale, Lancashire, Bb4 5qj Environment Agency, North West Region Not Supplied 01ros0039 2 14th April 2009 14th April 2009 21st March 2016 Public Sewage: Storm Sewage Overflow Freshwater Stream/River Swinnel Brook Varied under EPR 2010 Located by supplier to within 10m	A8NW (SW)	489	2	378080 423250
7	Discharge Consent Operator: Property Type: Location: Authority: Catchment Area: Reference: Permit Version: Effective Date: Issued Date: Revocation Date: Discharge Type: Discharge Environment: Receiving Water: Status: Positional Accuracy:	United Utilities Water Limited STORM TANK/CSO ON SEWERAGE NETWORK (WATER COMPANY) Beaconsfield/Bury Rd Cso, Haslingden, Lancashire Environment Agency, North West Region Not Given 016982972 1 23rd June 1995 23rd June 1995 23rd June 2005 21st June 2005 Public Sewage: Storm Sewage Overflow Freshwater Stream/River Swinnel Brook Authorisation revoked Located by supplier to within 100m	A8NW (SW)	489	2	378080 423250



Map ID		Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
7	Discharge Consents Operator: Property Type: Location: Authority: Catchment Area: Reference: Permit Version: Effective Date: Issued Date: Revocation Date: Discharge Type: Discharge Environment: Receiving Water: Status: Positional Accuracy:	United Utilities Water Limited STORM TANK/CSO ON SEWERAGE NETWORK (WATER COMPANY) Manchester Road Sewer, Haslingden, Rossendale, Lancashire Environment Agency, North West Region Not Given 01ROS0058 2 1st January 1995 Not Supplied Not Supplied Not Supplied Public Sewage: Storm Sewage Overflow Freshwater Stream/River Not Supplied Post National Rivers Authority Legislation where issue date > 31/08/1989 Located by supplier to within 10m	A8NW (SW)	489	2	378080 423250
7	Discharge Consents Operator: Property Type: Location: Authority: Catchment Area: Reference: Permit Version: Effective Date: Issued Date: Revocation Date: Discharge Type: Discharge Environment: Receiving Water: Status: Positional Accuracy:	United Utilities Water Limited STORM TANK/CSO ON SEWERAGE NETWORK (WATER COMPANY) Deardengate/Bury Road Cso Deardengate, Haslingden, Rossendale, Lancashire, Bb4 5qj Environment Agency, North West Region Not Given 01ROS0039 1 1st January 1995 Not Supplied 13th April 2009 Public Sewage: Storm Sewage Overflow Freshwater Stream/River Swinnel Brook Post National Rivers Authority Legislation where issue date > 31/08/1989 Located by supplier to within 10m	A8NW (SW)	489	2	378080 423250
7	Discharge Consents Operator: Property Type: Location: Authority: Catchment Area: Reference: Permit Version: Effective Date: Issued Date: Revocation Date: Discharge Type: Discharge Type: Discharge Type: Status: Positional Accuracy:	United Utilities Water Limited STORM TANK/CSO ON SEWERAGE NETWORK (WATER COMPANY) Manchester Road Sewer, Haslingden, Rossendale, Lancashire Environment Agency, North West Region Not Supplied 01ros0058 1 1st April 1991 Not Supplied 31st December 1994 Public Sewage: Storm Sewage Overflow Not Supplied Not Supplied Authorisation revoked Located by supplier to within 10m	A8NW (SW)	489	2	378080 423250
8	Discharge Consents Operator: Property Type: Location: Authority: Catchment Area: Reference: Permit Version: Effective Date: Issued Date: Revocation Date: Discharge Type: Discharge Environment: Receiving Water: Status: Positional Accuracy:	Hurstwood Development Ltd DOMESTIC PROPERTY (SINGLE) (INCL FARM HOUSE) Hurstwood House Swo 175 Crane Road, Haslingden, Rossendale, Lancashire Environment Agency, North West Region Not Given 016991335 1 11th November 1988 Not Supplied 30th September 1994 Discharge Of Other Matter-Surface Water Freshwater Stream/River Swinnel Brook Authorisation revoked Located by supplier to within 100m	A3NW (S)	900	2	378180 422790



Map ID		Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
8	Discharge Consents Operator: Property Type: Location: Authority: Catchment Area: Reference: Permit Version: Effective Date: Issued Date: Revocation Date: Discharge Type: Discharge Environment: Receiving Water: Status: Positional Accuracy:	Hurstwood Development Ltd DOMESTIC PROPERTY (SINGLE) (INCL FARM HOUSE) Hurstwood House Swo 175 Crane Road, Haslingden, Rossendale, Lancashire Environment Agency, North West Region Not Supplied 016991335 2 1st October 1994 Not Supplied 14th December 1994 Discharge Of Other Matter-Surface Water Freshwater Stream/River Swinnel Brook Authorisation revoked Located by supplier to within 10m	A3NW (S)	900	2	378180 422790
9	Location: Prosecution Text: Prosecution Act: Hearing Date: Verdict: Fine: Cost:	ing to Controlled Waters Swinnel Brook, Taylor Court, Todd Hall Road, Haslingden Releasing waste water into a watercourse Epr10 S12 & 38 21st October 2010 Guilty 10000 3407 Manually positioned to the road within the address or location	A8NW (SW)	261	2	378141 423471
10	Integrated Pollution Name: Location: Authority: Permit Reference: Dated: Process Type: Description: Status: Positional Accuracy:	Warton Metals Ltd Carrs Industrial Estate, Commerce Street, Haslingden, ROSSENDALE, Lancashire, BB4 5JT Environment Agency, North West Region BD2519 24th November 1998 IPC minor (non-substantial) variation to previous variation 2.2 A (A) Non-ferrous Metal processes within the Metal Industry Authorisation revoked Automatically positioned to the address	A13NE (NE)	80	2	378495 423884
10	Integrated Pollution Name: Location: Authority: Permit Reference: Dated: Process Type: Description: Status:		A13NE (NE)	80	2	378495 423884
11	Local Authority Pol Name: Location: Authority: Permit Reference: Dated: Process Type: Description: Status:	Wartons Metal Ltd Grove Mill, Commerce Street, HASLINGDEN, Lancashire, BB4 5 Rossendale Borough Council, Environmental Health Department As7566 15th November 1995 Local Authority Air Pollution Control PG4/1 Processes for the surface treatment of metals Authorisation revoked Manually positioned to the address or location	A13SE (S)	71	3	378367 423613
12	Name: Location: Authority: Permit Reference: Dated: Process Type: Description: Status:	Iution Prevention and Controls Haslingden Service Station Blackburn Road, HASLINGDEN, Lancashire, BB4 5QG Rossendale Borough Council, Environmental Health Department 14/00011/PETROL 19th January 1999 Local Authority Pollution Prevention and Control PG1/14 Petrol filling station Permitted Automatically positioned to the address	A8NE (S)	423	3	378532 423303



Map ID		Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Local Authority Pol	lution Prevention and Controls				
13	Name: Location: Authority: Permit Reference: Dated: Process Type: Description: Status: Positional Accuracy:	Flexipol Packaging Ltd Unit 14 Carrs Industrial Estate, Bentwood Road, Haslingden, Rossendale, Lancashire, Bb4 5hh Rossendale Borough Council, Environmental Health Department 14/00023/PRINT 14th November 2008 Local Authority Pollution Prevention and Control PG6/17 Printing of flexible packaging Permitted Manually positioned to the address or location	A8NW (S)	520	3	378126 423199
	Local Authority Pol	lution Prevention and Controls				
14	Name: Location: Authority: Permit Reference: Dated: Process Type: Description: Status: Positional Accuracy:	Atc Ltd Hud Hey Mill, Hud Hey Road, Haslingden, ROSSENDALE, Lancashire, BB4 5LB Rossendale Borough Council, Environmental Health Department Epa 13/93 15th March 1996 Local Authority Air Pollution Control PG6/23 Coating of metal and plastic Application Not Yet Authorised Manually positioned to the road within the address or location	A18SE (N)	527	3	378530 424448
	Local Authority Pol	lution Prevention and Controls				
15	Name: Location: Authority: Permit Reference: Dated: Process Type: Description: Status: Positional Accuracy:	Advanced Technical Coating Hud Hey Mill, Hud Hey Road, HASLINGDEN, Lancashire, BB4 5LB Rossendale Borough Council, Environmental Health Department Epa/13/96 15th March 1996 Local Authority Air Pollution Control Part B - General Metal Process (No Specific Reference) Authorisation revoked Manually positioned within the geographical locality	A18SE (N)	569	3	378611 424468
	Local Authority Pol	lution Prevention and Controls				
16	Name: Location: Authority: Permit Reference: Dated: Process Type: Description: Status:	Deardengate Dry Cleaners 54 Deardengate, Haslingden Rossendale Borough Council, Environmental Health Department 34/07 31st October 2007 Local Authority Pollution Prevention and Control PG6/46 Dry cleaning Permitted Manually positioned to the address or location	A8NE (S)	590	3	378588 423144
	Local Authority Pol	lution Prevention and Controls				
17	Name: Location: Authority: Permit Reference: Dated: Process Type: Description: Status: Positional Accuracy:	Timberform Ltd Clough End Road, Haslingdon, ROSSENDALE, Lancashire, BB4 5AN Rossendale Borough Council, Environmental Health Department 14/96 25th June 1996 Local Authority Air Pollution Control PG6/2 Manufacture of timber and wood-based products Authorised Manually positioned to the address or location	A19SW (NE)	693	3	378912 424422
	Local Authority Pol	lution Prevention and Controls				
17	Name: Location: Authority: Permit Reference: Dated: Process Type: Description: Status: Positional Accuracy:	Timberform Ltd Clough End Road, ROSSENDALE, Lancashire, BB4 5AN Rossendale Borough Council, Environmental Health Department Epa 14/93 25th June 1996 Local Authority Air Pollution Control PG6/3 Chemical treatment of timber and wood-based products Authorised Manually positioned to the address or location	A19SW (NE)	696	3	378912 424427
	Nearest Surface Wa	ater Feature				
			A13NE (NE)	1	-	378414 423934



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Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
18	Property Type: Not Given Location: Stream Carrs Industrialest , Hasling Authority: Environment Agency, North West Region Pollutant: Oils - Diesel (Including Agricultural) Note: Oil Coming Down; Near Underbank Incident Date: 25th June 1998 Incident Reference: Catchment Area: Receiving Water: Cause of Incident: Unknown Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A13NW (NW)	157	2	378200 424000
19	Pollution Incidents to Controlled Waters Property Type: Chemical industry Location: Cam Industrial Estate , HASLINGDEN Authority: Environment Agency, North West Region Pollutant: Miscellaneous - Foam Note: Foam On Brook Incident Date: 29th September 1998 Incident Reference: Catchment Area: Irvell Receiving Water: Cause of Incident: Preshwater Stream/River Cause of Incident: Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A13SE (S)	188	2	378400 423500
20	Pollution Incidents to Controlled Waters Property Type: Not Given Location: Lancashire Authority: Environment Agency, North West Region Voltant: Unknown Note: Swinnel Brook; No Pollution Found Incident Date: 15th June 1995 Incident Reference: 25621433 Irwell Receiving Water: Not Given Cause of Incident: Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A13SW (SW)	258	2	378100 423500
21	Pollution Incidents to Controlled Waters Property Type: Industrial: Other Location: Carrs Industrial Estate, Swinell Brook, HASLINGDEN Authority: Environment Agency, North West Region Note: Swinell Brook; Silt And Sediment Incident Date: 9th May 1997 Incident Reference: Catchment Area: Receiving Water: Cause of Incident: Incident Severity: Cause of Incident: Positional Accuracy: Incident Severity: Cated by supplier to within 100m	A12SE (SW)	275	2	378000 423600
22	Pollution Incidents to Controlled Waters Property Type: Not Given Location: Lancashire Authority: Environment Agency, North West Region Pollutant: Oils - Diesel (Including Agricultural) Note: Swinnel Brook; Diesel Oil Incident Date: 18th January 1996 Incident Reference: 96620121 Catchment Area: Irwell Receiving Water: Cause of Incident: Incident Cause of Incident: Incident Severity: Positional Accuracy: Located by supplier to within 100m	A8NW (S)	306	2	378200 423400
23	Pollution Incidents to Controlled Waters Property Type: Not Given Location: Location Description Not Available Authority: Environment Agency, North West Region Pollutant: Miscellaneous - Unknown Note: Swinnel Brook Incident Date: 20th July 1995 Incident Reference: 95621825 Catchment Area: Receiving Water: Cause of Incident: Other Incident/Unknown Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A18SE (N)	377	2	378500 424300



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Map ID		Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
24	Property Type: Location: Authority: Pollutant: Note: Incident Date: Incident Reference: Catchment Area: Receiving Water: Cause of Incident: Incident Severity:	to Controlled Waters Not Given Lancashire Environment Agency, North West Region Unknown No Pollution Found 25th March 1996 96620600 Irwell Not Given Other Incident/Unknown Category 3 - Minor Incident	A8NW (S)	378	2	378300 423300
25	Pollution Incidents Property Type: Location: Authority: Pollutant: Note: Incident Date: Incident Reference: Catchment Area: Receiving Water: Cause of Incident: Incident Severity:	Located by supplier to within 100m to Controlled Waters Not Given Location Description Not Available Environment Agency, North West Region Oils - Diesel (Including Agricultural) Tributary Swinnel Brook 10th April 1995 95620776 Irwell Not Given Poor Operational Practice Category 2 - Significant Incident Located by supplier to within 100m	A12SE (SW)	410	2	377900 423500
26	Property Type: Location: Authority: Pollutant: Note: Incident Date: Incident Reference: Catchment Area: Receiving Water: Cause of Incident: Incident Severity:	to Controlled Waters Not Given Lancashire Environment Agency, North West Region Unknown None Affected; Petrol To Drains Road Traffic Accident 6th November 1996 96622301 Irwell Not Given Road Traffic Accident Category 3 - Minor Incident Located by supplier to within 100m	A8NE (S)	504	2	378500 423200
27	Property Type: Location: Authority: Pollutant: Note: Incident Date: Incident Reference: Catchment Area: Receiving Water: Cause of Incident: Incident Severity:	to Controlled Waters Not Given Location Description Not Available Environment Agency, North West Region Miscellaneous - Inert Suspended Solids Swinnel Brook 24th August 1995 95622190 Irwell Not Given Poor Operational Practice Category 3 - Minor Incident Located by supplier to within 100m	A18NE (N)	552	2	378400 424500
28	Property Type: Location: Authority: Pollutant: Note: Incident Date: Incident Reference: Catchment Area: Receiving Water: Cause of Incident: Incident Severity:	to Controlled Waters Boats/Ships Lancashire Environment Agency, North West Region Unknown None Found 15th August 1994 94621851 Irwell Canal Other Incident/Unknown Category 3 - Minor Incident Located by supplier to within 100m	A7NE (SW)	567	2	378000 423200
29	Property Type: Location: Authority: Pollutant: Note: Incident Date: Incident Reference: Catchment Area: Receiving Water: Cause of Incident: Incident Severity:	to Controlled Waters Not Given Lancashire Environment Agency, North West Region Chemicals - Other Organic Woodnook Water; Trade Effluent 19th February 1996 96330047 Calder - Lancs Not Given Blocked Sewer Category 3 - Minor Incident Located by supplier to within 100m	A18NW (N)	570	2	378200 424500

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Map ID		Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
30	Location: Authority: Pollutant: Note: Incident Date: Incident Reference: Catchment Area: Receiving Water: Cause of Incident: Incident Severity:	o Controlled Waters Not Given Stream Grey In Colour, Near Complainants House Environment Agency, North West Region Miscellaneous - Unknown Langwood Brook; Unknown 26th September 1997 97621715 Irwell Freshwater Stream/River Unknown Category 3 - Minor Incident Located by supplier to within 100m	A14SW (SE)	590	2	378900 423500
31	Location: Authority: Pollutant: Note: Incident Date: Incident Reference: Catchment Area: Receiving Water: Cause of Incident: Incident Severity:	Spillage; Accident - Static Site Lancashire Environment Agency, North West Region Chemicals - Paints / Dyes Ogden; Ink 4th July 1996 96621504 Irwell Not Given Accidental Spillage/Leakage Category 3 - Minor Incident Located by supplier to within 100m	A8SW (S)	592	2	378200 423100
32	Location: Authority: Pollutant: Note: Incident Date: Incident Reference: Catchment Area: Receiving Water: Cause of Incident: Incident Severity:	o Controlled Waters Not Given Lancashire Environment Agency, North West Region Unknown No Pollution Found 10th April 1996 96620715 Irwell Not Given Other Incident/Unknown Category 3 - Minor Incident Located by supplier to within 100m	A8SE (S)	635	2	378600 423100
33	Location: Authority: Pollutant: Note: Incident Date: Incident Reference: Catchment Area: Receiving Water: Cause of Incident: Incident Severity:	o Controlled Waters Not Given Lancashire Environment Agency, North West Region Unknown None Affected; None Pollution Found 8th October 1996 96622190 Irwell Not Given Other Incident/Unknown Category 3 - Minor Incident Located by supplier to within 100m	A17NE (NW)	651	2	378000 424500
34	Location: Authority: Pollutant: Note: Incident Date: Incident Reference: Catchment Area: Receiving Water: Cause of Incident: Incident Severity:	Spillage; Accident - Static Site Location Description Not Available Environment Agency, North West Region Chemicals - Pesticides Duckworth Clough; Wood Treatment Fluid 8th November 1995 95622745 Irwell Not Given Inadequate Construction Category 3 - Minor Incident Located by supplier to within 100m	A19NW (NE)	742	2	378900 424500
35	Location: Authority: Pollutant: Note: Incident Date: Incident Reference: Catchment Area: Receiving Water: Cause of Incident: Incident Severity:	o Controlled Waters Not Given Location Description Not Available Environment Agency, North West Region Miscellaneous - Other Swinnel Brook; Lodge Water 14th June 1995 95621423 Irwell Not Given Miscellaneous/Other Pollution Type Category 3 - Minor Incident Located by supplier to within 100m	A3NW (S)	886	2	378200 422800



Map ID		Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
36	Pollution Incidents Property Type: Location: Authority: Pollutant: Note: Incident Date: Incident Reference: Catchment Area: Receiving Water: Cause of Incident:	to Controlled Waters Not Given Lancashire Environment Agency, North West Region Unknown None Affected; None Pollution Found 20th April 1996 96620849 Irwell Not Given Other Incident/Unknown	A3NW (S)	907	2	378100 422800
	-	Category 3 - Minor Incident Located by supplier to within 100m				
37	Property Type: Location: Authority: Pollutant: Note: Incident Date: Incident Reference: Catchment Area: Receiving Water: Cause of Incident: Incident Severity:	to Controlled Waters Not Given Kirkhill Avenue, HASLINGDEN Environment Agency, North West Region Miscellaneous - Other Grey Stuff In Stream 1st September 1998 SO981599 Irwell Freshwater Stream/River Poor Operational Practice Category 3 - Minor Incident Located by supplier to within 100m	A9NE (SE)	988	2	379200 423200
38	Location: Prosecution Text: Prosecution Act: Hearing Date: Verdict: Fine: Costs:	ing to Authorised Processes Land At Hutch Bank Road, Haslingden Operating a waste site without a WML Epa90 S33(1)(A) 28th April 2006 Guilty 6000 2662 Manually positioned to the road within the address or location	A3NW (S)	999	2	378055 422717
	River Quality Name: GQA Grade: Reach: Estimated Distance (km): Flow Rate: Flow Type: Year:	Swinnel Bk River Quality B Qsl At Hud Hey Road To Ogden	A13SE (E)	71	2	378467 423767
39	Authority: Incident Date: Incident Reference: Water Impact: Air Impact: Land Impact:	Environment Agency - North West Region, North Area 24th April 2001 3336 Category 2 - Significant Incident Category 4 - No Impact Category 4 - No Impact Located by supplier to within 10m General Biodegradable : Other	A13SW (SW)	245	2	378072 423542
40	Substantiated Pollu Authority: Incident Date: Incident Reference: Water Impact: Air Impact: Land Impact:	Intion Incident Register Environment Agency - North West Region, North Area 20th April 2010 772191 Category 1 - Major Incident Category 4 - No Impact Category 4 - No Impact Category 4 - No Impact Cottegory 4 - No Impact Cottegory 5 - No Impact Cottegory 6 - No Impact Cottegory 6 - No Impact Cottegory 7 - No Impact Cottegory 8 - No Impact Cottegory 8 - No Impact Cottegory 9 - No Impact Cottegory 9 - No Impact Cottegory 1 - Moreover 10 - No Impact Cottegory 1 - No Impact Cottegory 2 - No Impact Cottegory 3 - No Impact Cottegory 4 - No Impact Cottegory 4 - No Impact Cottegory 5 - No Impact Cottegory 6 - No Impact Cottegory 7 - No Impact Cottegory 8 - No Impact Cottegory 9 - No Impact Cottegory 1 - No Impact Cottegory	A8NW (SW)	303	2	378087 423454
41	Authority: Incident Date: Incident Reference: Water Impact: Air Impact: Land Impact:	Environment Agency - North West Region, North Area 12th February 2015 1313430 Category 2 - Significant Incident Category 4 - No Impact Category 4 - No Impact Located by supplier to within 10m Pollutant Not Identified: Not Identified	A13SW (SW)	306	2	378040 423488



Map ID		Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
42	Authority: Incident Date: Incident Reference: Water Impact: Air Impact: Land Impact:	tion Incident Register Environment Agency - North West Region, North Area 17th April 2001 2598 Category 2 - Significant Incident Category 4 - No Impact Category 4 - No Impact Located by supplier to within 10m Organic Chemicals/Products: Surfactants And Detergents	A8NE (SE)	572	2	378630 423187
43	Authority: Incident Date: Incident Reference: Water Impact: Air Impact: Land Impact: Positional Accuracy: Pollutant:	tion Incident Register Environment Agency - North West Region, North Area 24th February 2009 656415 Category 2 - Significant Incident Category 4 - No Impact Category 3 - Minor Incident Located by supplier to within 10m Oils And Fuel: Other Oil Or Fuel	A8NW (S)	581	2	378085 423149
44	Water Abstractions Operator: Licence Number: Permit Version: Location: Authority: Abstraction Type: Source: Daily Rate (m3): Yearly Rate (m3): Details: Authorised Start: Authorised Start: Authorised End: Permit Start Date: Permit End Date: Positional Accuracy:	Scapa Porritt Ltd 2569001182 Not Supplied Reservoir Fed By Surface Drainage, & Swinnel Brook, HASLINGDEN Environment Agency, North West Region Manufacturing Not Supplied River 450 114000 Licence Status: Lapsed Not Supplied Located by supplier to within 100m	A18SE (N)	280	2	378500 424200
45	Water Abstractions Operator: Licence Number: Permit Version: Location: Authority: Abstraction Type: Source: Daily Rate (m3): Yearly Rate (m3): Details: Authorised Start: Authorised Start: Authorised End: Permit Start Date: Permit End Date: Positional Accuracy:	Options Technologies Europe Ltd 2569001286 1 Swinnel Brook In Haslingden Lancashire Environment Agency, North West Region Other Industrial/Commercial/Public Services: Effluent/Slurry Dilution Water may be abstracted from a single point Surface Not Supplied Not Supplied Lh Premises Underbank Way Haslingden 01 January 31 December 27th September 2006 Not Supplied Located by supplier to within 10m	A8NW (SW)	398	2	378100 423340
46	Water Abstractions Operator: Licence Number: Permit Version: Location: Authority: Abstraction Type: Source: Daily Rate (m3): Yearly Rate (m3): Details: Authorised Start: Authorised Start: Authorised End: Permit Start Date: Permit End Date: Positional Accuracy:	Bernard L.Watson 2569001003 Not Supplied Pond Fed By Two Springs At Clough End, HASLINGDEN Environment Agency, North West Region Drinking; Cooking; Sanitary; Washing For Industrial Premises Not Supplied River 2 568 Licence Status: Revoked Not Supplied Located by supplier to within 100m	A19SW (NE)	603	2	378900 424300



Map ID		Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
47	Water Abstractions Operator: Licence Number: Permit Version: Location: Authority: Abstraction Type: Source: Daily Rate (m3): Yearly Rate (m3): Details: Authorised Start: Authorised Start: Authorised End: Permit Start Date: Permit End Date: Positional Accuracy:	J & F Gibbons 2569001018 100 Well At Roundhill And Collecting Chamber,At Higher Environment Agency, North West Region General Agriculture; General Use (Medium Loss) Water may be abstracted from a single point Groundwater 0 0 Higher Hud Hey And Higher Barn Farms 01 January 31 December 25th January 1974 Not Supplied Located by supplier to within 100m	A18NW (N)	790	2	378100 424700
	Water Abstractions Operator: Licence Number: Permit Version: Location: Authority: Abstraction Type: Source: Daily Rate (m3): Yearly Rate (m3): Details: Authorised Start: Authorised Start: Authorised End: Permit Start Date: Permit End Date: Positional Accuracy:	Whitbread West Pennines Ltd 2569001023 Not Supplied Well At The Farmers Glory Pub, HASLINGDEN Environment Agency, North West Region Private Water Supply (Domestic & Holiday Recreation/Hotels Etc) Not Supplied Spring 2 818 Licence Status: Revoked Not Supplied Located by supplier to within 100m	A17NE (NW)	1011	2	377800 424800
	Water Abstractions Operator: Licence Number: Permit Version: Location: Authority: Abstraction Type: Source: Daily Rate (m3): Yearly Rate (m3): Details: Authorised Start: Authorised Start: Authorised End: Permit Start Date: Permit End Date: Positional Accuracy:	Park Royal Haulage Ltd 2569001250 Not Supplied Swinnel Brook At, HASLINGDEN Environment Agency, North West Region Dust Suppression & Washing Down Floors And Machines Not Supplied Surface 16 2250 Additional Purpose: Washing Down Floors And Machines Not Supplied Located by supplier to within 100m	A2NE (S)	1032	2	378000 422700
	Water Abstractions Operator: Licence Number: Permit Version: Location: Authority: Abstraction Type: Source: Daily Rate (m3): Yearly Rate (m3): Details: Authorised Start: Authorised Start: Authorised End: Permit Start Date: Permit End Date: Positional Accuracy:	G Briggs 2569001082 101 Reservoir Fed By Langwood Brk At Grane Mill, Haslingden Environment Agency, North West Region Other Industrial/Commercial/Public Services: Boiler Feed Water may be abstracted from a single point Surface 927 227300 Grane Mill, Haslingden 01 January 31 December 10th July 2000 Not Supplied Located by supplier to within 100m	A9SE (SE)	1091	2	379100 422900



Map ID		Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Water Abstractions Operator: Licence Number: Permit Version: Location: Authority: Abstraction Type: Source: Daily Rate (m3): Yearly Rate (m3): Details: Authorised Start:	G Briggs 2569001082 101 Reservoir Fed By Langwood Brk At Grane Mill, Haslingden Environment Agency, North West Region Other Industrial/Commercial/Public Services: General Cooling (Existing Licences Only) (Low Loss) Water may be abstracted from a single point Surface Not Supplied Not Supplied Grane Mill, Haslingden 01 January	A9SE (SE)	1091	2	379100 422900
	Authorised End: Permit Start Date: Permit End Date:	31 December 10th July 2000 Not Supplied Located by supplier to within 10m				
	Water Abstractions Operator: Licence Number: Permit Version: Location: Authority: Abstraction Type: Source: Daily Rate (m3): Yearly Rate (m3): Details: Authorised Start: Authorised Start: Authorised End: Permit Start Date: Permit End Date: Positional Accuracy:	Mr J R Handley 2569001157 100 Well At Laund Slack Farm, Haslingden Environment Agency, North West Region General Agriculture; General Use (Medium Loss) Water may be abstracted from a single point Groundwater 6 2323 Laund Slack Farm, Haslingden 01 January 31 December 17th May 1967 Not Supplied Located by supplier to within 100m	A10NW (E)	1093	2	379400 423400
	Water Abstractions Operator: Licence Number: Permit Version: Location: Authority: Abstraction Type: Source: Daily Rate (m3): Yearly Rate (m3): Details: Authorised Start: Authorised Start: Authorised End: Permit Start Date: Permit End Date: Positional Accuracy:	J & F Gibbons 2569001018 100 Well At Roundhill And Collecting Chamber, At Higher Barn Farm Environment Agency, North West Region General Agriculture; General Use (Medium Loss) Water may be abstracted from a single point Groundwater 6 2159 Higher Hud Hey And Higher Barn Farms 01 January 31 December 25th January 1974 Not Supplied	A22SE (NW)	1097	2	377800 424900
	Water Abstractions Operator: Licence Number: Permit Version: Location: Authority: Abstraction Type: Source: Daily Rate (m3): Yearly Rate (m3): Details: Authorised Start: Authorised Start: Authorised End: Permit Start Date: Permit End Date: Positional Accuracy:	T L Ormerod Bros. Ltd. 2569001061 Not Supplied Well Fed By Langwood Brook, Laneside Sizing Works, HASLINGDEN Environment Agency, North West Region Boiler Feed Not Supplied River 20 82 Licence Status: Lapsed Not Supplied Located by supplier to within 100m	A4NW (SE)	1182	2	379000 422700



Map ID		Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Water Abstractions Operator: Licence Number: Permit Version: Location: Authority: Abstraction: Abstraction Type: Source: Daily Rate (m3): Yearly Rate (m3): Details: Authorised Start: Authorised End: Permit Start Date: Permit End Date: Positional Accuracy:	J H Birtwistle & Co Ltd 2569001093 100 Reservoir At Premises Grane Road Mill Haslingden Environment Agency, North West Region Other Industrial/Commercial/Public Services: General Cooling (Existing Licences Only) (Low Loss) Water may be abstracted from a single point Surface 132 34095 Premises, Grane Road Mill, Haslingden 01 January 31 December 26th January 1966 Not Supplied Located by supplier to within 100m	A2NE (S)	1223	2	378000 422500
	Water Abstractions Operator: Licence Number: Permit Version: Location: Authority: Abstraction: Abstraction Type: Source: Daily Rate (m3): Yearly Rate (m3): Details: Authorised Start: Authorised End: Permit Start Date: Permit End Date: Positional Accuracy:	T L Ormerod Bros. Ltd. 2569001060 Not Supplied Spring Fed Reservoir, Laneside Sizing Works, HASLINGDEN Environment Agency, North West Region Boiler Feed & Manufacturing Not Supplied Spring 23 673 Additional Purpose: Boiler feed; Licence Status: Lapsed Not Supplied Located by supplier to within 100m	A4NE (SE)	1241	2	379100 422700
	Water Abstractions Operator: Licence Number: Permit Version: Location: Authority: Abstraction Type: Source: Daily Rate (m3): Yearly Rate (m3): Details: Authorised Start: Authorised End: Permit Start Date: Permit End Date: Positional Accuracy:	Jack Wolfenden 2671333008 100 Well In Field Nr Larkhill Farm, Haslingden,Rossendale Environment Agency, North West Region General Agriculture; General Use (Medium Loss) Water may be abstracted from a single point Groundwater 0 159 Larkhill Farm,Haslingden,Lancs 01 January 31 December 18th February 1966 Not Supplied Located by supplier to within 100m	A22NE (N)	1365	2	377800 425200
	Water Abstractions Operator: Licence Number: Permit Version: Location: Authority: Abstraction: Abstraction Type: Source: Daily Rate (m3): Yearly Rate (m3): Details: Authorised Start: Authorised End: Permit Start Date: Permit End Date: Positional Accuracy:	Mr G Trickett 2569001079 100 Spring Fed Tank At Cribden Flat Farm, Haslingden Environment Agency, North West Region General Agriculture; General Use (Medium Loss) Water may be abstracted from a single point Groundwater 4 1500 Cribden Flat Farm, Haslingden 01 January 31 December 12th January 1966 Not Supplied Located by supplier to within 100m	A15SE (E)	1383	2	379800 423800



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Map ID		Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Water Abstractions Operator: Licence Number: Permit Version: Location: Authority: Abstraction Type: Source: Daily Rate (m3): Yearly Rate (m3): Details: Authorised Start: Authorised Start: Authorised End: Permit Start Date: Permit End Date: Positional Accuracy:	Walter Holland & Sons 2671333034 100 Stream Known As Woodnook Water Fedg. Lodge At Food Factory Environment Agency, North West Region Food And Drink: General Cooling (Existing Licences Only) (Low Loss) Water may be abstracted from a single point Surface 546 170202 Food Factory,Baxenden,Accrington. 01 January 31 December 26th November 2018 Not Supplied Located by supplier to within 100m	A22NE (N)	1612	2	377905 425500
	Water Abstractions Operator: Licence Number: Permit Version: Location: Authority: Abstraction Type: Source: Daily Rate (m3): Yearly Rate (m3): Details: Authorised Start: Authorised Start: Authorised End: Permit Start Date: Permit End Date: Positional Accuracy:	Walter Holland & Sons 2671333033 100 Borehole At The Food Factory, Baxenden, Accrington Environment Agency, North West Region Food And Drink: General Cooling (Existing Licences Only) (Low Loss) Water may be abstracted from a single point Groundwater 1064 144017 Food Factory,Baxenden,Accrington. 01 January 31 December 21st February 1992 Not Supplied Located by supplier to within 10m	A22NE (N)	1613	2	377900 425500
	Water Abstractions Operator: Licence Number: Permit Version: Location: Authority: Abstraction Type: Source: Daily Rate (m3): Yearly Rate (m3): Details: Authorised Start: Authorised Start: Authorised End: Permit Start Date: Permit End Date: Positional Accuracy:	Walter Holland & Sons 2671333033 Not Supplied The Food Factory, Baxenden, ACCRINGTON Environment Agency, North West Region Industrial Cooling & Manufacturing Not Supplied Groundwater 1064 144017 Additional Purpose - Cooling Not Supplied Located by supplier to within 100m	A22NE (N)	1613	2	377900 425500
	Water Abstractions Operator: Licence Number: Permit Version: Location: Authority: Abstraction Type: Source: Daily Rate (m3): Yearly Rate (m3): Details: Authorised Start: Authorised End: Permit Start Date: Permit End Date: Positional Accuracy:	William Hargreaves Ltd 2569001154 Not Supplied Swinnel Brook At, HASLINGDEN Environment Agency, North West Region Manufacturing Not Supplied Surface 0 727360 Licence Status: Revoked Not Supplied Located by supplier to within 100m	(S)	1635	2	377900 422100



Map ID		Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Water Abstractions Operator: Licence Number: Permit Version: Location: Authority: Abstraction: Abstraction Type: Source: Daily Rate (m3): Yearly Rate (m3): Details: Authorised Start: Authorised End: Permit Start Date: Permit End Date: Positional Accuracy:	J S Slater Ltd 2569001051 Not Supplied Two Reservoirs, Syke Mill, Haslingden, ROSSENDALE, Lancashire Environment Agency, North West Region Cooling & Boiler Feed & Manufacturing Not Supplied River 0 0 Additional Purposes: Manufacturing; Boiler feed; Licence Status: Lapsed Not Supplied Located by supplier to within 100m	A4SE (SE)	1663	2	379100 422200
	Water Abstractions Operator: Licence Number: Permit Version: Location: Authority: Abstraction: Abstraction Type: Source: Daily Rate (m3): Yearly Rate (m3): Details: Authorised Start: Authorised End: Permit Start Date: Permit End Date: Positional Accuracy:	J Willan 2569001135 100 Well At Causeway Head Farm, Haslingden, Rossendale, Environment Agency, North West Region General Agriculture; General Use (Medium Loss) Water may be abstracted from a single point Groundwater 7 2409 Causeway Head Farm, Haslingden 01 January 31 December 15th February 1966 Not Supplied Located by supplier to within 100m	(S)	1677	2	378300 422000
	Water Abstractions Operator: Licence Number: Permit Version: Location: Authority: Abstraction Type: Source: Daily Rate (m3): Yearly Rate (m3): Details: Authorised Start: Authorised End: Permit Start Date: Permit End Date: Positional Accuracy:	R & J Cockerill 2569001084 100 Spring Fed Tank At Cribden End Farm,Rawtenstall Environment Agency, North West Region General Agriculture; General Use (Medium Loss) Water may be abstracted from a single point Groundwater 3 1318 Cribden End Farm, Rawtenstall 01 January 31 December 26th January 1966 Not Supplied Located by supplier to within 100m	(E)	1682	2	380100 423800
	Water Abstractions Operator: Licence Number: Permit Version: Location: Authority: Abstraction Type: Source: Daily Rate (m3): Yearly Rate (m3): Details: Authorised Start: Authorised End: Permit Start Date: Permit End Date: Positional Accuracy:	United Utilities Water Ltd 2569001165 101 Holdenwood Reservoir (Impounding Ogden Brk) Environment Agency, North West Region Public Water Supply: Potable Water Supply - Direct Water may be abstracted from a single point Surface Not Supplied Not Supplied Not Supplied 01 January 31 December 27th January 2005 Not Supplied Located by supplier to within 100m	A2SW (SW)	1732	2	377400 422200



Map ID		Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Water Abstractions Operator: Licence Number: Permit Version:	United Utilities Water Plc 2569001165 100	A2SW (SW)	1732	2	377400 422200
	Location: Authority: Abstraction: Abstraction Type: Source: Daily Rate (m3):	Holdenwood Reservoir (Impounding Ogden Brk) Environment Agency, North West Region Public Water Supply: Potable Water Supply - Direct Water may be abstracted from a single point Surface 0				
	Yearly Rate (m3): Details:	0 Ogden/ Calfhey/ Holdenwood Reservoir (Imp/ Ogden Brook) & River Intake From Musbury Brook				
	Authorised Start: Authorised End: Permit Start Date: Permit End Date: Positional Accuracy:	01 January 31 December 22nd March 1991 Not Supplied Located by supplier to within 100m				
	Water Abstractions					
	Operator: Licence Number: Permit Version: Location: Authority: Abstraction Type: Source:	J S Slater Ltd 2569001051 Not Supplied Two Reservoirs, Syke Mill, Haslingden, ROSSENDALE, Lancashire Environment Agency, North West Region Cooling & Boiler Feed & Manufacturing Not Supplied River	(SE)	1753	2	379100 422100
	Daily Rate (m3): Yearly Rate (m3): Details: Authorised Start:	387 90920 Additional Purposes: Manufacturing; Boiler feed; Licence Status: Lapsed Not Supplied				
	Authorised End: Permit Start Date: Permit End Date: Positional Accuracy:	Not Supplied Not Supplied Not Supplied Located by supplier to within 100m				
	Water Abstractions					
	Operator: Licence Number: Permit Version: Location: Authority: Abstraction: Abstraction Type: Source: Daily Rate (m3): Yearly Rate (m3): Details: Authorised Start: Authorised End: Permit Start Date: Permit End Date: Positional Accuracy: Water Abstractions	Lanxess Urethanes Uk Ltd 2671333053 101 Borehole At Paragon Works Baxenden Accrington Environment Agency, North West Region Other Industrial/Commercial/Public Services: General Use (Medium Loss) Water may be abstracted from a single point Groundwater Not Supplied Not Supplied Paragon Works, Baxenden 01 October 30 September 12th June 2017 Not Supplied Located by supplier to within 100m	(NW)	1812	2	377600 425600
	Operator: Licence Number: Permit Version: Location: Authority: Abstraction Type: Source: Daily Rate (m3): Yearly Rate (m3): Details: Authorised Start: Authorised End: Permit Start Date: Permit End Date:	Lanxess Urethanes Uk Ltd 2671333053 101 Borehole At Paragon Works Baxenden Accrington Environment Agency, North West Region Chemicals: Process Water Water may be abstracted from a single point Groundwater Not Supplied Not Supplied Paragon Works, Baxenden 01 October 30 September 12th June 2017 Not Supplied	(NW)	1812	2	377600 425600



Map ID		Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Water Abstractions Operator: Licence Number: Permit Version: Location: Authority: Abstraction Type: Source: Daily Rate (m3): Yearly Rate (m3): Details: Authorised Start: Authorised End: Permit Start Date:	Lanxess Urethanes Uk Ltd 2671333053 101 Borehole At Paragon Works Baxenden Accrington Environment Agency, North West Region Other Industrial/Commercial/Public Services: General Cooling (Existing Licences Only) (Low Loss) Water may be abstracted from a single point Groundwater Not Supplied Not Supplied Paragon Works, Baxenden 01 October 30 September 12th June 2017	(NW)	1812	2	377600 425600
	Permit End Date: Positional Accuracy: Water Abstractions Operator: Licence Number: Permit Version: Location: Authority: Abstraction Type: Source: Daily Rate (m3): Yearly Rate (m3): Details: Authorised Start: Authorised End: Permit Start Date:	Not Supplied Located by supplier to within 100m Baxenden Chemical Co Ltd 2671333053 100 Borehole At Paragon Works Baxenden Accrington Environment Agency, North West Region Chemicals: Process Water Water may be abstracted from a single point Groundwater 159 34095 Paragon Works, Baxenden 01 October 30 September 13th December 1993	(NW)	1812	2	377600 425600
	Water Abstractions Operator: Licence Number: Permit Version: Location: Authority: Abstraction Type: Source: Daily Rate (m3): Yearly Rate (m3): Details: Authorised Start: Authorised End: Permit Start Date: Permit End Date: Positional Accuracy:	Not Supplied Located by supplier to within 100m Baxenden Chemical Co Ltd 2671333053 100 Borehole At Paragon Works Baxenden Accrington Environment Agency, North West Region Other Industrial/Commercial/Public Services: General Cooling (Existing Licences Only) (Low Loss) Water may be abstracted from a single point Groundwater Not Supplied Not Supplied Paragon Works, Baxenden 01 October 30 September 13th December 1993 Not Supplied Located by supplier to within 10m	(NW)	1812	2	377600 425600
	Water Abstractions Operator: Licence Number: Permit Version: Location: Authority: Abstraction Type: Source: Daily Rate (m3): Yearly Rate (m3): Details: Authorised Start: Authorised Start: Authorised End: Permit Start Date: Permit End Date: Positional Accuracy:	Baxenden Chemical Co Ltd 2671333053 100 Borehole At Paragon Works Baxenden Accrington Environment Agency, North West Region Other Industrial/Commercial/Public Services: General Use (Medium Loss) Water may be abstracted from a single point Groundwater Not Supplied Not Supplied Paragon Works, Baxenden 01 October 30 September 13th December 1993 Not Supplied Located by supplier to within 10m	(NW)	1812	2	377600 425600



Map ID		Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Water Abstractions					
	Operator: Licence Number: Permit Version: Location: Authority: Abstraction Type: Source: Daily Rate (m3): Yearly Rate (m3): Details: Authorised Start: Authorised End: Permit Start Date: Permit End Date: Positional Accuracy:	James Gaskell Butchers Ltd 2671333067 100 Borehole At Spittens Farm, Haslingdenroad, Accrington. Environment Agency, North West Region General Agriculture; General Use (Medium Loss) Water may be abstracted from a single point Groundwater 5 1659 Land & Premises At Spittens Farm. 01 January 31 December 18th June 1987 Not Supplied Located by supplier to within 100m	A21NE (NW)	1839	2	377100 425300
	Water Abstractions					
	Operator: Licence Number: Permit Version: Location: Authority: Abstraction:	Jane Ackroyd 2671333070 100 Borehole At Newhouses, Roundhill Road, Accrington Environment Agency, North West Region Household Water Supply: Drinking; Cooking; Sanitary; Washing; (Small Garden)	A21NW (NW)	1913	2	376900 425200
	Abstraction Type: Source: Daily Rate (m3): Yearly Rate (m3): Details: Authorised Start: Authorised End: Permit Start Date: Permit End Date: Positional Accuracy:	Water may be abstracted from a single point Groundwater 3 996 1/2/3/4 Newhouses & Glenmoor 01 January 31 December 8th January 1998 Not Supplied Located by supplier to within 100m				
	Water Abstractions					
	Operator: Licence Number: Permit Version: Location: Authority: Abstraction Type: Source: Daily Rate (m3): Yearly Rate (m3): Details: Authorised Start: Authorised End: Permit Start Date: Permit End Date: Positional Accuracy:	Interfloor Ltd 2569001184 101 Borehole At Broadway, Haslingden Environment Agency, North West Region Other Industrial/Commercial/Public Services: General Cooling (Existing Licences Only) (High Loss) Water may be abstracted from a single point Groundwater Not Supplied Not Supplied Premises At Broadway, Haslingden 01 January 31 December 2nd June 2003 Not Supplied Located by supplier to within 100m	(SE)	1976	2	379200 421900
	Water Abstractions		(6-)		_	
	Operator: Licence Number: Permit Version: Location: Authority: Abstraction Type: Source: Daily Rate (m3): Yearly Rate (m3): Details: Authorised Start: Authorised End: Permit Start Date: Permit End Date: Positional Accuracy:	Interfloor Ltd 2569001184 101 Borehole At Broadway, Haslingden Environment Agency, North West Region Other Industrial/Commercial/Public Services: General Cooling (Existing Licences Only) (Low Loss) Water may be abstracted from a single point Groundwater Not Supplied Not Supplied Premises At Broadway, Haslingden 01 January 31 December 2nd June 2003 Not Supplied Located by supplier to within 100m	(SE)	1976	2	379200 421900



Map ID		Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Water Abstractions Operator: Licence Number: Permit Version: Location: Authority: Abstraction Type: Source: Daily Rate (m3): Yearly Rate (m3): Details: Authorised Start: Authorised End: Permit Start Date: Permit End Date: Positional Accuracy:	Interfloor Ltd 2569001184 101 Borehole At Broadway, Haslingden Environment Agency, North West Region Other Industrial/Commercial/Public Services: Process Water Water may be abstracted from a single point Groundwater Not Supplied Not Supplied Not Supplied Premises At Broadway, Haslingden 01 January 31 December 2nd June 2003 Not Supplied Located by supplier to within 100m	(SE)	1976	2	379200 421900
	-	Duralay Ltd 2569001184 100 Borehole At Broadway, Haslingden Environment Agency, North West Region Other Industrial/Commercial/Public Services: General Cooling (Existing Licences Only) (High Loss) Water may be abstracted from a single point Groundwater 550 136000 Premises At Broadway, Haslingden 01 January 31 December 2nd November 1992 Not Supplied Located by supplier to within 100m	(SE)	1976	2	379200 421900
	Water Abstractions Operator: Licence Number: Permit Version: Location: Authority: Abstraction Type: Source: Daily Rate (m3): Yearly Rate (m3): Details: Authorised Start: Authorised End: Permit Start Date: Permit End Date: Positional Accuracy:	Duralay Ltd 2569001184 100 Borehole At Broadway, Haslingden Environment Agency, North West Region Other Industrial/Commercial/Public Services: General Cooling (Existing Licences Only) (Low Loss) Water may be abstracted from a single point Groundwater Not Supplied Not Supplied Premises At Broadway, Haslingden 01 January 31 December 2nd November 1992 Not Supplied Located by supplier to within 10m	(SE)	1976	2	379200 421900
	Water Abstractions Operator: Licence Number: Permit Version: Location: Authority: Abstraction Type: Source: Daily Rate (m3): Yearly Rate (m3): Details: Authorised Start: Authorised Start: Authorised End: Permit Start Date: Permit End Date: Positional Accuracy:	Duralay Ltd 2569001184 100 Borehole At Broadway, Haslingden Environment Agency, North West Region Other Industrial/Commercial/Public Services: Process Water Water may be abstracted from a single point Groundwater Not Supplied Not Supplied Premises At Broadway, Haslingden 01 January 31 December 2nd November 1992 Not Supplied Located by supplier to within 10m	(SE)	1976	2	379200 421900



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Map ID		Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Groundwater Vulne	arahility Man				
	Combined		A13NE	0	4	378339
	Classification:	Secondary Superficial Aquifer - Medium Vulnerability	(N)	0	4	423859
	Combined	Medium	(14)			423039
	Vulnerability:	Modium				
	Combined Aquifer:	Productive Bedrock Aguifer, Productive Superficial Aguifer				
	Pollutant Speed:	Low				
	Bedrock Flow:	Well Connected Fractures				
	Dilution:	>550 mm/year				
	Baseflow Index: Superficial	>70% <90%				
	Patchiness:	23070				
	Superficial	3-10m				
	Thickness:					
	Superficial	High				
	Recharge:					
	Groundwater Vulne	erability Map				
	Combined	Secondary Superficial Aquifer - Medium Vulnerability	A13NE	0	4	378412
	Classification:	Cooking Caponicial Addition Modition Validerability	(NE)			423900
	Combined	Medium	()			
	Vulnerability:					
	Combined Aquifer:	Productive Bedrock Aquifer, Productive Superficial Aquifer				
	Pollutant Speed:	Low				
	Bedrock Flow: Dilution:	Well Connected Fractures >550 mm/year				
	Baseflow Index:	>70%				
	Superficial	<90%				
	Patchiness:					
	Superficial	3-10m				
	Thickness:					
	Superficial	High				
	Recharge:					
	Groundwater Vulne	erability Map				
	Combined	Secondary Bedrock Aquifer - Medium Vulnerability	A13NE	0	4	378341
	Classification:		(SW)			423814
	Combined	Medium				
	Vulnerability:	Draduativa Dadraak Asuifar Na Cuparficial Asuifar				
	Combined Aquifer: Pollutant Speed:	Productive Bedrock Aquifer, No Superficial Aquifer Low				
	Bedrock Flow:	Well Connected Fractures				
	Dilution:	>550 mm/year				
	Baseflow Index:	>70%				
	Superficial	<90%				
	Patchiness: Superficial	3-10m				
	Thickness:	3-10111				
	Superficial	High				
	Recharge:					
	Groundwater Vulne	erability - Soluble Rock Risk				
	None	duble Nock Nick				
	Bedrock Aquifer De	esignations				
	Aquifer Designation:	Secondary Aquifer - A	A13NE	0	4	378341
			(SW)			423814
	Superficial Aquifer					
	Aquifer Designation:	Secondary Aquifer - Undifferentiated	A13NE	0	4	378339
			(N)			423859
	Superficial Aquifer	_				
	Aquifer Designation:	Secondary Aquifer - A	A13NE	0	4	378412
			(NE)			423900
	Extreme Flooding f	rom Rivers or Sea without Defences				
	Type:	Extent of Extreme Flooding from Rivers or Sea without Defences	A13SE	0	2	378380
	Flood Plain Type:	Fluvial Models	(SE)			423797
	Boundary Accuracy:	As Supplied				
	Extreme Flooding f	rom Rivers or Sea without Defences				
	Type:	Extent of Extreme Flooding from Rivers or Sea without Defences	A13SE	116	2	378468
	Flood Plain Type:	Fluvial Models	(SE)			423697
_	Boundary Accuracy:	As Supplied		<u></u>		
	Flooding from Rive	rs or Sea without Defences				
	Type:	Extent of Flooding from Rivers or Sea without Defences	A13NE	0	2	378403
	Flood Plain Type:	Fluvial Models	(NE)		_	423887
		As Supplied	\ .=,			



Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Flooding from Rivers or Sea without Defences Type: Extent of Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A13SE (S)	34	2	378364 423660
	Flooding from Rivers or Sea without Defences Type: Extent of Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A13SE (SE)	116	2	378469 423698
	Flooding from Rivers or Sea without Defences Type: Extent of Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A13SW (S)	138	2	378239 423565
	Flooding from Rivers or Sea without Defences Type: Extent of Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A13SW (S)	224	2	378208 423485
	Areas Benefiting from Flood Defences None Flood Water Storage Areas				
	Flood Water Storage Areas None Flood Defences				
48	None OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 68.6 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A13NE (NE)	0	5	378449 423877
49	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 125.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A13NE (NE)	2	5	378415 423935
50	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 58.5 Watercourse Level: Underground Permanent: True Watercourse Name: Swinnel Brook Catchment Name: Mersey Primacy: 1	A13NE (NE)	34	5	378449 423875
51	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 251.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Swinnel Brook Catchment Name: Mersey Primacy: 1	A13NE (NE)	36	5	378460 423932
52	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 14.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Swinnel Brook Catchment Name: Mersey Primacy: 1	A13NE (NE)	37	5	378452 423861
53	OS Water Network Lines Watercourse Forn: Inland river Watercourse Length: 165.0 Watercourse Level: Underground Permanent: True Watercourse Name: Swinnel Brook Catchment Name: Mersey Primacy: 1	A13NE (E)	43	5	378453 423850



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Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
54	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 81.1 Watercourse Level: Underground Permanent: True Watercourse Name: Swinnel Brook Catchment Name: Mersey Primacy: 1	A13SW (S)	98	5	378326 423579
55	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 159.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Swinnel Brook Catchment Name: Mersey Primacy: 1	A13SE (SE)	101	5	378459 423649
56	OS Water Network Lines Watercourse Form: Inland river Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A13NE (N)	110	5	378374 424057
57	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 281.0 Watercourse Level: Not Supplied True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 2	A13SE (E)	124	5	378529 423789
58	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 7.8 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A13NE (N)	125	5	378430 424058
59	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 53.6 Watercourse Level: Underground Permanent: True Watercourse Name: Swinnel Brook Catchment Name: Mersey Primacy: 1	A13SE (SE)	126	5	378467 423655
60	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 396.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A13NE (N)	127	5	378438 424058
61	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 25.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 2	A13NE (NE)	145	5	378556 423990
62	OS Water Network Lines Watercourse Form: Inland river Watercourse Level: On ground surface Permanent: True Watercourse Name: Swinnel Brook Catchment Name: Mersey Primacy: 1	A13SE (SE)	148	5	378498 423685



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Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
63	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 219.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Swinnel Brook Catchment Name: Mersey Primacy: 1	A13SW (S)	151	5	378269 423539
64	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 13.1 Watercourse Level: Not Supplied Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 2	A13NE (NE)	164	5	378565 424014
65	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 27.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 2	A13NE (NE)	175	5	378570 424027
66	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 36.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A13NW (N)	185	5	378310 424131
67	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 17.7 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 2	A13NE (NE)	192	5	378571 424054
68	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 155.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 2	A13NE (NE)	199	5	378565 424070
69	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 26.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A13NW (N)	211	5	378281 424150
70	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 47.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A18SW (N)	232	5	378260 424165
71	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 55.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A12SE (W)	256	5	377998 423691



Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
72	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 8.3 Watercourse Level: Underground Permanent: True Watercourse Name: Swinnel Brook Catchment Name: Mersey Primacy: 1	A18SE (N)	259	5	378486 424182
	OS Water Network Lines				
73	Watercourse Form: Inland river Watercourse Length: 14.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Swinnel Brook Catchment Name: Mersey Primacy: 1	A18SE (N)	266	5	378492 424188
74	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 151.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Primacy: 1 Mersey 1	A18SW (N)	267	5	378222 424185
75	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 45.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Swinnel Brook Catchment Name: Primacy: 1	A18SE (NE)	278	5	378502 424197
76	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 25.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A12SE (SW)	283	5	377978 423645
77	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 139.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A12SE (SW)	283	5	377977 423652
78	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 114.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A12SE (SW)	288	5	377980 423605
79	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 23.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A12SE (SW)	298	5	377967 423625
80	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 36.8 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A13SW (SW)	301	5	378008 423533



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Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
81	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 128.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A13SW (SW)	302	5	378045 423488
82	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 15.1 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A13SW (SW)	302	5	378045 423488
83	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 7.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A13SW (SW)	304	5	378028 423502
84	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 7.4 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A12SE (SW)	317	5	377945 423633
85	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 268.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Swinnel Brook Catchment Name: Mersey Primacy: 1	A18SE (NE)	323	5	378522 424238
86	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 11.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A12SE (SW)	324	5	377938 423635
87	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 7.3 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A12SE (W)	341	5	377919 423770
88	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 2.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A12SE (W)	346	5	377915 423777
89	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 19.5 Watercourse Level: Underground Permanent: True Watercourse Name: Swinnel Brook Catchment Name: Mersey Primacy: 1	A8NW (SW)	347	5	378120 423387



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Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
90	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 140.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A12SE (W)	347	5	377914 423779
	OS Water Network Lines				
91	Watercourse Form: Inland river Watercourse Length: 388.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A12NE (W)	347	5	377926 423862
92	OS Water Network Lines Watercourse Form: Inland river Watercourse Level: On ground surface Permanent: True Watercourse Name: Swinnel Brook Catchment Name: Mersey Primacy: 1	A8NW (SW)	365	5	378116 423369
93	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 64.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A18SW (NW)	370	5	378065 424189
94	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 62.5 Watercourse Level: Not Supplied Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A18SW (NW)	379	5	378055 424191
95	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 346.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A18SW (NW)	386	5	378088 424236
96	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 230.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A7NE (SW)	422	5	377902 423473
97	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 169.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A17SE (NW)	438	5	377996 424210
98	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 185.4 Watercourse Level: Not Supplied Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A7NE (SW)	441	5	377942 423395



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Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
99	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 7.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Swinnel Brook Catchment Name: Mersey Primacy: 1	A8NW (SW)	462	5	378069 423283
100	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 31.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Swinnel Brook Catchment Name: Mersey Primacy: 1	A8NW (SW)	469	5	378066 423277
101	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 90.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A12NE (W)	481	5	377792 423843
102	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 116.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A12NE (W)	481	5	377792 423843
103	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 2.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A8NW (SW)	492	5	378078 423247
104	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 142.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Swinnel Brook Catchment Name: Mersey Primacy: 1	A8NW (SW)	493	5	378075 423247
105	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 184.5 Watercourse Level: Not Supplied Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A18SE (NE)	554	5	378667 424428
106	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 105.9 Watercourse Level: Not Supplied Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A17SE (NW)	567	5	377836 424193
107	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 8.2 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A12NE (W)	569	5	377735 423941



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Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
108	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 198.3 Watercourse Level: Not Supplied Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A12NE (W)	570	5	377707 423868
109	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 41.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A12NE (W)	576	5	377730 423948
110	OS Water Network Lines Watercourse Form: Inland river Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A7NE (SW)	588	5	377954 423200
111	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 186.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A19SW (NE)	589	5	378782 424399
112	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 105.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Swinnel Brook Catchment Name: Mersey Primacy: 1	A18SE (NE)	589	5	378635 424480
113	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 52.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A12NE (NW)	611	5	377750 424087
114	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 93.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A12NE (NW)	611	5	377750 424087
115	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 8.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 2	A7NE (SW)	618	5	377984 423151
116	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 1.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Swinnel Brook Catchment Name: Mersey Primacy: 1	A8SW (S)	621	5	378085 423107



Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
117	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 20.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Swinnel Brook Catchment Name: Mersey Primacy: 1	A8SW (S)	622	5	378085 423106
	OS Water Network Lines				
118	Watercourse Form: Inland river Watercourse Length: 127.0 Watercourse Level: Not Supplied Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A7NE (SW)	625	5	377983 423144
119	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 23.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Swinnel Brook Catchment Name: Mersey Primacy: 1	A8SW (S)	639	5	378089 423086
120	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 4.1 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A12NE (W)	648	5	377702 424069
121	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 164.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A12NE (W)	652	5	377698 424069
122	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 95.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Swinnel Brook Catchment Name: Mersey Primacy: 1	A8SW (S)	656	5	378098 423064
123	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 32.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A8SW (S)	656	5	378098 423064
124	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 49.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A17SE (NW)	658	5	377780 424283
125	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 124.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A17SE (NW)	672	5	377712 424164



Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
126	OS Water Network Lines Watercourse Form: Lake Watercourse Length: 32.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A17SE (NW)	674	5	377876 424431
	OS Water Network Lines				
127	Watercourse Form: Inland river Watercourse Length: 59.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A19SW (NE)	676	5	378955 424349
128	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 8.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Swinnel Brook Catchment Name: Mersey Primacy: 1	A19NW (NE)	676	5	378722 424538
129	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 10.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A19SW (NE)	683	5	378948 424368
130	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 91.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Swinnel Brook Catchment Name: Mersey Primacy: 1	A19NW (NE)	684	5	378728 424544
131	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 467.9 Watercourse Level: Underground Permanent: True Watercourse Name: Long Dike Catchment Name: Mersey Primacy: 1	A19NW (NE)	684	5	378728 424544
132	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 41.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A19SE (NE)	694	5	379020 424285
133	OS Water Network Lines Watercourse Form: Lake Watercourse Length: 13.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A19SW (NE)	698	5	378991 424337
134	OS Water Network Lines Watercourse Forn: Inland river Watercourse Length: 39.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A17SE (NW)	700	5	377846 424438



Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
135	OS Water Network Lines Watercourse Form: Lake Watercourse Length: 17.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A19SW (NE)	702	5	379007 424322
136	OS Water Network Lines Watercourse Form: Lake Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Primacy: 1	A19SW (NE)	710	5	379004 424339
137	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 260.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Swinnel Brook Catchment Name: Mersey Primacy: 1	A8SW (S)	729	5	378133 422975
138	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 2.5 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A19SE (NE)	730	5	379027 424341
139	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 143.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A19SE (NE)	732	5	379030 424341
140	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 5.0 Watercourse Level: Underground Permanent: True Watercourse Name: Swinnel Brook Catchment Name: Mersey Primacy: 1	A19NW (NE)	764	5	378782 424605
141	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 43.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A12NW (W)	767	5	377511 423897
142	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 124.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Swinnel Brook Catchment Name: Mersey Primacy: 1	A19NW (NE)	768	5	378785 424609
143	OS Water Network Lines Watercourse Form: Lake Watercourse Length: 86.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A19SE (NE)	778	5	379048 424394



Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
144	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 3.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A19SW (NE)	786	5	378999 424466
	OS Water Network Lines				
145	Watercourse Form: Inland river Watercourse Length: 6.7 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A12NW (W)	795	5	377534 424047
	OS Water Network Lines				
146	Watercourse Form: Inland river Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A17SW (NW)	796	5	377594 424204
	OS Water Network Lines				
147	Watercourse Form: Inland river Watercourse Length: 3.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A17SW (NW)	800	5	377590 424205
	OS Water Network Lines				
148	Watercourse Form: Inland river Watercourse Length: 142.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A12NW (W)	801	5	377528 424047
	OS Water Network Lines				
149	Watercourse Form: Lake Watercourse Length: 6.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A17SW (NW)	804	5	377586 424205
	OS Water Network Lines				
150	Watercourse Form: Inland river Watercourse Length: 2.4 Watercourse Level: Underground True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A12NW (W)	810	5	377469 423908
	OS Water Network Lines				
151	Watercourse Form: Inland river Watercourse Length: 113.2 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A17SW (NW)	810	5	377580 424206
	OS Water Network Lines				
152	Watercourse Form: Inland river Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A12NW (W)	812	5	377467 423908



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Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
153	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 166.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A19SE (E)	822	5	379213 424162
154	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 22.2 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey	A19SE (E)	825	5	379216 424160
155	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 18.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A19SE (NE)	834	5	379167 424308
156	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 145.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A19SE (E)	842	5	379236 424151
157	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 32.1 Watercourse Level: Underground Permanent: True Watercourse Name: Swinnel Brook Catchment Name: Mersey Primacy: 1	A19NW (NE)	844	5	378732 424717
158	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 88.0 Watercourse Level: Not Supplied Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A19SE (NE)	852	5	379181 424319
159	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 32.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Swinnel Brook Catchment Name: Mersey Primacy: 1	A19NW (NE)	873	5	378732 424748
160	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 67.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A19SE (NE)	906	5	379194 424407
161	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 129.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A17SW (NW)	922	5	377469 424228



Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
162	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 93.5 Watercourse Level: Underground Permanent: True Watercourse Name: Swinnel Brook Catchment Name: Mersey Primacy: 1	A3NW (S)	926	5	378163 422766
163	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 13.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A23SE (N)	937	5	378663 424836
164	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 104.0 Watercourse Level: Not Supplied Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A19SE (NE)	955	5	379259 424392
165	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 137.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A12NW (W)	977	5	377359 424102





Map ID		Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
166	BGS Recorded Lan Site Name: Location: Authority: Ground Water: Surface Water: Geology: Positional Accuracy: Boundary Accuracy:	South Shore Tip Charles Lane, HASLINGDEN, Lancs British Geological Survey, National Geoscience Information Service Information not available Information not available N/A Positioned by the supplier	A8NW (S)	387	-	378261 423296
167	Historical Landfill S Licence Holder: Location: Name: Operator Location: Boundary Accuracy: Provider Reference: First Input Date: Last Input Date: Specified Waste Type: EA Waste Ref: Regis Ref: WRC Ref: BGS Ref: Other Ref:	Tarmac Construction Limited Off Commerce Street, Carrs, Haslingden, Lancashire Sunny Field Farm Not Supplied As Supplied	A13SW (W)	179	2	378080 423751
168	Historical Landfill S Licence Holder: Location: Name: Operator Location: Boundary Accuracy: Provider Reference: First Input Date: Last Input Date: Specified Waste Type: EA Waste Ref: Regis Ref: WRC Ref: BGS Ref: Other Ref:	Tarmac National Construction Limited Martin Croft Road, Hud Hey, Haslingden, Lancashire Martin Croft Farm Not Supplied As Supplied	A18SE (N)	239	2	378435 424175
169	Historical Landfill S Licence Holder: Location: Name: Operator Location: Boundary Accuracy: Provider Reference: First Input Date: Specified Waste Type: EA Waste Ref: Regis Ref: WRC Ref: BGS Ref: Other Ref:	Tarmac Construction Limited Charles Lane, Well Bank, Haslingden, Lancashire South Shore Not Supplied As Supplied EAHLD15628 1st January 1951 22nd September 1972 Deposited Waste included Industrial and Commercial Waste 0 Not Supplied 2300/0666 2927 R024, K1/14/024, Licence No 122	A8NW (S)	346	2	378270 423336
170	Historical Landfill S Licence Holder: Location: Name: Operator Location: Boundary Accuracy: Provider Reference: First Input Date: Last Input Date: Last Input Date: Specified Waste Type: EA Waste Ref: Regis Ref: WRC Ref: BGS Ref: Other Ref:	Not Supplied Carrs, Haslingden, Lancashire Bentwood Road Not Supplied As Supplied	A8NW (S)	502	2	378110 423224





Map ID		Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Historical Landfill S	ites				
171	Licence Holder: Location: Name: Operator Location: Boundary Accuracy: Provider Reference: First Input Date: Last Input Date: Specified Waste Type: EA Waste Ref: Regis Ref: WRC Ref: BGS Ref: Other Ref:		A19SW (NE)	725	2	379009 424358
	Historical Landfill S	ites				
172	Licence Holder: Location: Name: Operator Location: Boundary Accuracy: Provider Reference: First Input Date: Last Input Date: Last Input Date: Specified Waste Type: EA Waste Ref: Regis Ref: WRC Ref: BGS Ref: Other Ref:		A19NW (NE)	728	2	378729 424592
	Historical Landfill S	ites				
173	Licence Holder: Location: Name: Operator Location: Boundary Accuracy: Provider Reference: First Input Date: Last Input Date: Specified Waste Type: EA Waste Ref: Regis Ref: WRC Ref: BGS Ref: Other Ref:	EAHLD15623 Not Supplied Not Supplied Not Supplied 0 Not Supplied 2300/0683 Not Supplied R048, K1/14/048, Licence No 310	A19NW (NE)	746	2	378709 424620
	Historical Landfill S	ites				
174	Licence Holder: Location: Name: Operator Location: Boundary Accuracy: Provider Reference: First Input Date: Last Input Date: Specified Waste Type: EA Waste Ref: Regis Ref: WRC Ref: BGS Ref: Other Ref:	EAHLD15621 Not Supplied Not Supplied Deposited Waste included Inert and Industrial Waste 0 Not Supplied 2300/0692 Not Supplied R057, K1/14/57, Licence No 118	A18NE (N)	833	2	378425 424779
	Licensed Waste Ma	nagement Facilities (Landfill Boundaries)				
175	Name: Licence Number: Location: Licence Holder: Authority: Site Category: Max Input Rate: Licence Status: Issued: Positional Accuracy:	Top O'Slate Quarry Landfill 53994 Land/ Premises At, Higher Lane, Haslingden, Rossendale, Lancashire, BB4 5UD Rossendale Borough Council Environment Agency - North West Region, South Area Landfills Taking Non-biodegradeable Wastes (Not Construction) Not Supplied Modified 29th July 1977 Positioned by the supplier	A14NW (E)	483	2	378907 423922





Map ID		Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Licensed Waste Ma	nagement Facilities (Landfill Boundaries)				
176	Name:	Hutch Bank Quarry	A7SE	679	2	377904
	Licence Number:	401508	(SW)			423125
	Location:	Hutch Bank Quarry, Hutch Bank Road, Haslingden, Rossendale, Lancashire, BB4 5EJ				
	Licence Holder:	Churchill Enviro Ltd				
	Authority:	Environment Agency - North West Region, North Area				
	Site Category:	Inert LF				
	Max Input Rate: Licence Status:	Not Supplied Issued				
	Issued:	19th February 2019				
	Positional Accuracy: Boundary Accuracy:	Positioned by the supplier				
	,	•••				
		nagement Facilities (Landfill Boundaries)				
177	Name: Licence Number:	Duckworth Clough Landfill Site 53745	A19SE (NE)	911	2	379200 424407
	Location:	Clough End Road, Haslingden, Rossendale, Lancashire, BB4 5AN	(INL)			424407
	Licence Holder:	Lancashire County Council				
	Authority: Site Category:	Environment Agency - North West Region, North Area Household, Commercial And Industrial Waste Landfills				
	Max Input Rate:	Not Supplied				
	Licence Status:	Closure				
	Issued: Positional Accuracy:	1st May 1994 Positioned by the supplier				
	Boundary Accuracy:					
	Licensed Waste Ma	nagement Facilities (Locations)				
178	Licence Number:	50440	A8NW	324	2	378102
	Location:	Units 4 & 17b Taylor Court, Todd Hall Road, Haslingden, Lancashire, BB4	(SW)			423421
	Operator Name:	5LA Recontainers Ltd				
	Operator Location:	Not Supplied				
	Authority:	Environment Agency - North West Region, North Area				
	Site Category: Licence Status:	Household, Commercial And Industrial Transfer Stations Modified				
	Issued:	28th June 2006				
	Last Modified:	28th October 2010				
	Expires: Suspended:	Not Supplied Not Supplied				
	Revoked:	Not Supplied				
	Surrendered: IPPC Reference:	Not Supplied Not Supplied				
		Located by supplier to within 100m				
	Licensed Waste Ma	nagement Facilities (Locations)				
179	Licence Number:	53994	A14NW	594	2	379008
	Location:	Land/ Premises At, Higher Lane, Haslingden, Rossendale, Lancashire, BB4	(E)		_	423824
	O	5UD				
	Operator Name: Operator Location:	Rossendale Borough Council Not Supplied				
	Authority:	Environment Agency - North West Region, North Area				
	Site Category: Licence Status:	Landfills Taking Non-biodegradeable Wastes (Not Construction) Closed				
	Issued:	29th July 1977				
	Last Modified:	5th July 2007				
	Expires: Suspended:	Not Supplied Not Supplied				
	Revoked:	Not Supplied				
	Surrendered:	Not Supplied				
	IPPC Reference: Positional Accuracy:	Not Supplied Located by supplier to within 10m				
	,	nagement Facilities (Locations)				
180	Licence Number:	401508	A7SE	813	2	377731
	Location:	Hutch Bank Quarry, Hutch Bank Road, Haslingden, Rossendale, Lancashire,	(SW)		_	423084
	Operator Name:	BB4 5EJ				
	Operator Name: Operator Location:	Churchill Enviro Ltd Not Supplied				
	Authority:	Environment Agency - North West Region, North Area				
	Site Category: Licence Status:	Inert LF Issued				
	Issued:	19th February 2019				
	Last Modified:	Not Supplied				
	Expires: Suspended:	Not Supplied Not Supplied				
	Revoked:	Not Supplied				
	Surrendered:	Not Supplied				
	IPPC Reference: Positional Accuracy:	Not Supplied Located by supplier to within 10m				
	. Johnstial / loodidoy.					





Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
181	Licensed Waste Management Facilities (Locations) Licence Number: 50045 Location: Underbrow Farm, Cribden Side, Haslingden, Rossendale, Lancashire, BB 5UB Operator Name: Harding Andrew H Operator Location: Not Supplied Authority: Environment Agency - North West Region, North Area Site Category: Household, Commercial And Industrial Transfer Stations Issued: 20th April 2001 Last Modified: Not Supplied Expires: Not Supplied Suspended: Not Supplied Suspended: Not Supplied Surrendered: Not Supplied IPPC Reference: Not Supplied Positional Accuracy: Located by supplier to within 100m	A19SE 4 (NE)	951	2	379300 424300
	Local Authority Landfill Coverage Name: Rossendale Borough Council - Has supplied landfill data		0	3	378341 423814
	Local Authority Landfill Coverage Name: Lancashire County Council - Had landfill data but passed it to the relevant environment agency		0	6	378341 423814
182	Potentially Infilled Land (Non-Water) Bearing Ref: E Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1990	A13NE (E)	109	-	378512 423837
183	Potentially Infilled Land (Non-Water) Bearing Ref: S Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1990	A8NE (S)	257	-	378469 423458
184	Potentially Infilled Land (Non-Water) Bearing Ref: E Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1990	A14NW (E)	477	-	378900 423926
185	Potentially Infilled Land (Non-Water) Bearing Ref: NE Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1990	A19SW (NE)	536	-	378848 424259
186	Potentially Infilled Land (Non-Water) Bearing Ref: W Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1990	A12SW (W)	858	-	377399 423782
187	Potentially Infilled Land (Non-Water) Bearing Ref: W Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1990	A12NW (W)	873	-	377389 423829
188	Potentially Infilled Land (Non-Water) Bearing Ref: N Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1990	A18NW (N)	884	-	378033 424777
189	Potentially Infilled Land (Non-Water) Bearing Ref: W Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1990	A12NW (W)	899	-	377382 423927
190	Potentially Infilled Land (Non-Water) Bearing Ref: Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1990	A19NW (NE)	913	-	378880 424722
191	Potentially Infilled Land (Non-Water) Bearing Ref: NE Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1990	A19SE (NE)	978	-	379326 424308
192	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1849	A13SE (S)	49	-	378386 423656
193	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1955	A13SE (S)	95	-	378340 423581





Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
194	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc. Date of Mapping: 1849) A13NE (N)	102	-	378381 424047
195	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc.) Date of Mapping: 1849		127	-	378549 423950
196	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc. Date of Mapping: 1955) A13SW (SW)	222	-	378149 423511
197	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc.) Date of Mapping: 1955) A13NE (E)	231	-	378642 423851
198	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc.) Date of Mapping: 1955) A12SE (W)	266	-	377997 423774
199	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc.) Date of Mapping: 1955) A8NW (SW)	285	-	378158 423438
200	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc Date of Mapping: 1931) A13SE (E)	291	-	378660 423710
201	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc Date of Mapping: 1955) A13SW (SW)	297	-	378012 423535
202	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc.) Date of Mapping: 1955) A18SE (NE)	299	-	378548 424203
203	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc.) Date of Mapping: 1955) A8NW (SW)	360	-	378108 423378
204	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc.) Date of Mapping: 1849) A12SE (SW)	373	-	377949 423492
205	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc.) Date of Mapping: 1849) A8NE (S)	447	-	378515 423267
206	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc.) Date of Mapping: 1955) A8NW (SW)	471	-	378028 423293
207	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc.) Date of Mapping: 1955) A8NW (S)	491	-	378123 423231
208	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc.) Date of Mapping: 1849) A18SE (NE)	502	-	378610 424397
209	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc.) Date of Mapping: 1931) A8NW (SW)	533	-	378036 423221
210	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc.) Date of Mapping: 1849) A8NW (SW)	579	-	378053 423164
211	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc.) Date of Mapping: 1955) A8SW (S)	699	-	378063 423031
212	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc.) Date of Mapping: 1911) A9NW (SE)	739	-	378969 423297
213	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc.) Date of Mapping: 1955) A18NE (N)	764	-	378509 424697
214	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc. Date of Mapping: 1955) A12NW (W)	773	-	377505 423897





Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
215	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock e Date of Mapping: 1955	tc) A8SW (S)	779	-	378169 422915
216	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock e Date of Mapping: 1912	A18NE (N)	794	-	378492 424731
217	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock e Date of Mapping: 1912	A18NE (N)	828	-	378492 424765
218	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock e Date of Mapping: 1955	tc) A3NW (S)	889	-	378191 422799
219	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock e Date of Mapping: 1931	A9SE (SE)	976	-	379100 423071
220	Registered Landfill Sites Licence Holder: Licence Reference: Site Location: Sunnyside Farm, Haslingden, Rossendale, Lancashire Licence Easting: Licence Northing: Operator Location: Authority: Site Category: Max Input Rate: Waste Source Restrictions: Status: Licence lapsed/cancelled/defunct/not applicable/surrendered Dated: Dated	A13SW (W)	147	2	378098 423778
221	Registered Landfill Sites Licence Holder: Licence Reference: Licence Easting: Licence Northing: Coperator Location: Authority: Max Input Rate: Waste Source Restrictions: Status: Dated: Dated	A18SE (N)	245	2	378377 424194





Map ID		Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Registered Landfill Sites					
222	Licence Reference: Site Location: South Licence Easting: Licence Northing: Operator Location: Authority: Site Category: Max Input Rate: Waste Source Restrictions: Status: Licence Dated: Dated: Superseded By Licence: Superseded By Licence: Superseded By Licence: Superseded By Licence: Positional Accuracy: Boundary Accuracy: Good Not Superseded By Licence: Positional Accuracy: Boundary Accuracy: Good	ipplied iley Road, Haslingden, Lancashire nment Agency - North West Region, Central Area I ned own restriction on source of waste e lapsed/cancelled/defunct/not applicable/surrenderedCancelled ictober 1979 oven oned by the supplier ruction And Demolition Wastes	A8NW (S)	374	2	378258 423310
223	Licence Reference: Site Location: Licence Easting: Licence Northing: Operator Location: Authority: Site Category: Max Input Rate: Waste Source Restrictions: Status: Licence Dated: Superseded By Licence: Positional Accuracy: Boundary Accuracy: Modera	inpplied tington Road, Bury, Lancashire noment Agency - North West Region, Central Area I ned restriction on source of waste e lapsed/cancelled/defunct/not applicable/surrenderedCancelled ptember 1977 ven ven when supplier atte 'N/Demol. Inert/Non-Haz/Non-Tox	A14NW (E)	482	2	378906 423921





Map ID		Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Registered Landfill	Sites				
224	Licence Holder: Licence Reference: Site Location: Licence Easting: Licence Northing: Operator Location: Authority: Site Category: Max Input Rate: Waste Source Restrictions: Status: Dated: Preceded By Licence: Superseded By Licence: Positional Accuracy: Boundary Accuracy: Authorised Waste Environment Agency must give specific authorisation for this waste to be acceptedWaste requires prior approval	Top O'Slate Quarry, Higher Lane, Haslingden, Rossenda Not Supplied Not Supplied Henrietta Street, Bacup, Lancashire Environment Agency - North West Region, South Area Landfill Undefined No known restriction on source of waste Record supersededSuperseded 29th September 1977 Not Given 20060 (L 60) Positioned by the supplier Moderate Road Making Materials	A14SE (E)	657	2	379047 423707
	Registered Landfill	Sitos				
225	Licence Holder: Licence Reference: Site Location: Licence Easting: Licence Northing: Operator Location: Authority: Site Category: Max Input Rate: Waste Source Restrictions: Status: Dated: Preceded By Licence: Superseded By Licence:	K & D Excavations L 191 Higher Barn Reclamation, Blackburn Road, Haslingden, Rossendale, Lancashire Not Supplied Not Supplied Victoria Millyard, Station Road, Haslingden, Lancashire Environment Agency - North West Region, Central Area Landfill Undefined No known restriction on source of waste Licence lapsed/cancelled/defunct/not applicable/surrenderedCancelled 1st March 1984 Not Given Not Given Positioned by the supplier	A19NW (NE)	727	2	378729 424591





Map ID		Details		Estimated Distance From Site	Contact	NGR
	Registered Landfill	Sites				
226	Licence Holder: Licence Reference: Site Location: Licence Easting: Licence Northing: Operator Location: Authority: Site Category: Max Input Rate: Waste Source Restrictions: Status: Dated: Preceded By Licence: Superseded By Licence:	Rossendale B.C. 20060 (L 60) Top O'Slate Quarry, Higher Lane, Haslingden, Rossenda 379150 423650 Henrietta Street, Bacup, Lancashire Environment Agency - North West Region, South Area Landfill Very Small (Less than 10,000 tonnes per year) Some restriction on source of waste Operational as far as is knownOperational 1st June 1993 L 60 Not Given Manually positioned to the address or location	A14SE (E)	773	2	379150 423650
	5 1.1 1.1 1611					
227	Registered Landfill Licence Holder: Licence Reference: Site Location: Licence Easting: Licence Northing: Operator Location: Authority: Site Category: Max Input Rate: Waste Source Restrictions: Status: Dated: Preceded By Licence: Superseded By Licence: Superseded By Licence: Positional Accuracy: Boundary Accuracy: Authorised Waste	M Holden L 310 Caraluxe, Hall Park, Haslingden, ROSSENDALE, Lancashire, BB4 5BQ 378670 424670 Hall Park, HASLINGDEN, Lancashire, BB4 5BQ Environment Agency - North West Region, Central Area Landfill Undefined No known restriction on source of waste Licence lapsed/cancelled/defunct/not applicable/surrenderedCancelled 1st June 1990 Not Given Not Given Manually positioned to the address or location	A18NE (N)	779	2	378670 424670





Map ID		Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
228	Site Location: Licence Easting: Licence Northing: Operator Location: Authority: Site Category: Max Input Rate: Waste Source Restrictions: Status: Dated: Preceded By Licence: Superseded By Licence:	Caralux L 118 Blackburn Road, Acre, Haslingden, Rossendale, Lancashire 378440 424810 As Site Address Environment Agency - North West Region, Central Area Landfill Undefined No known restriction on source of waste Licence lapsed/cancelled/defunct/not applicable/surrenderedCancelled 11th September 1979 Not Given Manually positioned to the address or location Not Applicable Construction And Demolition Wastes	A18NE (N)	865	2	378440 424810
229	Site Location: Operator Location: Authority: Site Category: Max Input Rate: Waste Source Restrictions: Licence Status: Dated: Preceded By Licence: Superseded By Licence:	A H Harding Eawml50045 Underbrow Farm, Cribden Side, Haslingden, Rossendale, Lancashire, Bb4 5ub Underbrow Farm, Cribden Side, Haslingden, Rossendale, Lancashire, Bb4 5ub Environment Agency - North West Region, South Area Transfer Undefined No known restriction on source of waste Operational as far as is knownOperational 20th April 2001 20424 (L 424 Not Given Approximate location provided by supplier Not Supplied Household/Commercial/Industrial Waste (Inferred From Regis Listing) New Licence, Wastes Not To Hand	A19SE (NE)	951	2	379300 424300





Map ID		Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Registered Waste T	ransfer Sites				
229	Licence Holder: Licence Reference: Site Location:	A H Harding 20424 (L 424 Underbrow Farm, Cribden Side, Haslingden, ROSSENDALE, Lancashire, BB4 5UB	A19SE (NE)	951	2	379300 424300
	Operator Location: Authority: Site Category: Max Input Rate: Waste Source	As Site Address Environment Agency - North West Region, South Area Transfer Undefined Some restriction on source of waste				
	Restrictions: Licence Status: Dated: Preceded By Licence:	Record supersededSuperseded 6th November 1992 Not Given				
	Superseded By Licence:	Eawml50045				
	Positional Accuracy: Boundary Quality: Authorised Waste	Approximate location provided by supplier Not Supplied Cement, Plasterboard/Plaster Glass, Slate, Concrete, Brick, Ceramics, Tarmac Max. Waste Permitted By Licence Non-Haz. Ferrous & Non-Ferr. Scrap				
		Paper/Cardboard Waste Rubber Soil, Clay, Natural Sand, Rock Solid Fully Polymersed Material Textiles, Fibres (Nat'L/Manmade) Timber				
	Prohibited Waste	Clinical Waste Foliage, Shavings, Sawdust Or Products Liquid Wastes Special Wastes Swarf/Finely Divided Metals Waste N.O.S.				
	Registered Waste T	reatment or Disposal Sites				
230	Licence Holder: Licence Reference: Site Location:	David Holt Plastics Ltd L 563 (WAS 449 2/93) Todd Hall Road, Carrs Industrial Estate, Haslingden, ROSSENDALE, Lancashire, BB4 5LA	A8NW (SW)	353	2	378080 423400
	Operator Location: Authority: Site Category: Max Input Rate: Waste Source Restrictions:	As Site Address Environment Agency - North West Region, Central Area Recovery - with reclamation Very Small (Less than 10,000 tonnes per year) Some restriction on source of waste				
	Licence Status: Dated: Preceded By Licence:	Licence lapsed/cancelled/defunct/not applicable/surrenderedCancelled 1st May 1994 Not Given				
	Superseded By Licence:	Not Given				
	Boundary Quality: Authorised Waste	Manually positioned within the geographical locality Not Supplied Max.Waste Permitted By Licence Polyethylene (Low/Med/High Dens Grades Telephone Directories				





Map ID		Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS 1:625,000 Solid Description:	d Geology Millstone Grit Group [See Also Migr]	A13NE (SW)	0	1	378341 423814
	BGS Estimated Soil Source: Soil Sample Type: Arsenic Concentration: Cadmium Concentration: Chromium Concentration: Lead Concentration: Nickel Concentration:	British Geological Survey, National Geoscience Information Service Sediment <15 mg/kg <1.8 mg/kg 60 - 90 mg/kg	A13NE (SW)	0	1	378341 423814
	BGS Estimated Soil Source: Soil Sample Type: Arsenic Concentration: Cadmium Concentration: Chromium Concentration: Lead Concentration: Nickel Concentration:	British Geological Survey, National Geoscience Information Service Sediment 15 - 25 mg/kg <1.8 mg/kg 60 - 90 mg/kg <100 mg/kg 15 - 30 mg/kg	A13NE (NE)	0	1	378401 423867
	BGS Estimated Soil Source: Soil Sample Type: Arsenic Concentration: Cadmium Concentration: Chromium Concentration: Lead Concentration: Nickel Concentration:	British Geological Survey, National Geoscience Information Service Sediment 15 - 25 mg/kg <1.8 mg/kg 60 - 90 mg/kg	A13SE (SE)	182	1	378560 423664
	BGS Estimated Soil Source: Soil Sample Type: Arsenic Concentration: Cadmium Concentration: Chromium Concentration: Lead Concentration: Nickel Concentration:	British Geological Survey, National Geoscience Information Service Sediment 15 - 25 mg/kg <1.8 mg/kg 60 - 90 mg/kg	A13SW (SW)	248	1	378115 423501
	BGS Estimated Soil Source: Soil Sample Type: Arsenic Concentration: Cadmium Concentration: Chromium Concentration: Lead Concentration: Nickel Concentration:	British Geological Survey, National Geoscience Information Service Sediment 15 - 25 mg/kg <1.8 mg/kg 60 - 90 mg/kg	A12SE (W)	580	1	377680 423792
	BGS Estimated Soil Source: Soil Sample Type: Arsenic Concentration: Cadmium Concentration: Chromium Concentration: Lead Concentration: Nickel Concentration:	British Geological Survey, National Geoscience Information Service Sediment 15 - 25 mg/kg <1.8 mg/kg 60 - 90 mg/kg	A18NE (N)	783	1	378658 424678



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Map ID		Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Estimated Soil Source: Soil Sample Type: Arsenic Concentration: Cadmium Concentration: Chromium Concentration: Lead Concentration: Nickel	British Geological Survey, National Geoscience Information Service Sediment 15 - 25 mg/kg <1.8 mg/kg 60 - 90 mg/kg	A24SW (N)	962	1	378693 424854
231	Concentration: BGS Recorded Minumer Source: Reference: Type: Status: Operator: Operator Location: Periodic Type: Geology: Commodity: Positional Accuracy:	eral Sites Carr Mill Haslingden, Lancashire British Geological Survey, National Geoscience Information Service 93576 Opencast Ceased Unknown Operator Not Supplied Carboniferous Lower Haslingden Flags Sandstone Located by supplier to within 10m	A14NW (NE)	505	1	378878 424150
232	BGS Recorded Mine Site Name: Location: Source: Reference: Type: Status: Operator: Operator Location: Periodic Type: Geology: Commodity: Positional Accuracy:	eral Sites Top O' Slate Haslingden, Rossendale, Lancashire British Geological Survey, National Geoscience Information Service 19355 Opencast Ceased Unknown Operator Not Supplied Carboniferous Upper Haslingden Flags Sandstone Located by supplier to within 10m	A14NW (E)	532	1	378955 423920
233	BGS Recorded Mine Site Name: Location: Source: Reference: Type: Status: Operator: Operator Location: Periodic Type: Geology: Commodity: Positional Accuracy:	Clough End Haslingden, Lancashire British Geological Survey, National Geoscience Information Service 93575 Opencast Ceased Unknown Operator Not Supplied Carboniferous Lower Haslingden Flags Sandstone Located by supplier to within 10m	A19SW (NE)	538	1	378850 424259
234	BGS Recorded Mine Site Name: Location: Source: Reference: Type: Status: Operator: Operator Location: Periodic Type: Geology: Commodity: Positional Accuracy:	ral Sites Top O' Slate Haslingden, Lancashire British Geological Survey, National Geoscience Information Service 9644 Opencast Ceased Unknown Operator Not Supplied Carboniferous Lower Haslingden Flags Sandstone Located by supplier to within 10m	A14SW (E)	605	1	379010 423780
235	BGS Recorded Mine Site Name: Location: Source: Reference: Type: Status: Operator: Operator Location: Periodic Type: Geology: Commodity: Positional Accuracy:	Hutch Bank Haslingden, Lancashire British Geological Survey, National Geoscience Information Service 93596 Opencast Ceased Unknown Operator Not Supplied Carboniferous Lower Haslingden Flags Sandstone Located by supplier to within 10m	A7NE (SW)	617	1	377859 423233



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Map ID		Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
236	BGS Recorded Mine Site Name: Location: Source: Reference: Type: Status: Operator: Operator Location: Periodic Type: Geology: Commodity: Positional Accuracy:	Hutch Bank Haslingden, Lancashire British Geological Survey, National Geoscience Information Service 93595 Opencast Ceased Unknown Operator Not Supplied Carboniferous Lower Haslingden Flags Sandstone Located by supplier to within 10m	A7NE (SW)	667	1	377728 423296
237	BGS Recorded Mine Site Name: Location: Source: Reference: Type: Status: Operator: Operator Location: Periodic Type: Geology: Commodity: Positional Accuracy:	Hutch Bank Haslingden, Lancashire British Geological Survey, National Geoscience Information Service 93597 Opencast Ceased Unknown Operator Not Supplied Carboniferous Lower Haslingden Flags Sandstone Located by supplier to within 10m	A7NE (SW)	691	1	377847 423148
238	BGS Recorded Mine Site Name: Location: Source: Reference: Type: Status: Operator: Operator Location: Periodic Type: Geology: Commodity: Positional Accuracy:	Top O' Slate Haslingden, Rossendale, Lancashire British Geological Survey, National Geoscience Information Service 19354 Opencast Ceased Unknown Operator Not Supplied Carboniferous Upper Haslingden Flags Sandstone Located by supplier to within 10m	A14SE (E)	759	1	379135 423650
239	BGS Recorded Mine Site Name: Location: Source: Reference: Type: Status: Operator: Operator Location: Periodic Type: Geology: Commodity: Positional Accuracy:	Hutch Bank Haslingden, Lancashire British Geological Survey, National Geoscience Information Service 2645 Opencast Ceased Bardon Aggregates - Northern Not Supplied Carboniferous Lower Haslingden Flags Sandstone	A7SE (SW)	822	1	377700 423100
240	BGS Recorded Mine Site Name: Location: Source: Reference: Type: Status: Operator: Operator Location: Periodic Type: Geology: Commodity: Positional Accuracy:	Higher Swineheard Lowe Haslingden, Lancashire British Geological Survey, National Geoscience Information Service 93592 Opencast Ceased Unknown Operator Not Supplied Carboniferous Millstone Grit Group Sandstone Located by supplier to within 10m	A12SW (W)	862	1	377395 423779
240	BGS Recorded Mine Site Name: Location: Source: Reference: Type: Status: Operator: Operator Location: Periodic Type: Geology: Commodity: Positional Accuracy:	Higher Swineheard Lowe Haslingden, Lancashire British Geological Survey, National Geoscience Information Service 93593 Opencast Ceased Unknown Operator Not Supplied Carboniferous Millstone Grit Group Sandstone Located by supplier to within 10m	A12NW (W)	874	1	377388 423824





Map ID		Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Recorded Mine	eral Sites				
241	Site Name: Location: Source: Reference: Type: Status: Operator: Operator Location: Periodic Type: Geology: Commodity:	Round Hill Haslingden, Lancashire British Geological Survey, National Geoscience Information Service 93565 Opencast Ceased Unknown Operator Not Supplied Carboniferous Millstone Grit Group Sandstone Located by supplier to within 10m	A18NW (N)	885	1	378033 424777
	BGS Recorded Mine	eral Sites				
242	Site Name: Location: Source: Reference: Type: Status: Operator: Operator Location: Periodic Type: Geology: Commodity: Positional Accuracy:	Acre Haslingden, Lancashire British Geological Survey, National Geoscience Information Service 93567 Opencast Ceased Unknown Operator Not Supplied Carboniferous Lower Haslingden Flags Sandstone Located by supplier to within 10m	A19NW (NE)	910	1	378885 424715
	BGS Recorded Mine					
243	Site Name: Location: Source: Reference: Type: Status: Operator: Operator Location: Periodic Type: Geology: Commodity: Positional Accuracy:	Copy Farm Haslingden, Lancashire British Geological Survey, National Geoscience Information Service 93577 Opencast Ceased Unknown Operator Not Supplied Carboniferous Millstone Grit Group Sandstone Located by supplier to within 10m	A12NW (W)	910	1	377380 423959
	BGS Recorded Mine	eral Sites				
244	Site Name: Location: Source: Reference: Type: Status: Operator: Operator Location: Periodic Type: Geology: Commodity: Positional Accuracy:	Acre Acre, Haslingden, Lancashire British Geological Survey, National Geoscience Information Service 93620 Opencast Ceased Unknown Operator Not Supplied Carboniferous Lower Haslingden Flags Sandstone Located by supplier to within 10m	A24SW (N)	955	1	378729 424836
	BGS Recorded Mine	eral Sites				
245	Site Name: Location: Source: Reference: Type: Status: Operator: Operator Location: Periodic Type: Geology: Commodity:	Hutch Bank Haslingden, Lancashire British Geological Survey, National Geoscience Information Service 93602 Opencast Ceased Unknown Operator Not Supplied Carboniferous Lower Haslingden Flags Sandstone Located by supplier to within 10m	A7SE (SW)	974	1	377723 422890
	BGS Measured Urba	an Soil Chemistry				
	No data available					
	BGS Urban Soil Che No data available	emistry Averages				
	Coal Mining Affecte	d Areas				
	Description:	In an area which may be affected by coal mining activity. It is recommended that a coal mining report is obtained from the Coal Authority. Contact details are included in the Useful Contacts section of this report.	A13NE (SW)	0	7	378341 423814





Map ID		Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Mining Instability					
	Mining Evidence: Source: Boundary Quality:	Inconclusive Coal Mining Ove Arup & Partners As Supplied	A13NE (SW)	0	-	378341 423814
	Non Coal Mining A	reas of Great Britain				
	Risk: Source:	Rare British Geological Survey, National Geoscience Information Service	A13NE (SW)	0	1	378341 423814
	Potential for Collap Hazard Potential: Source:	osible Ground Stability Hazards Very Low British Geological Survey, National Geoscience Information Service	A13NE (SW)	0	1	378341 423814
	Potential for Collap Hazard Potential: Source:	osible Ground Stability Hazards No Hazard British Geological Survey, National Geoscience Information Service	A13NE (NE)	0	1	378412 423900
	Potential for Collap	sible Ground Stability Hazards	, ,			
	Hazard Potential: Source:	Very Low British Geological Survey, National Geoscience Information Service	A13NE (E)	79	1	378498 423845
	Potential for Comp Hazard Potential: Source:	ressible Ground Stability Hazards No Hazard British Geological Survey, National Geoscience Information Service	A13NE (N)	0	1	378339 423859
	Potential for Comp Hazard Potential: Source:	ressible Ground Stability Hazards Moderate British Geological Survey, National Geoscience Information Service	A13NE (SW)	0	1	378341 423814
	Potential for Comp Hazard Potential: Source:	ressible Ground Stability Hazards Very Low British Geological Survey, National Geoscience Information Service	A13SW (S)	22	1	378303 423664
	Potential for Comp	ressible Ground Stability Hazards				
	Hazard Potential: Source:	No Hazard British Geological Survey, National Geoscience Information Service	A13SE (S)	36	1	378381 423670
	•	ressible Ground Stability Hazards				
	Hazard Potential: Source:	No Hazard British Geological Survey, National Geoscience Information Service	A13NE (E)	79	1	378498 423845
	Potential for Comp Hazard Potential: Source:	ressible Ground Stability Hazards Moderate British Geological Survey, National Geoscience Information Service	A13SW (W)	234	1	378027 423795
	Potential for Groun	nd Dissolution Stability Hazards	,			
	Hazard Potential: Source:	No Hazard British Geological Survey, National Geoscience Information Service	A13NE (SW)	0	1	378341 423814
	Potential for Lands Hazard Potential: Source:	lide Ground Stability Hazards Low British Geological Survey, National Geoscience Information Service	A13NE (N)	0	1	378358 423864
	Potential for Lands	lide Ground Stability Hazards				
	Hazard Potential: Source:	Very Low British Geological Survey, National Geoscience Information Service	A13NE (SW)	0	1	378341 423814
	Potential for Lands Hazard Potential:	lide Ground Stability Hazards Moderate	A13SW	0	1	378267
	Source:	British Geological Survey, National Geoscience Information Service	(SW)			423765
		lide Ground Stability Hazards	44615			070000
	Hazard Potential: Source:	Moderate British Geological Survey, National Geoscience Information Service	A13NE (N)	0	1	378339 423859
	Potential for Lands Hazard Potential: Source:	lide Ground Stability Hazards Low British Geological Survey, National Geoscience Information Service	A13NW (W)	5	1	378297 423824
		lide Ground Stability Hazards Very Low British Geological Survey, National Geoscience Information Service	A13NW (W)	17	1	378279 423814
	Potential for Lands Hazard Potential: Source:	Low British Geological Survey, National Geoscience Information Service	A13SE (E)	75	1	378508 423812
		Low British Geological Survey, National Geoscience Information Service	A13NE (N)	81	1	378363 424030





Map ID		Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Potential for Lands Hazard Potential: Source:	lide Ground Stability Hazards Moderate British Geological Survey, National Geoscience Information Service	A13SE (SE)	92	1	378486 423694
	Potential for Lands	lide Ground Stability Hazards	, ,			
	Hazard Potential: Source:	Low British Geological Survey, National Geoscience Information Service	A13NW (NW)	105	1	378258 424003
	Potential for Lands Hazard Potential: Source:	lide Ground Stability Hazards Low British Geological Survey, National Geoscience Information Service	A13SE (SE)	111	1	378465 423654
	Hazard Potential:	lide Ground Stability Hazards Low	A13NE	127	1	378548
	Source:	British Geological Survey, National Geoscience Information Service	(NE)			423955
	Hazard Potential: Source:	lide Ground Stability Hazards Low British Geological Survey, National Geoscience Information Service	A13NE (E)	142	1	378556 423852
	Potential for Lands Hazard Potential: Source:	lide Ground Stability Hazards Moderate British Geological Survey, National Geoscience Information Service	A13NE (E)	149	1	378557 423847
		lide Ground Stability Hazards Low British Geological Survey, National Geoscience Information Service	A13SW (S)	185	1	378297 423495
		lide Ground Stability Hazards Moderate British Geological Survey, National Geoscience Information Service	A13SW (S)	202	1	378299 423478
		lide Ground Stability Hazards Very Low British Geological Survey, National Geoscience Information Service	A13SW (SW)	240	1	378033 423612
		ng Sand Ground Stability Hazards Low British Geological Survey, National Geoscience Information Service	A13NE (NE)	0	1	378412 423900
		ng Sand Ground Stability Hazards No Hazard British Geological Survey, National Geoscience Information Service	A13SW (SW)	0	1	378263 423725
	Potential for Runnin Hazard Potential: Source:	ng Sand Ground Stability Hazards No Hazard British Geological Survey, National Geoscience Information Service	A13NE (NE)	0	1	378361 423857
	Potential for Runnin Hazard Potential: Source:	ng Sand Ground Stability Hazards Very Low British Geological Survey, National Geoscience Information Service	A13NE (SW)	0	1	378341 423814
	Potential for Runnin Hazard Potential: Source:	ng Sand Ground Stability Hazards No Hazard British Geological Survey, National Geoscience Information Service	A13NE (E)	79	1	378498 423845
	Potential for Runnin Hazard Potential: Source:	ng Sand Ground Stability Hazards Low British Geological Survey, National Geoscience Information Service	A13SW (W)	234	1	378027 423795
	Potential for Shrink Hazard Potential: Source:	ving or Swelling Clay Ground Stability Hazards Very Low British Geological Survey, National Geoscience Information Service	A13NE (N)	0	1	378339 423859
	Potential for Shrink Hazard Potential: Source:	ing or Swelling Clay Ground Stability Hazards No Hazard British Geological Survey, National Geoscience Information Service	A13NE (SW)	0	1	378341 423814
	Potential for Shrink Hazard Potential: Source:	ing or Swelling Clay Ground Stability Hazards No Hazard British Geological Survey, National Geoscience Information Service	A13NE (E)	79	1	378498 423845
	Potential for Shrink Hazard Potential: Source:	ing or Swelling Clay Ground Stability Hazards No Hazard British Geological Survey, National Geoscience Information Service	A13NW (NW)	102	1	378242 423971
	Potential for Shrink Hazard Potential: Source:	ing or Swelling Clay Ground Stability Hazards Low British Geological Survey, National Geoscience Information Service	A13NE (N)	120	1	378370 424068
	Potential for Shrink Hazard Potential: Source:	ing or Swelling Clay Ground Stability Hazards No Hazard British Geological Survey, National Geoscience Information Service	A13NW (NW)	217	1	378157 424053



Geological

Map ID		Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Potential for Shrink	otential for Shrinking or Swelling Clay Ground Stability Hazards				
	Hazard Potential: Source:	No Hazard British Geological Survey, National Geoscience Information Service	A13SW (SW)	240	1	378033 423612
	Radon Potential - R	adon Affected Areas				
	Affected Area: Source:	The property is in a Lower probability radon area (less than 1% of homes are estimated to be at or above the Action Level). British Geological Survey, National Geoscience Information Service	A13NW (W)	0	1	378325 423814
	Radon Potential - R	adon Affected Areas				
	Affected Area: Source:	The property is an Intermediate probability radon area (3 to 5% of homes are estimated to be at or above the Action Level). British Geological Survey, National Geoscience Information Service	A13NE (SW)	0	1	378341 423814
	Radon Potential - R	adon Protection Measures				
	Protection Measure: Source:	No radon protective measures are necessary in the construction of new dwellings or extensions British Geological Survey, National Geoscience Information Service	A13NW (W)	0	1	378325 423814
	-	ladon Potential - Radon Protection Measures				
		Basic radon protective measures are necessary in the construction of new dwellings or extensions British Geological Survey, National Geoscience Information Service	A13NE (SW)	0	1	378341 423814

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Map ID		Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Contemporary Trad	le Directory Entries				
246	Name: Location: Classification: Status:	Lodge Sheet Metal Fabrications Ltd Vine Grove Works, Carrs Industrial Estate, Commerce Street, Haslingden, Rossendale, Lancashire, BB4 5JT Sheet Metal Work Active	A13SE (S)	71	-	378371 423616
		Automatically positioned to the address				
	Contemporary Trad	le Directory Entries				
246	Name: Location: Classification: Status:	Rossendale Group Plc Vine Grove Works, Carrs Industrial Estate, Commerce Street, Haslingden, Rossendale, Lancashire, BB4 5JT Lifting Equipment Inactive	A13SE (S)	71	-	378371 423616
		Automatically positioned to the address				
	Contemporary Trad	le Directory Entries				
246	Name: Location: Classification: Status:	Planned Maintenance (Pennine) Ltd Unit 2, Vine Grove Works, Carrs Industrial Estate, Commerce Street, Haslingden, Rossendale, Lancashire, BB4 5JT Concrete Contractors Inactive	A13SE (S)	71	-	378371 423616
	-	Automatically positioned to the address				
246	Contemporary Trad Name: Location:	N K F United Kingdom Ltd Unit 2, Vine Grove Works, Carrs Industrial Estate, Commerce Street, Haslingden, Rossendale, Lancashire, BB4 5JT	A13SE (S)	71	-	378371 423616
	Classification: Status: Positional Accuracy:	Fibre Optics Inactive Automatically positioned to the address				
	Contemporary Trad	•				
246	Name: Location: Classification: Status:	Planned Maintenance (Pennine) Ltd Unit 2, Vine Grove Works, Carrs Industrial Estate, Commerce Street, Haslingden, Rossendale, Lancashire, BB4 5JT Mechanical Engineers Inactive	A13SE (S)	71	-	378371 423616
		Automatically positioned to the address				
	Contemporary Trad	le Directory Entries				
246	Name: Location: Classification:	Planned Maintenance (Pennine) Ltd Vine Grove Works, Carrs Industrial Estate, Commerce Street, Haslingden, Rossendale, Lancashire, BB4 5JT Engineering Services	A13SE (S)	71	-	378371 423616
	Status: Positional Accuracy:	Inactive Automatically positioned to the address				
	Contemporary Trad	• • • • • • • • • • • • • • • • • • • •				
246	Name: Location: Classification: Status:	Warton Metals Ltd Carrs Industrial Estate, Commerce Street, Haslingden, Rossendale, BB4 5JT Manufacturers Active Automatically positioned to the address	A13SE (S)	92	-	378399 423611
	Contemporary Trad					
247	Name: Location:	Advance Air Movements (Lancs) Ltd Vine Grove Works, Commerce St, Haslingden, Rossendale, Lancashire, BB4 5JT	A13NE (NE)	79	-	378494 423884
	Classification: Status: Positional Accuracy:	Ventilators & Ventilation Systems Inactive Manually positioned to the address or location				
	Contemporary Trad	le Directory Entries				
247	Name: Location: Classification:	Greenday U P V C Systems Unit 3, Grove House, Carrs Industrial Estate, Booth Street, Haslingden, Rossendale, Lancashire, BB4 5JA Window Frame Manufacturers	A13NE (NE)	80	-	378495 423884
	Status:	Inactive Automatically positioned to the address				
	Contemporary Trad					
247	Name: Location: Classification: Status:	Rossendale Plastics Unit 1, Station Road, Haslingden, Rossendale, Lancashire, BB4 5HX Machine Shops Active	A13NE (E)	97	-	378511 423880
		Automatically positioned to the address				



Map ID		Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
248	Contemporary Trad	e Directory Entries Stickwithus Ltd	A13NE	102		378525
240	Location: Classification: Status:	Unit 2, Vale Street, Haslingden, Rossendale, Lancashire, BB4 5JB Adhesives, Glues & Sealants Inactive Automatically positioned to the address	(NE)	102	-	423934
	Contemporary Trad	e Directory Entries				
248	Name: Location: Classification: Status: Positional Accuracy:	Bridge Catering Fabrications Ltd Bridge House, Vale Street, Haslingden, Rossendale, Lancashire, BB4 5JB Metal Products - Fabricated Inactive Automatically positioned to the address	A13NE (NE)	140	-	378563 423927
	Contemporary Trad					
248	Name: Location: Classification: Status:	Valley Building Supplies Unit 1, Vale Street, Haslingden, Rossendale, BB4 5JB Builders' Merchants Active Automatically positioned to the address	A13NE (NE)	153	-	378576 423934
	Contemporary Trad	e Directory Entries				
249	Name: Location: Classification: Status: Positional Accuracy:	W H Good Ltd W H Good Ltd, Commerce Street, Rossendale, BB4 5JT Mechanical Engineers Active Automatically positioned to the address	A13SW (SW)	121	-	378173 423617
	Contemporary Trad	e Directory Entries				
249	Name: Location:	Falcon Products Ltd Falcon House, Carrs Industrial Estate, Commerce Street, Haslingden, ROSSENDALE, Lancashire, BB4 5JT Catering Equipment	A13SW (SW)	145	-	378152 423604
	Status:	Active Automatically positioned to the address				
	Contemporary Trad	•				
250	Name: Location: Classification: Status:	M C T Brattberg Carrs Industrial Estate, Commerce Street, Haslingden, ROSSENDALE, Lancashire, BB4 5JT Sealant Compounds & Applications Active	A13SW (SW)	149	-	378226 423558
		Automatically positioned to the address				
	Contemporary Trad	e Directory Entries				
250	Name: Location:	Solomon Carrs Industrial Estate, Commerce Street, Haslingden, Rossendale, Lancashire, BB4 5JT	A13SW (SW)	149	-	378226 423558
	Classification: Status: Positional Accuracy:	Refrigeration Equipment Manufacturers & Distributors Active Manually positioned within the geographical locality				
	Contemporary Trad	e Directory Entries				
250	Name: Location:	Pro Tech Sealants Unit 1,Carrs Ind Est,Commerce St, Haslingden, Rossendale, Lancashire, BB4 5JT	A13SW (SW)	149	-	378226 423558
	Classification: Status: Positional Accuracy:	Chemical Manufacturers Inactive Manually positioned within the geographical locality				
	Contemporary Trad	e Directory Entries				
251	Name: Location:	Reelvision Print Q C L House, Carrs Industrial Estate, Commerce Street, Haslingden, Rossendale, Lancashire, BB4 5JT	A13SE (E)	154	-	378526 423745
	Classification: Status: Positional Accuracy:	Printers Inactive Automatically positioned to the address				
	Contemporary Trad					
252	Name: Location: Classification: Status:	Vehicle Recovery Service 186, Blackburn Road, Haslingden, Rossendale, Lancashire, BB4 5HW Breakdown and Recovery Inactive Automatically positioned to the address	A13NE (E)	185	-	378594 423849
	Contemporary Trad					
252	Name: Location: Classification: Status:	Vehicle Recovery Service 186, Blackburn Road, Haslingden, Rossendale, BB4 5HW Car Breakdown & Recovery Services Active	A13NE (E)	186	-	378596 423849



Map ID		Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Contemporary Trad	e Directory Entries				
252	Name: Location: Classification: Status:	Premier Ltd Blackburn Rd, Haslingden, Rossendale, Lancashire, BB4 5QG Petrol Filling Stations Inactive Manually positioned to the road within the address or location	A13SE (E)	202	-	378591 423780
252	Contemporary Trad Name: Location: Classification: Status: Positional Accuracy:	e Directory Entries Njf Motor Services 147, Blackburn Road, Haslingden, Rossendale, Lancashire, BB4 5HN Garage Services Inactive Automatically positioned to the address	A13SE (E)	215	-	378614 423805
252	Contemporary Trad Name: Location: Classification: Status: Positional Accuracy:	e Directory Entries Neil James 147, Blackburn Road, Haslingden, Rossendale, Lancashire, BB4 5HN Garage Services Inactive Automatically positioned to the address	A13SE (E)	215	-	378614 423805
253	Contemporary Trad Name: Location: Classification: Status: Positional Accuracy:	e Directory Entries Canberra Scaffolding Ltd Canberra House, Carrs Industrial Estate, Commerce Street, Haslingden, Rossendale, BB4 5JT Scaffolding & Work Platforms Inactive Automatically positioned to the address	A13SW (SW)	212	-	378089 423573
253	Contemporary Trad Name: Location: Classification: Status: Positional Accuracy:	e Directory Entries Dermide Ltd Carrs Ind Est,Commerce St, Haslingden, Rossendale, Lancashire, BB4 5JT Wallpapers & Wall Coverings Inactive Manually positioned to the road within the address or location	A13SW (SW)	242	-	378088 423530
253	Contemporary Trad Name: Location: Classification: Status: Positional Accuracy:	e Directory Entries Advanced Combustion Engineering Ltd Unit 3, Carrs Industrial Estate, Commerce Street, Haslingden, ROSSENDALE, Lancashire, BB4 5JT Engineers - General Active Automatically positioned to the address	A13SW (SW)	245	-	378073 423542
253	Contemporary Trad Name: Location: Classification: Status:	··	A13SW (SW)	276	-	378049 423521
254	Contemporary Trad Name: Location: Classification: Status:		A13NE (NE)	212	-	378625 423998
255	Contemporary Trad Name: Location: Classification: Status:	··	A13SE (E)	216	-	378598 423758
255	Contemporary Trad Name: Location: Classification: Status: Positional Accuracy:	e Directory Entries Puposet Ltd 121, Blackburn Road, Haslingden, Rossendale, Lancashire, BB4 5HL Electronic Engineers Inactive Automatically positioned to the address	A13SE (E)	220	-	378586 423716
256	Contemporary Trad Name: Location: Classification: Status: Positional Accuracy:	e Directory Entries Powerlink Components Unit 8, Taylors Court, Todd Hall Road, Haslingden, Rossendale, BB4 5LA Electronic Component Manufacturers & Distributors Active Automatically positioned to the address	A13SW (SW)	219	-	378178 423501



Map ID		Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
256	Contemporary Trad Name: Location: Classification: Status: Positional Accuracy:	e Directory Entries Express C N C Unit 1, Taylor Court, Todd Hall Road, Rossendale, BB4 5LA Machinery - Industrial & Commercial Active Automatically positioned to the address	A13SW (SW)	219	-	378178 423501
256	Contemporary Trad Name: Location: Classification: Status: Positional Accuracy:	e Directory Entries Tarox Unit 9, Taylors Court, Todd Hall Road, Haslingden, Rossendale, BB4 5LA Brake & Clutch Manufacturers Inactive Automatically positioned to the address	A13SW (SW)	219	-	378178 423501
256	Contemporary Trad Name: Location: Classification: Status: Positional Accuracy:	e Directory Entries Saanro International Ltd Unit 3, Taylors Court, Todd Hall Road, Haslingden, Rossendale, BB4 5LA Car Washing & Polishing Equipment & Supplies Active Automatically positioned to the address	A13SW (SW)	219	-	378178 423501
256	Contemporary Trad Name: Location: Classification: Status: Positional Accuracy:	e Directory Entries Frenitalia Ltd Unit 9, Taylors Court, Todd Hall Road, Haslingden, Rossendale, Lancashire, BB4 5LA Brake & Clutch Service Centres Inactive Automatically positioned to the address	A13SW (SW)	233	-	378186 423484
256	Contemporary Trad Name: Location: Classification: Status: Positional Accuracy:	e Directory Entries Wiltshire Farm Foods Unit 2, Taylors Court, Todd Hall Road, Haslingden, Rossendale, Lancashire, BB4 5LA Frozen Food Processors & Distributors Inactive Automatically positioned to the address	A13SW (SW)	233	-	378186 423484
256	Contemporary Trad Name: Location: Classification: Status:	··	A13SW (SW)	233	-	378186 423484
256	Contemporary Trad Name: Location: Classification: Status:		A13SW (SW)	233	-	378186 423484
256	Contemporary Trad Name: Location: Classification: Status:		A13SW (SW)	233	-	378186 423484
256	Contemporary Trad Name: Location: Classification: Status:	· · · · · · · · · · · · · · · · · · ·	A13SW (SW)	233	-	378186 423484
256	Contemporary Trad Name: Location: Classification: Status:		A13SW (SW)	233	-	378186 423484



Map ID		Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Contemporary Trad	e Directory Entries				
256	Name: Location: Classification: Status:	Bakewell Ovens Ltd Unit 10-11, Taylors Court, Todd Hall Road, Haslingden, Rossendale, Lancashire, BB4 5LA Catering Equipment Inactive	A13SW (SW)	233	-	378186 423484
		Automatically positioned to the address				
257	Contemporary Trad Name: Location: Classification: Status:	Camel Cleaners Martin Croft Road, Haslingden, Rossendale, Lancashire, BB4 5BS Blast Cleaning Inactive	A18SW (N)	219	-	378307 424165
	-	Automatically positioned to the address				
257	Contemporary Trad Name: Location: Classification: Status: Positional Accuracy:	Camel Cleaners Martin Croft Road, Haslingden, Rossendale, Lancashire, BB4 5BS Blast Cleaning Inactive Automatically positioned to the address	A18SW (N)	219	-	378307 424165
258	Contemporary Trad Name: Location: Classification: Status:	Wilson'S Ranges & Stoves 119, Blackburn Road, Haslingden, Rossendale, BB4 5HL Cookers - Sales & Service Active	A13SE (SE)	220	-	378557 423639
	Contemporary Trad	Automatically positioned to the address				
259	Name: Location:	Integrated Facilities Ltd Prinny Mill Business Centre,Blackburn Road, Haslingden, Rossendale, Lancashire, BB4 5HL	A8NE (S)	230	-	378431 423468
	Classification: Status: Positional Accuracy:	Electrical Engineers Active Manually positioned to the address or location				
259	Contemporary Trad Name: Location: Classification: Status:	Elekem Wellbank Works, 68, Blackburn Road, Haslingden, Rossendale, Lancashire, BB4 5QF Plastic Products - Manufacturers Active	A8NE (S)	230	-	378431 423468
	-	Automatically positioned to the address				
259	Contemporary Trad Name: Location: Classification: Status:	G Holt Mechanical Services Prinny Mill Business Centre, Blackburn Road, Haslingden, Rossendale, Lancashire, BB4 5HL Garage Services Active	A8NE (S)	230	-	378431 423468
		Automatically positioned to the address				
259	Contemporary Trad Name: Location: Classification:	e Directory Entries Reid Atkinson Ltd Prinny Mill Business Centre, 68 Blackburn Road, Haslingden, Rossendale, Lancashire, BB4 5HL Road Haulage Services	A8NE (S)	243	-	378431 423454
	Status: Positional Accuracy:	Active Manually positioned to the address or location				
	Contemporary Trad					
260	Name: Location:	Production Print Direct Ltd Link 665 Business Centre, Todd Hall Road, Haslingden, Rossendale, BB4 5HU	A8NW (S)	278	-	378207 423427
	Classification: Status: Positional Accuracy:	Press Tool Manufacturers & Distributors Active Automatically positioned to the address				
	Contemporary Trad					
260	Name: Location: Classification: Status:	Print On Suite 1a Link 665 Business Centre,Todd Hall Road, Haslingden, Rossendale, Lancashire, BB4 5HU Printers Inactive	A8NW (S)	278	-	378207 423427

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	Contemporary Trad	e Directory Entries				
260	Name: Location: Classification:	Protocol Communications Managment Ltd Link Business Centre, 665, Todd Hall Road, Haslingden, Rossendale, Lancashire, BB4 5HU Printers	A8NW (S)	282	-	378203 423425
	Status: Positional Accuracy:	Inactive Automatically positioned to the address				
	Contemporary Trad	e Directory Entries				
261	Name: Location: Classification: Status:	New Street Garage Hudrake Mill, Hudrake, Haslingden, Rossendale, BB4 5AL Garage Services Active	A14NW (NE)	291	-	378710 423983
	-	Automatically positioned to the address				
261	Contemporary Trad Name: Location: Classification: Status: Positional Accuracy:	e Directory Entries Hudrake Motors Hudrake Mill, Hudrake, Haslingden, Rossendale, Lancashire, BB4 5AL Garage Services Inactive Automatically positioned to the address	A14NW (NE)	292	-	378712 423977
	Contemporary Trad	e Directory Entries				
262	Name: Location: Classification: Status: Positional Accuracy:	Blast Clean & Paint Carrs Industrial Estate, Commerce Street, Haslingden, Rossendale, BB4 5JT Blast Cleaning Active Automatically positioned to the address	A13SW (SW)	312	-	378018 423503
	Contemporary Trad	e Directory Entries				
263	Name: Location: Classification: Status: Positional Accuracy:	Red Rose Classics 1, Laburnum Street, Haslingden, Rossendale, Lancashire, BB4 5DW Classic Car Specialists Inactive Automatically positioned to the address	A8NE (S)	326	-	378420 423361
	Contemporary Trad					
264	Name: Location: Classification: Status:	Bill Meynell Haulage 157, Hudrake, Haslingden, Rossendale, Lancashire, BB4 5AL Road Haulage Services Active Automatically positioned to the address	A14NW (NE)	354	-	378707 424143
	Contemporary Trad					
265	Name: Location: Classification: Status:	Lathepress Tyres Ltd 2-4, Regent Street, Haslingden, Rossendale, Lancashire, BB4 5HQ Tyre Dealers Inactive Automatically positioned to the address	A8NE (SE)	377	-	378605 423414
	Contemporary Trad	e Directory Entries				
265	Name: Location: Classification: Status: Positional Accuracy:	Haslingden Tyres Ltd 2-4, Regent Street, Haslingden, Rossendale, Lancashire, BB4 5HQ Tyre Dealers Active Automatically positioned to the address	A8NE (SE)	377	-	378605 423414
	Contemporary Trad	e Directory Entries				
266	Name: Location:	S D F Electronics Ltd Unit 2,Unicorn Park,Carrs Ind Est, Haslingden, Rossendale, Lancashire, BB4 5LA	A8NW (S)	390	-	378159 423326
	Classification: Status: Positional Accuracy:	Electronic Equipment - Manufacturers & Assemblers Inactive Manually positioned to the address or location				
	Contemporary Trad	e Directory Entries				
266	Name: Location: Classification: Status: Positional Accuracy:	T S Jeans Care Ltd Unit 3, Bentwood Road, Rossendale, BB4 5HH Chemicals & Allied Products Active Automatically positioned to the address	A8NW (S)	399	-	378156 423317
	Contemporary Trad					
266	Name: Location: Classification: Status:	Regency Fcb Uk Ltd Unit 4, Bentwood Road, Haslingden, Rossendale, BB4 5HH Colour Manufacturers & Suppliers Active Automatically positioned to the address	A8NW (S)	416	-	378152 423301



Map ID		Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Contemporary Trad	e Directory Entries				
267	Name: Location: Classification: Status: Positional Accuracy:	Lincoln Street Garage 12, Lincoln Street, Haslingden, Rossendale, Lancashire, BB4 5DT Garage Services Inactive Automatically positioned to the address	A8NE (S)	391	-	378370 423287
	Contemporary Trad	e Directory Entries				
268	Name: Location: Classification: Status: Positional Accuracy:	Hi-Speed Catering Services Bell Street, Haslingden, Rossendale, Lancashire, BB4 5PX Catering Equipment Inactive Automatically positioned to the address	A8NE (SE)	417	-	378556 423323
	Contemporary Trad	e Directory Entries				
268	Name: Location: Classification: Status: Positional Accuracy:	Texaco Blackburn Road, Haslingden, Rossendale, Lancashire, BB4 5QG Petrol Filling Stations Inactive Automatically positioned to the address	A8NE (S)	423	-	378532 423303
	Contemporary Trad	e Directory Entries				
268	Name: Location: Classification: Status: Positional Accuracy:	Texaco Blackburn Road, Haslingden, Rossendale, Lancashire, BB4 5QG Petrol Filling Stations Active Automatically positioned to the address	A8NE (S)	423	-	378532 423303
	Contemporary Trad	e Directory Entries				
268	Name: Location: Classification: Status: Positional Accuracy:	Haslingden Service Station Blackburn Road, Haslingden, Rossendale, Lancashire, BB4 5QG Petrol Filling Stations Inactive Automatically positioned to the address	A8NE (S)	423	-	378532 423303
	Contemporary Trad	e Directory Entries				
269	Name: Location: Classification: Status: Positional Accuracy:	Powder Coatings Northern Ltd Todd Hall Road, Haslingden, Rossendale, BB4 5LA Powder Coatings Active Automatically positioned to the address	A7NE (SW)	417	-	377955 423416
	Contemporary Trad	e Directory Entries				
269	Name: Location: Classification: Status: Positional Accuracy:	Moto-Coat Todd Hall Road, Haslingden, Rossendale, BB4 5LA Powder Coatings Active Automatically positioned to the address	A7NE (SW)	417	-	377955 423416
	Contemporary Trad	e Directory Entries				
269	Name: Location: Classification: Status: Positional Accuracy:	Thai Pac Unit 5,Underbank Way, Haslingden, Rossendale, Lancashire, BB4 5HR Polythene & Plastic Sheeting Supplies Inactive Manually positioned to the address or location	A7NE (SW)	433	-	377964 423385
	Contemporary Trad	e Directory Entries				
270	Name: Location: Classification: Status: Positional Accuracy:	Eaton Filtration 5-7 Deardengate, Haslingden, Rossendale, Lancashire, BB4 5QN Filtration Systems & Services Active Automatically positioned to the address	A8NE (SE)	420	-	378613 423363
	Contemporary Trad	e Directory Entries				
271	Name: Location: Classification: Status: Positional Accuracy:	Harrison Saw & Tool Ltd Underbank Way, Haslingden, Rossendale, Lancashire, BB4 5HR Builders' Tools & Equipment Manufacturers Active Automatically positioned to the address	A8NW (SW)	424	-	378060 423330
	Contemporary Trad	e Directory Entries				
271	Name: Location: Classification: Status:	Combisofa.Com Unit 1 Carrs Industrial Estate,Bentwood Road, Haslingden, Rossendale, Lancashire, BB4 5HH Seating Manufacturers Inactive Manually positioned within the geographical locality	A8NW (SW)	462	-	378040 423297



Map ID		Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Contemporary Trad	e Directory Entries				
272	Name: Location:	M C E Ltd Unit 1a, Fountain Mill, Rakefoot, Haslingden, Rossendale, Lancashire, BB4 5RE	A14SW (SE)	433	-	378765 423585
	Classification: Status: Positional Accuracy:	Catering Equipment Active Automatically positioned to the address				
	Contemporary Trad	•				
273	Name: Location: Classification: Status:	Holdens Pattern Tooling Ltd 3, Hargreaves Street, Haslingden, Rossendale, Lancashire, BB4 5RQ Precision Engineers Inactive Manually positioned to the address or location	A9NW (SE)	463	-	378727 423431
	Contemporary Trad	• • • • • • • • • • • • • • • • • • • •				
273	Name: Location: Classification: Status:	Holdens Pattern & Tooling 3, Hargreaves Street, Haslingden, Rossendale, Lancashire, BB4 5RQ Tool Design, Manufacturers & Makers Inactive Automatically positioned to the address	A9NW (SE)	464	-	378727 423431
	Contemporary Trad					
273	Name: Location: Classification: Status:	Filter Fabrications Unit 10a Hargreaves Mill,10a Chapel Street, Haslingden, Rossendale, Lancashire, BB4 5QR Air Purification Equipment Active Manually positioned within the geographical locality	A9NW (SE)	481	-	378731 423405
	Contemporary Trad	e Directory Entries				
274	Name: Location: Classification: Status:	Reconditioned Heater Sales Clough End Road, Haslingden, Rossendale, Lancashire, BB4 5AN Heating Equipment - Sales & Service Inactive Automatically positioned to the address	A19SW (NE)	469	-	378729 424288
	Contemporary Trad	e Directory Entries				
275	Name: Location: Classification: Status:	Advanced Colours & Chemicals Ltd Unit 7, Bentwood Road, Haslingden, Rossendale, Lancashire, BB4 5HH Chemicals & Allied Products Active Automatically positioned to the address	A8NW (S)	469	-	378133 423251
	Contemporary Trad					
276	Name: Location: Classification: Status:	P V I Products Unit 4,Hud Hey Rd, Haslingden, Rossendale, Lancashire, BB4 5JH Car Accessories Manufacturers Inactive Manually positioned to the address or location	A18SE (NE)	474	-	378582 424378
	Contemporary Trad					
276	Name: Location: Classification: Status:	A B Tyre Sales Ltd Unit 4, Old Townsend Yard, Hud Hey Road, Rossendale, BB4 5JH Car Dealers - Used Active Automatically positioned to the address	A18SE (NE)	475	-	378581 424379
	Contemporary Trad	* *				
277	Name: Location: Classification: Status:	Fabserv Unit 1-2, Underbank Way, Haslingden, Rossendale, BB4 5HR Sheet Metal Work Inactive Automatically positioned to the address	A7NE (SW)	479	-	377968 423322
	Contemporary Trad	* *				
277	Name: Location: Classification: Status:	Multipol Ltd Underbank Way, Haslingden, Rossendale, Lancashire, BB4 5HR Packaging Materials Manufacturers & Suppliers Inactive Manually positioned within the geographical locality	A7NE (SW)	479	-	377972 423320
	Contemporary Trad	7. 00				
277	Name: Location: Classification: Status:	Innovative Nail Kreations Ltd Unit 3, Underbank Way, Haslingden, Rossendale, BB4 5HR Distribution Services Active Automatically positioned to the address	A7NE (SW)	491	-	377972 423305



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Map ID		Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Contemporary Trad	e Directory Entries				
277	Name: Location: Classification: Status: Positional Accuracy:	Option Technologies Europe Unit 3, Underbank Way, Haslingden, Rossendale, BB4 5HR Printed Circuit Manufacturers Inactive Automatically positioned to the address	A7NE (SW)	491	-	377972 423305
	Contemporary Trad	e Directory Entries				
277	Name: Location: Classification: Status: Positional Accuracy:	Foam Cutting Ltd Carrs Industrial Estate, Underbank Way, Haslingden, Rossendale, Lancashire, BB4 5HR Packaging Materials Manufacturers & Suppliers Inactive Manually positioned to the address or location	A7NE (SW)	498	-	377972 423296
	-					
278	Contemporary Trad Name: Location: Classification: Status: Positional Accuracy:	J W Shoes Ltd 3, Hud Hey Road, Haslingden, Rossendale, Lancashire, BB4 5JH Footwear Manufacturers Inactive Automatically positioned to the address	A18SE (NE)	491	-	378657 424363
	Contemporary Trad	e Directory Entries				
279	Name: Location: Classification: Status: Positional Accuracy:	Arena Textiles Hargreaves St, Haslingden, Rossendale, Lancashire, BB4 5RQ Textile Manufacturing Inactive Manually positioned to the road within the address or location	A14SW (SE)	502	-	378794 423476
	-	· · · · · · · · · · · · · · · · · · ·				
279	Contemporary Trad Name: Location: Classification: Status: Positional Accuracy:	Brooklands Metalcraft Hargreaves Mill, Hargreaves Street, Haslingden, Rossendale, Lancashire, BB4 5RQ Catering Equipment Inactive Automatically positioned to the address	A9NW (SE)	541	-	378835 423472
279	Contemporary Trad Name: Location: Classification: Status: Positional Accuracy:	Sewglass Products Ltd Unit 5, Elm Close, Haslingden, Rossendale, BB4 5QS Ropes & Hawsers Active Automatically positioned to the address	A9NW (SE)	542	-	378823 423443
	Contemporary Trad	, , , , , , , , , , , , , , , , , , ,				
279	Name: Location: Classification: Status:	Absolute Spill Kit Unit 1, Hargreaves Mill, Hargreaves Street, Rossendale, BB4 5RQ Hygiene & Cleansing Services Active Automatically positioned to the address	A9NW (SE)	542	-	378823 423443
	Contemporary Trad	e Directory Entries				
280	Name: Location: Classification: Status:	I D Catering Equipment Unit 10 Hud Hey Business Park,Hud Hey Road, Haslingden, Rossendale, Lancashire, BB4 5JH Catering Equipment Active	A18SE (N)	506	-	378536 424424
	Positional Accuracy:	Manually positioned within the geographical locality				
	Contemporary Trad	e Directory Entries				
280	Name: Location: Classification: Status:	Mpl Ltd Unit 4,Hud Hey Ind Est,Hud Hey Rd, Haslingden, Rossendale, Lancashire, BB4 5JH Drilling & Boring Equipment & Supplies Inactive Manually positioned within the geographical locality	A18SE (N)	506	-	378536 424424
	Contemporary Trad					
280	Name: Location: Classification: Status:	1st Class Finish Unit 2 Old Towns Yard Hud Hey rd, Haslingden, Rossendale, Lancashire, BB4 5JH Car Body Repairs Inactive	A18SE (N)	511	-	378557 424424
	-	Manually positioned to the road within the address or location				
281	Contemporary Trad Name: Location: Classification:	Peter Merriman Townsend Street Garage, Townsend Street, Haslingden, Rossendale, Lancashire, BB4 5DF Garage Services	A8NE (S)	509	-	378473 423187
	Status: Positional Accuracy:	Inactive Automatically positioned to the address				



Map ID		Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Contemporary Trad	le Directory Entries				
281	Name: Location: Classification: Status: Positional Accuracy:	Autocare Townsend St, Haslingden, Rossendale, Lancashire, BB4 5DF Garage Services Inactive Manually positioned within the geographical locality	A8NE (S)	509	-	378473 423187
	Contemporary Trad	le Directory Entries				
282	Name: Location: Classification: Status:	Mobile Link 38, Deardengate, Haslingden, Rossendale, Lancashire, BB4 5QJ Mobile Phone Accessories and Car Kits Inactive Automatically positioned to the address	A8NE (SE)	528	-	378602 423222
	Contemporary Trad	le Directory Entries				
282	Name: Location: Classification: Status: Positional Accuracy:	Wendy Nicola Cleaning Services 3, Pleasant Street, Haslingden, Rossendale, BB4 5LG Cleaning Services - Domestic Active Automatically positioned to the address	A8NE (SE)	535	-	378614 423220
	Contemporary Trad	le Directory Entries				
282	Name: Location: Classification: Status: Positional Accuracy:	J & M Mcintyre 14, Manchester Road, Haslingden, Rossendale, Lancashire, BB4 5ST Wallpapers & Wall Coverings Inactive Automatically positioned to the address	A8NE (SE)	567	-	378628 423191
	Contemporary Trad	le Directory Entries				
283	Name: Location: Classification: Status: Positional Accuracy:	Camel Cleaners 2, Martin Croft Road, Haslingden, Rossendale, Lancashire, BB4 5BP Engineering Services Inactive Automatically positioned to the address	A18SW (N)	528	-	378319 424478
	Contemporary Trad					
284	Name: Location: Classification: Status:	R & M Hayes Ltd Old Market Hall, Chapel Street, Haslingden, ROSSENDALE, Lancashire, BB4 5QR Footwear Manufacturers & Wholesale Inactive	A9NW (SE)	534	-	378765 423360
	Positional Accuracy:	Automatically positioned to the address				
285	Contemporary Trad Name: Location: Classification: Status: Positional Accuracy:	le Directory Entries T S Chemicals Ltd Unit 3a, Bentwood Road, Haslingden, Rossendale, BB4 5HH Chemical Manufacturers Active Automatically positioned to the address	A7NE (SW)	544	-	377986 423233
	Contemporary Trad					
285	Name: Location: Classification: Status:	Catering Equipment Solutions Unit 3a, Bentwood Road, Haslingden, Rossendale, Lancashire, BB4 5HH Catering Equipment Inactive Automatically positioned to the address	A7NE (SW)	544	-	377986 423233
	Contemporary Trad	le Directory Entries				
285	Name: Location: Classification: Status: Positional Accuracy:	Pro-Lite Projection Unit 3A, Bentwood Road, Haslingden, Rossendale, Lancashire, BB4 5HH Distribution Services Inactive Automatically positioned to the address	A7NE (SW)	544	-	377986 423233
	Contemporary Trad	le Directory Entries				
286	Name: Location: Classification: Status: Positional Accuracy:	Christal Clean 69, Deardengate, Rossendale, BB4 5SN Dry Cleaners Active Automatically positioned to the address	A8NE (S)	549	-	378565 423178
	Contemporary Trad	le Directory Entries				
287	Name: Location: Classification: Status:	L P S Packaging Supplies Unit 8, Hud Hey Industrial Estate, Hud Hey Road, Haslingden, Rossendale, Lancashire, BB4 5JH Packaging Materials Manufacturers & Suppliers Inactive Automatically positioned to the address	A18SE (N)	551	-	378581 424459



Map ID		Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Contemporary Trad	e Directory Entries				
287	Name: Location: Classification: Status: Positional Accuracy:	Spencer Synthetics Ltd Hud Hey Industrial Estate, Hud Hey Road, Haslingden, Rossendale, Lancashire, BB4 5JH Textile Manufacturing Active Automatically positioned to the address	A18SE (N)	551	-	378581 424459
	Contemporary Trad	· · · · · · · · · · · · · · · · · · ·				
287	Name: Location: Classification: Status:	A B Tyres Ltd Unit 4, Hud Hey Industrial Estate, Hud Hey Road, Haslingden, Rossendale, BB4 5JH Tyre Dealers Inactive	A18SE (N)	557	-	378589 424463
	Positional Accuracy:	Automatically positioned to the address				
287	Contemporary Trad Name: Location: Classification: Status: Positional Accuracy:	e Directory Entries Globe Recycling Services Ltd Unit 4, Hud Hey Industrial Estate, Hud Hey Road, Haslingden, Rossendale, BB4 5JH Tyre Disposal Active Automatically positioned to the address	A18SE (N)	557	-	378589 424463
	Contemporary Trad	e Directory Entries				
287	Name: Location: Classification: Status: Positional Accuracy:	Kens Garage Service Centre & M O T Station Unit 1, Hud Hey Industrial Estate, Hud Hey Road, Haslingden, Rossendale, BB4 5JH Garage Services Active Automatically positioned to the address	A18SE (N)	557	-	378589 424463
	Contemporary Trad	e Directory Entries				
287	Name: Location: Classification: Status:	Clayton Part Print Finishers Ltd Unit 2, Hud Hey Industrial Estate, Hud Hey Road, Rossendale, BB4 5JH Print Finishers Active Automatically positioned to the address	A18SE (N)	557	-	378589 424463
	Contemporary Trad	e Directory Entries				
287	Name: Location: Classification: Status: Positional Accuracy:	Premier Plant Engineering Unit 1A, Hud Hey Road, Haslingden, Rossendale, Lancashire, BB4 5JH Manufacturers Inactive Automatically positioned to the address	A18SE (NE)	562	-	378618 424458
	Contemporary Trade Directory Entries					
287	Name: Location: Classification: Status: Positional Accuracy:	Plastic Coatings Hud Hey Road, Haslingden, Rossendale, Lancashire, BB4 5LB Spraying - Paint & Coatings Inactive Automatically positioned to the address	A18SE (NE)	562	-	378618 424458
	Contemporary Trad	e Directory Entries				
287	Name: Location: Classification: Status: Positional Accuracy:	Tyre World Unit 11, Hud Hey Industrial Estate, Hud Hey Road, Haslingden, Rossendale, Lancashire, BB4 5JH Tyre Dealers Inactive Automatically positioned to the address	A18SE (NE)	562	-	378618 424458
	Contemporary Trad	•				
287	Name: Location: Classification: Status: Positional Accuracy:	Earnshaw International Spedition Unit 6, Hud Hey Road, Haslingden, Rossendale, Lancashire, BB4 5JH Road Haulage Services Inactive Automatically positioned to the address	A18SE (NE)	562	-	378618 424458
	Contemporary Trad					
288	Name: Location: Classification: Status: Positional Accuracy:	Townsend Street Garage Deardengate, Haslingden, Rossendale, Lancashire, BB4 5SN Tyre Dealers Inactive Manually positioned within the geographical locality	A8SE (S)	596	-	378561 423125
	Contemporary Trad	e Directory Entries				
289	Name: Location: Classification: Status:	Electrical Services Management Ltd The Yard, Chapel Street, Haslingden, Rossendale, Lancashire, BB4 5QR Electrical Engineers Inactive Automatically positioned to the address	A9NW (SE)	601	-	378868 423400



Map ID		Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Contemporary Trad	-				
289	Name: Location: Classification: Status: Positional Accuracy:	I P C The Yard, Chapel Street, Haslingden, Rossendale, Lancashire, BB4 5QR Electrical Engineers Inactive Automatically positioned to the address	A9NW (SE)	601	-	378868 423400
	Contemporary Trad	e Directory Entries				
290	Name: Location: Classification: Status: Positional Accuracy:	Boxes & Packaging Plantation Mill, Flip Road, Haslingden, Rossendale, Lancashire, BB4 5EJ Boxes & Cartons Inactive Automatically positioned to the address	A8SW (S)	606	-	378067 423130
	Contemporary Trad	e Directory Entries				
291	Name: Location: Classification: Status:	Premier Plant Engineering Unit 6, Hud Hey Industrial Estate, Hud Hey Road, Haslingden, Rossendale, Lancashire, BB4 5JH Plant & Machinery Manufacturers Inactive	A19NW (NE)	627	-	378695 424497
		Automatically positioned to the address				
292	Contemporary Trad Name: Location: Classification: Status: Positional Accuracy:	Best Valley Doors 25, Manchester Road, Haslingden, Rossendale, BB4 5SL Door Manufacturers - Domestic Active Automatically positioned to the address	A8SE (SE)	658	-	378660 423105
	Contemporary Trad					
293	Name: Location: Classification: Status:	Print Clothes Haslingden, Rossendale, Lancashire, BB4 5EB T-Shirts Active Manually positioned to the address or location	A8SE (S)	676	-	378539 423032
	Contemporary Trad	e Directory Entries				
293	Name: Location: Classification: Status: Positional Accuracy:	G & N Auto Co Ltd Helmshore Road, Haslingden, Rossendale, Lancashire, BB4 4BG Garage Services Active Automatically positioned to the address	A8SE (S)	699	-	378564 423016
	Contemporary Trad					
294	Name: Location: Classification: Status: Positional Accuracy:	Premier Transport Services 48-50, Manchester Road, Haslingden, Rossendale, Lancashire, BB4 5ST Road Haulage Services Inactive Automatically positioned to the address	A9SW (SE)	699	-	378714 423090
	Contemporary Trad	e Directory Entries				
295	Name: Location: Classification: Status: Positional Accuracy:	Busby Grane Road Mill, Haslingden, Rossendale, Lancashire, BB4 5EF Textile Manufacturing Active Manually positioned within the geographical locality	A8SE (S)	721	-	378415 422960
	Contemporary Trad	e Directory Entries				
296	Name: Location: Classification: Status: Positional Accuracy:	D White Flip Rd, Haslingden, Rossendale, Lancashire, BB4 5EJ Car Body Repairs Inactive Manually positioned to the road within the address or location	A8SW (S)	732	-	378065 422996
	Contemporary Trad					
297	Name: Location: Classification: Status:	Texaco Helmshore Road, Helmshore, Rossendale, Lancashire, BB4 4JR Petrol Filling Stations Inactive Manually positioned to the address or location	A8SE (S)	735	-	378562 422977
	Contemporary Trad					
297	Name: Location: Classification: Status:	Texaco Helmshore Road, Haslingden, Rossendale, Lancashire, BB4 4BG Petrol Filling Stations Inactive Automatically positioned to the address	A8SE (S)	738	-	378575 422979



Map ID		Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Contemporary Trad	le Directory Entries				
297	Name: Location: Classification: Status:	Texaco Helmshore Road, Helmshore, Rossendale, Lancashire, BB4 4JR Petrol Filling Stations Active Manually positioned to the address or location	A8SE (S)	741	-	378576 422976
	Contemporary Trad	le Directory Entries				
297	Name: Location: Classification: Status:	Star Forecourts Helmshore Road, Haslingden, Rossendale, BB4 4BG Petrol Filling Stations - 24 Hour Active Automatically positioned to the address	A8SE (S)	741	-	378576 422976
	Contemporary Trad	le Directory Entries				
297	Name: Location: Classification: Status:	Helmshore Road Garage 1, Helmshore Road, Haslingden, Rossendale, Lancashire, BB4 4BG Garage Services Inactive Automatically positioned to the address	A8SE (S)	752	-	378558 422959
	Contemporary Trad	le Directory Entries				
298	Name: Location: Classification: Status: Positional Accuracy:	H E R Quality Shavings Ltd Duckworth Clough, Haslingden, Rossendale, Lancashire, BB4 5AW Sawmills & Wood Shavings Inactive Manually positioned to the address or location	A19SE (NE)	735	-	379015 424368
	Contemporary Trad	le Directory Entries				
299	Name: Location: Classification: Status: Positional Accuracy:	G & J Contract Cleaning 23, Piccadilly Street, Haslingden, Rossendale, Lancashire, BB4 5LU Cleaning Services - Commercial Inactive Automatically positioned to the address	A9NW (SE)	748	-	378907 423196
	Contemporary Trad	le Directory Entries				
300	Name: Location: Classification: Status: Positional Accuracy:	Wavel Motors Bury Rd, Haslingden, Rossendale, Lancashire, BB4 5PG Garage Services Inactive Manually positioned to the road within the address or location	A9SW (SE)	766	-	378848 423108
	Contemporary Trad					
301	Name: Location: Classification: Status:	The Filter Co Ltd Unit 4,Three Point Business Park,Charles La, Haslingden, Rossendale, Lancashire, BB4 5EH Filter Manufacturers & Suppliers Inactive Automatically positioned to the address	A8SW (S)	818	-	378284 422860
	Contemporary Trad	le Directory Entries				
301	Name: Location: Classification: Status: Positional Accuracy:	L E D Controls Unit 10, Three Point Business Park, Charles Lane, Haslingden, Rossendale, Lancashire, BB4 5EH Distribution Services Inactive Automatically positioned to the address	A8SW (S)	830	-	378308 422847
	Contemporary Trad	le Directory Entries				
301	Name: Location:	L E D Controls Factory Automation Unit 10, Three Point Business Park, Charles Lane, Haslingden, Rossendale, Lancashire. BB4 5EH	A8SW (S)	830	-	378308 422847
	Classification: Status: Positional Accuracy:	Electronic Component Manufacturers & Distributors Active Automatically positioned to the address				
	Contemporary Trad	le Directory Entries				
301	Name: Location: Classification: Status:	Howdens Unit 2, Three Point Business Park, Charles Lane, Haslingden, Rossendale, Lancashire, BB4 5EH Builders' Merchants Inactive Automatically positioned to the address	A8SW (S)	830	-	378308 422847
	Contemporary Trad	le Directory Entries				
301	Name: Location: Classification: Status:	Packaging Supplies Uk Unit 10, Three Point Business Park, Charles Lane, Haslingden, Rossendale, Lancashire, BB4 5EH Packaging Materials Manufacturers & Suppliers Inactive Automatically positioned to the address	A8SW (S)	830	-	378308 422847



Map ID		Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
302	Contemporary Trad Name: Location: Classification: Status: Positional Accuracy:	e Directory Entries Stick With Us Unit 15, Springvale Mill, Waterside Road, Haslingden, Rossendale, BB4 5EZ Adhesives, Glues & Sealants Active Automatically positioned to the address	A8SW (S)	824	-	378161 422871
302	Contemporary Trad Name: Location: Classification: Status: Positional Accuracy:	e Directory Entries Platters Slate Unit 20, Springvale Mill, Waterside Road, Haslingden, Rossendale, BB4 5EZ Slate & Slate Products Active Automatically positioned to the address	A8SW (S)	824	-	378161 422871
302	Contemporary Trad Name: Location: Classification: Status: Positional Accuracy:	e Directory Entries Colourfolio Ltd Unit 6, Springvale Mill, Waterside Road, Haslingden, Rossendale, Lancashire, BB4 5EZ Printers Inactive Automatically positioned to the address	A8SW (S)	824	-	378161 422871
302	Contemporary Trad Name: Location: Classification: Status: Positional Accuracy:	e Directory Entries Gregory'S Of Helmshore Ltd Unit 22, Springvale Mill, Waterside Road, Haslingden, Rossendale, Lancashire, BB4 5EZ Cabinet Makers Active Automatically positioned to the address	A8SW (S)	824	-	378161 422871
302	Contemporary Trad Name: Location: Classification: Status: Positional Accuracy:	e Directory Entries Harval Engineering Unit 21, Springvale Mill, Waterside Road, Haslingden, Rossendale, Lancashire, BB4 5EZ Precision Engineers Inactive Automatically positioned to the address	A8SW (S)	824	-	378161 422871
302	Contemporary Trad Name: Location: Classification: Status: Positional Accuracy:	e Directory Entries Waterside Textiles Unit 9, Springvale Mill, Waterside Road, Haslingden, Rossendale, Lancashire, BB4 5EZ Soft Furnishings - Manufacturers Inactive Automatically positioned to the address	A8SW (S)	824	-	378161 422871
302	Contemporary Trad Name: Location: Classification: Status: Positional Accuracy:	e Directory Entries Millennium Blinds Ltd Unit 5d, Springvale Mill, Waterside Road, Haslingden, Rossendale, BB4 5EZ Blinds, Awnings & Canopies Active Automatically positioned to the address	A8SW (S)	824	-	378161 422871
302	Contemporary Trad Name: Location: Classification: Status: Positional Accuracy:	e Directory Entries Sprint Services Unit 18, Springvale Mill, Waterside Road, Haslingden, Rossendale, Lancashire, BB4 5EZ Print Finishers Inactive Automatically positioned to the address	A8SW (S)	824	-	378161 422871
302	Contemporary Trad Name: Location: Classification: Status: Positional Accuracy:	e Directory Entries Protofab Ltd Unit 22, Springvale Mill, Waterside Road, Haslingden, ROSSENDALE, Lancashire, BB4 5EZ Sheet Metal Work Inactive Automatically positioned to the address	A8SW (S)	824	-	378161 422871
302	Contemporary Trad Name: Location: Classification: Status:	•	A8SW (S)	824	-	378161 422871
302	Contemporary Trad Name: Location: Classification: Status:		A8SW (S)	824	-	378161 422871



Map ID		Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Contemporary Trad	e Directory Entries				
302	Name: Location: Classification: Status: Positional Accuracy:	Palamar Unit 4, Springvale Mill, Waterside Road, Haslingden, Rossendale, Lancashire, BB4 5EZ Cable & Wire Equipment Manufacturers Inactive Automatically positioned to the address	A8SW (S)	824	-	378161 422871
	Contemporary Trad					
302	Name: Location: Classification: Status:	Paul Andrew Design Rossendale, BB4 5EZ Soft Furnishings - Manufacturers Active Automatically positioned to the address	A8SW (S)	824	-	378161 422871
	Contemporary Trad	e Directory Entries				
302	Name: Location: Classification: Status:	Riverside Polishing Unit 16e,Springvale Mill,Waterside Rd, Haslingden, Rossendale, Lancashire, BB4 5EZ Metal Finishing Services Inactive	A8SW (S)	825	-	378160 422870
	-	Manually positioned to the address or location				
302	Contemporary Trad Name: Location: Classification: Status: Positional Accuracy:	e Directory Entries Gamma Technology Springvale Mill, Waterside Rd, Haslingden, Rossendale, Lancashire, BB4 5EZ Computer Manufacturers Inactive Manually positioned to the address or location	A8SW (S)	825	-	378161 422870
	Contemporary Trad	e Directory Entries				
302	Name: Location: Classification: Status: Positional Accuracy:	Hurst Platt Display Ltd Flip Rd, Haslingden, Rossendale, Lancashire, BB4 5EJ Shop Fittings Manufacturers Inactive Manually positioned to the address or location	A8SW (S)	825	-	378160 422870
	Contemporary Trad					
302	Name: Location: Classification: Status:	Digital Insight Springvale Mill, Waterside Rd, Haslingden, Rossendale, Lancashire, BB4 5EZ Printers Inactive Manually positioned to the address or location	A8SW (S)	825	-	378160 422870
	Contemporary Trad	e Directory Entries				
302	Name: Location: Classification: Status:	Digital Insight Springvale Mill, Waterside Rd, Haslingden, Rossendale, Lancashire, BB4 5EZ Printers Inactive Manually positioned to the address or location	A8SW (S)	825	-	378161 422870
	Contemporary Trad	e Directory Entries				
302	Name: Location: Classification: Status: Positional Accuracy:	Stateside Foods 5B-C,Unit,Springvale Mill,Waterside Rd, Haslingden, Rossendale, Lancashire, BB4 5EZ Food Products - Manufacturers Inactive Manually positioned within the geographical locality	A8SW (S)	869	-	378158 422825
	Contemporary Trad	e Directory Entries				
303	Name: Location: Classification: Status: Positional Accuracy:	Inter Cover Ltd Unit 17, Three Point Business Park, Charles Lane, Haslingden, Rossendale, Lancashire, BB4 5EH Bookbinding & Equipment Inactive Automatically positioned to the address	A8SW (S)	828	-	378243 422853
303	Contemporary Trad Name: Location: Classification:	e Directory Entries E B K Unit 16, Three Point Business Park, Charles Lane, Haslingden, Rossendale, Lancashire, BB4 5EH Petrol Pump Manufacturers & Suppliers	A8SW (S)	828	-	378243 422853
	Status:	Inactive Automatically positioned to the address				
	-					
303	Contemporary Trad Name: Location: Classification: Status:	Forward Freight Services Ltd Unit 3, Waterside Road, Haslingden, Rossendale, Lancashire, BB4 5EN Freight Forwarders Inactive Automatically positioned to the address	A8SW (S)	855	-	378224 422828



Map ID		Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Contemporary Trad	e Directory Entries				
303	Name: Location: Classification: Status: Positional Accuracy:	Waterside Auto Centre Unit 1, Waterside Road, Haslingden, Rossendale, BB4 5EN Garage Services Active Automatically positioned to the address	A3NW (S)	890	-	378211 422795
	Contemporary Trad	Contemporary Trade Directory Entries				
304	Name: Location: Classification: Status:	Hardy Utility Services St. Crispin House, 4, St. Crispin Way, Haslingden, Rossendale, Lancashire, BB4 4PW Mechanical Engineers Inactive	A8SW (S)	828	-	378041 422902
		Automatically positioned to the address				
304	Contemporary Trad Name: Location: Classification: Status: Positional Accuracy:	e Directory Entries P C B Machinery International Ltd Unit 4, Bradwood Court, St. Crispin Way, Haslingden, Rossendale, Lancashire, BB4 4PW Printed Circuit Services Inactive Automatically positioned to the address	A8SW (S)	846	-	378016 422892
	Contemporary Trad					
305	Name: Location: Classification: Status:	Hutchbank Farm Feeds 42 Grane Rd, Haslingden, Rossendale, Lancashire, BB4 5EB Pet Foods & Animal Feeds Inactive Manually positioned to the road within the address or location	A8SE (S)	837	-	378411 422843
	Contemporary Trad	e Directory Entries				
306	Name: Location: Classification: Status: Positional Accuracy:	John Entwistle Light Engineering 12, Willow Street, Haslingden, Rossendale, Lancashire, BB4 5NA Engineering Materials Active Automatically positioned to the address	A9SW (SE)	848	-	378922 423065
	Contemporary Trad	Contemporary Trade Directory Entries				
307	Name: Location: Classification: Status: Positional Accuracy:	Sunny Pools North Ltd 1, Ryefield Avenue West, Haslingden, Rossendale, Lancashire, BB4 4BL Swimming Pool Contractors, Repairers & Service Inactive Automatically positioned to the address	A8SE (S)	860	-	378580 422852
	Contemporary Trad	e Directory Entries				
308	Name: Location: Classification: Status: Positional Accuracy:	A C Truck Spares 85, Grane Road, Haslingden, ROSSENDALE, Lancashire, BB4 5ED Commercial Vehicle Servicing, Repairs, Parts & Accessories Inactive Automatically positioned to the address	A8SE (S)	868	-	378378 422809
	Contemporary Trad	e Directory Entries				
308	Name: Location: Classification: Status:	Rossendale Road Springs Ltd Grane Road, Haslingden, Rossendale, Lancashire, BB4 5HA Spring Manufacturers & Distributors Active Automatically positioned to the address	A3NE (S)	891	-	378409 422788
	Contemporary Trad	e Directory Entries				
308	Name: Location: Classification: Status:	Greenwoods Engineering Grane Road, Haslingden, Rossendale, Lancashire, BB4 5HA Engine Rebuilding & Reconditioning Inactive Automatically positioned to the address	A3NE (S)	891	-	378409 422788
	Contemporary Trad	* *				
309	Name: Location: Classification: Status:	Etyres Bolton 435, Blackburn Road, Acre, Rossendale, Lancashire, BB4 5AT Tyre Dealers Inactive Automatically positioned to the address	A19NW (N)	876	-	378704 424761
	Contemporary Trad	* 1				
309	Name: Location: Classification: Status:	E Tyres Bolton 435, Blackburn Road, Acre, Rossendale, BB4 5AT Tyre Repairs & Retreading Inactive Automatically positioned to the address	A19NW (N)	876	-	378703 424761



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Map ID		Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR		
	Contemporary Trad	e Directory Entries						
310	Name: Location: Classification: Status:	The Real Lancashire Black Pudding Unit 4, Waterside Road, Haslingden, Rossendale, Lancashire, BB4 5EN Meat Product Manufacturers & Wholesalers Inactive Automatically positioned to the address	A8SW (S)	876	-	378282 422802		
	Contemporary Trade Directory Entries							
310	Name: Location: Classification: Status:	Real Lancashire Blackpudding Unit 4, Waterside Road, Haslingden, Rossendale, Lancashire, BB4 5EN Food Products - Manufacturers Inactive Automatically positioned to the address	A3NW (S)	896	-	378271 422783		
	Contemporary Trad	e Directory Entries						
311	Name: Location: Classification: Status:	Als (Sales & Service) Ltd 14, Ryefield Avenue West, Haslingden, Rossendale, Lancashire, BB4 4BL Engineers - General Inactive Automatically positioned to the address	A8SE (S)	879	-	378474 422808		
	Contemporary Trad	e Directory Entries						
312	Name: Location: Classification: Status:	Kempner Marketing Ltd Unit 1a, Bradwood Court, St. Crispin Way, Haslingden, Rossendale, Lancashire, BB4 4PW Packaging & Wrapping Equipment & Supplies Inactive Automatically positioned to the address	A8SW (S)	901	-	378018 422832		
	Contemporary Trad	e Directory Entries						
313	Name: Location: Classification: Status:	Rospen Industries Unit 7, Waterside Road, Haslingden, Rossendale, BB4 5EN Engineers - General Active Automatically positioned to the address	A3NW (S)	949	-	378229 422733		
	-							
314	Contemporary Trad Name: Location: Classification: Status: Positional Accuracy:	Home N Dry (Ford), Top O Th Bank Farm, Kings Highway, Acre, Rossendale, BB4 5TZ Carpet, Curtain & Upholstery Cleaners Active Automatically positioned to the address	A19NW (NE)	973	-	378844 424808		
	Contemporary Trad	e Directory Entries						
315	Name: Location: Classification: Status:	Flexipol Packaging Ltd 2, St. Crispin Way, Haslingden, Rossendale, BB4 4PW Paper & Cardboard Products & Packaging - Manufacturers Active Automatically positioned to the address	A3NW (S)	977	-	378031 422748		
	Contemporary Trad	e Directory Entries						
316	Name: Location: Classification: Status:	L & S Wrigley 51, Rising Bridge Road, Haslingden, Rossendale, Lancashire, BB4 5BL Road Haulage Services Inactive Automatically positioned to the address	A23SE (N)	998	-	378364 424948		
	Fuel Station Entries	3						
317	Name: Location: Brand: Premises Type: Status: Positional Accuracy:	Haslingden Service Station Blackburn Road , Haslingden , Rossendale, Lancashire, BB4 5QG Texaco Petrol Station Open Manually positioned to the address or location	A8NE (S)	423	-	378532 423302		
	Fuel Station Entries	;						
318	Name: Location: Brand: Premises Type: Status:	Star Garage Helmshore Road , Haslingden , Rossendale, Lancashire, BB4 4BG Texaco Petrol Station Open Manually positioned to the address or location	A8SE (S)	741	-	378576 422976		
	Points of Interest -	Commercial Services						
319	Name: Location: Category: Class Code:	Lodge Sheet Metal Fabrications Ltd Vine Grove Works Carrs Industrial Estate, Commerce Street, Haslingden, Rossendale, BB4 5JT Construction Services Metalworkers Including Blacksmiths Positioned to address or location	A13SE (S)	71	8	378371 423616		



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Map ID		Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Points of Interest - 0	Commercial Services				
319	Name: Location: Category: Class Code: Positional Accuracy:	Lodge Sheet Metal Carrs Industrial Estate, Commerce Street, Haslingden, Rossendale, BB4 5JT Construction Services Metalworkers Including Blacksmiths Positioned to address or location	A13SE (SE)	94	8	378432 423668
	Points of Interest - 0	Commercial Services				
320	Name: Location: Category: Class Code: Positional Accuracy:	G Holt Mechanical Services Prinny Mill Business Centre, Blackburn Road, Haslingden, Rossendale, BB4 5HL Repair and Servicing Vehicle Repair, Testing and Servicing Positioned to address or location	A8NE (S)	230	8	378430 423467
	Points of Interest - 0	Commercial Services				
320	Name: Location: Category: Class Code: Positional Accuracy:	Reid Atkinson Ltd Prinny Mill Business Centre, 68 Blackburn Road, Haslingden, Rossendale, BB4 5HL Transport, Storage and Delivery Distribution and Haulage Positioned to address or location	A8NE (S)	243	8	378431 423454
	Points of Interest - 0	Commercial Services				
321	Name: Location: Category: Class Code: Positional Accuracy:	Tarox Unit 9 Taylors Court, Todd Hall Road, Haslingden, Rossendale, BB4 5LA Repair and Servicing Vehicle Repair, Testing and Servicing Positioned to address or location	A13SW (SW)	233	8	378186 423483
	Points of Interest - 0	Commercial Services				
321	Name: Location: Category: Class Code: Positional Accuracy:	Tarox Unit 9 Taylors Court, Todd Hall Road, Haslingden, Rossendale, BB4 5LA Transport, Storage and Delivery Distribution and Haulage Positioned to address or location	A13SW (SW)	233	8	378186 423484
	Points of Interest - 0					
321	Name: Location: Category: Class Code: Positional Accuracy:	Tarox Unit 9 Taylors Court, Todd Hall Road, Haslingden, Rossendale, BB4 5LA Repair and Servicing Vehicle Repair, Testing and Servicing Positioned to address or location	A13SW (SW)	233	8	378186 423484
	Points of Interest - 0	Commercial Services				
322	Name: Location: Category: Class Code: Positional Accuracy:	Hudrake Motors Hudrake Mill, Hudrake, Haslingden, Rossendale, BB4 5AL Repair and Servicing Vehicle Repair, Testing and Servicing Positioned to address or location	A14NW (NE)	292	8	378712 423977
	Points of Interest - 0	Commercial Services				
322	Name: Location: Category: Class Code: Positional Accuracy:	Hudrake Motors Hudrake Mill, Hudrake, Haslingden, Rossendale, BB4 5AL Repair and Servicing Vehicle Repair, Testing and Servicing Positioned to address or location	A14NW (NE)	292	8	378712 423976
	Points of Interest - 0	Commercial Services				
323	Name: Location: Category: Class Code: Positional Accuracy:	Bill Meynell Haulage 157 Hudrake, Haslingden, Rossendale, BB4 5AL Transport, Storage and Delivery Distribution and Haulage Positioned to address or location	A14NW (NE)	353	8	378707 424142
	Points of Interest - 0	Commercial Services				
323	Name: Location: Category: Class Code: Positional Accuracy:	Bill Meynell 157 Hudrake, Haslingden, Rossendale, BB4 5AL Transport, Storage and Delivery Distribution and Haulage Positioned to address or location	A14NW (NE)	354	8	378707 424143
	Points of Interest - 0	Commercial Services				
324	Name: Location: Category: Class Code: Positional Accuracy:	Fab Services Unit 2, Bentwood Road, Haslingden, Rossendale, Lancashire, BB4 5HH Construction Services Metalworkers Including Blacksmiths Positioned to address or location	A8NW (S)	383	8	378162 423332



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Map ID		Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Points of Interest - 0	Commercial Services				
324	Name: Location: Category: Class Code: Positional Accuracy:	Fab Serv Unit 2, Bentwood Rd, Haslingden, Rossendale, Lancashire, BB4 5HH Construction Services Metalworkers Including Blacksmiths Positioned to address or location	A8NW (S)	389	8	378160 423326
325	Name: Location: Category: Class Code:	Commercial Services Lincoln Street Garage 12 Lincoln Street, Haslingden, Rossendale, BB4 5DT Repair and Servicing Vehicle Repair, Testing and Servicing Positioned to address or location	A8NE (S)	391	8	378370 423287
326	Name: Location: Category: Class Code:	Commercial Services Haslingden Service Station Blackburn Road, Haslingden, Rossendale, BB4 5QG Personal, Consumer and other Services Vehicle Cleaning Services Positioned to address or location	A8NE (S)	423	8	378532 423302
326	Name: Location: Category: Class Code:	Commercial Services Car Wash Blackburn Road, Haslingden, Rossendale, BB4 5QG Personal, Consumer and other Services Vehicle Cleaning Services Positioned to address or location	A8NE (S)	423	8	378532 423302
327	Points of Interest - (Name: Location: Category:	Commercial Services J D H Motor Repairs Unit 5 Hud Hey Industrial Estate, Hud Hey Road, Haslingden, Rossendale, BB4 5JH Repair and Servicing	A18SE (NE)	463	8	378578 424367
	Class Code:	Vehicle Repair, Testing and Servicing Positioned to address or location				
328	Name: Location: Category: Class Code:	Commercial Services Fabserv Unit 1-2, Underbank Way, Haslingden, Rossendale, BB4 5HR Construction Services Metalworkers Including Blacksmiths Positioned to address or location	A7NE (SW)	479	8	377968 423322
328	Name: Location: Category: Class Code:	Commercial Services Innovative Nail Kreations Ltd Unit 3, Underbank Way, Haslingden, Rossendale, BB4 5HR Transport, Storage and Delivery Distribution and Haulage Positioned to address or location	A7NE (SW)	491	8	377972 423305
329	Name: Location: Category: Class Code:	Commercial Services Scrap Yard Not Supplied Recycling Services Scrap Metal Merchants Positioned to an adjacent address or location	A18SE (N)	490	8	378490 424420
329	Name: Location: Category: Class Code:	Commercial Services Scrap Yard BB4 Recycling Services Scrap Metal Merchants Positioned to address or location	A18SE (N)	494	8	378487 424424
330	Name: Location: Category: Class Code:	Commercial Services Haslingdon Autocare Townsend Street, Haslingden, Rossendale, BB4 5DF Repair and Servicing Vehicle Repair, Testing and Servicing Positioned to address or location	A8NE (S)	509	8	378473 423187
330	Name: Location: Category: Class Code:	Commercial Services Auto Fast Fix Townsend Street, Haslingden, Rossendale, BB4 5DF Repair and Servicing Vehicle Repair, Testing and Servicing Positioned to address or location	A8NE (S)	509	8	378473 423187



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Map ID		Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Points of Interest - 0	Commercial Services				
330	Name: Location:	Peter Merriman Townsend Street Garage, Townsend Street, Haslingden, Rossendale, BB4 5DF	A8NE (S)	509	8	378473 423187
	Category: Class Code: Positional Accuracy:	Repair and Servicing Vehicle Repair, Testing and Servicing Positioned to address or location				
	Points of Interest - 0	Commercial Services				
331	Name: Location: Category:	Globe Recycling Services Ltd Unit 4 Hud Hey Industrial Estate, Hud Hey Road, Haslingden, Rossendale, BB4 5JH Recycling Services	A18SE (N)	557	8	378589 424463
	Class Code: Positional Accuracy:	Recycling, Reclamation and Disposal Positioned to address or location				
	Points of Interest - 0	Commercial Services				
331	Name: Location: Category: Class Code: Positional Accuracy:	Ken's Garage Hud Hey Industrial Estate, Hud Hey Road, Haslingden, Rossendale, BB4 5JH Repair and Servicing Vehicle Repair, Testing and Servicing Positioned to address or location	A18SE (NE)	562	8	378618 424458
	Points of Interest - 0	Commercial Services				
331	Name: Location: Category: Class Code: Positional Accuracy:	Spencer Synthetics Ltd Hud Hey Industrial Estate, Hud Hey Road, Haslingden, Rossendale, BB4 5JH Recycling Services Recycling, Reclamation and Disposal Positioned to address or location	A18SE (NE)	562	8	378618 424458
	Points of Interest - 0	Commercial Services				
331	Name: Location: Category:	Kens Garage Unit 1 Hud Hey Industrial Estate, Hud Hey Road, Haslingden, Rossendale, Lancashire, BB4 5JH Repair and Servicing	A18SE (NE)	562	8	378618 424458
	Class Code:	Vehicle Repair, Testing and Servicing Positioned to address or location				
	Points of Interest - 0					
331	Name: Location: Category:	Kens Garage Service Centre & M O T Station Unit 1 Hud Hey Industrial Estate, Hud Hey Road, Haslingden, Rossendale, BB4 5JH Repair and Servicing	A18SE (NE)	562	8	378617 424458
	Class Code:	Vehicle Repair, Testing and Servicing Positioned to address or location				
	-	Commercial Services				
332	Name: Location: Category: Class Code:	New Street Garage 10 New Street, Haslingden, Rossendale, BB4 5TA Repair and Servicing Vehicle Repair, Testing and Servicing	A8SE (S)	617	8	378614 423127
	,	Positioned to address or location				
332	Name: Location: Category: Class Code:	Commercial Services New Street Garage 10 New Street, Haslingden, Rossendale, BB4 5TA Repair and Servicing Vehicle Repair, Testing and Servicing Positioned to address or location	A8SE (S)	617	8	378613 423126
	Points of Interest - 0	Commercial Services				
332	Name: Location: Category: Class Code: Positional Accuracy:	New Street Garage 10 New Street, Haslingden, Rossendale, BB4 5TA Repair and Servicing Vehicle Repair, Testing and Servicing Positioned to address or location	A8SE (S)	617	8	378614 423127
	-	Commercial Services				
333	Name: Location: Category: Class Code:	G & N Auto Co Ltd Helmshore Road, Haslingden, Rossendale, BB4 4BG Repair and Servicing Vehicle Repair, Testing and Servicing Positioned to address or location	A8SE (S)	699	8	378564 423016
	Points of Interest - 0	Commercial Services				
333	Name: Location: Category: Class Code:	G & Auto Helmshore Road, Haslingden, Rossendale, BB4 4BG Repair and Servicing Vehicle Repair, Testing and Servicing	A8SE (S)	699	8	378564 423016



Map ID	Detai	ils	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
333	Points of Interest - Commercial Services Name: G & N Autoco Ltd Location: Helmshore Road, Haslingden Category: Repair and Servicing Class Code: Vehicle Repair, Testing and S Positional Accuracy: Positioned to address or locate	Servicing	A8SE (S)	699	8	378564 423016
333	Points of Interest - Commercial Services Name: Star Garage Location: Helmshaw Road, Haslingden, Category: Personal, Consumer and othe Class Code: Vehicle Cleaning Services Positional Accuracy: Positioned to address or locate	er Services	A8SE (S)	718	8	378565 422996
333	Points of Interest - Commercial Services Name: Car Wash Location: Helmshaw Road, Haslingden, Category: Personal, Consumer and othe Class Code: Vehicle Cleaning Services Positional Accuracy: Positioned to address or locat		A8SE (S)	736	8	378562 422976
334	Points of Interest - Commercial Services Name: Premier Transport Services Location: 48-50 Manchester Road, Has Category: Transport, Storage and Delive Class Code: Distribution and Haulage Positional Accuracy: Positioned to address or locate		A9SW (SE)	699	8	378714 423090
335	Points of Interest - Commercial Services Name: Protofab Ltd Location: Unit 22 Springvale Mill, Wate Category: Construction Services Class Code: Metalworkers Including Black: Positional Accuracy: Positioned to address or locations.		A8SW (S)	824	8	378161 422871
335	Points of Interest - Commercial Services Name: D Chapburn Location: Unit 17 Springvale Mill, Wate Category: Repair and Servicing Class Code: Vehicle Repair, Testing and S Positional Accuracy: Positioned to address or local		A8SW (S)	824	8	378161 422871
335	Points of Interest - Commercial Services Name: Protofab Ltd Location: Unit 22 Springvale Mill, Wate Category: Construction Services Class Code: Metalworkers Including Black: Positional Accuracy: Positioned to address or local		A8SW (S)	824	8	378161 422871
335	Points of Interest - Commercial Services Name: L E D Controls Location: Unit 10 Three Point Business B84 5EH Category: Transport, Storage and Delive Class Code: Distribution and Haulage Positional Accuracy: Positioned to address or locat		A8SW (S)	830	8	378308 422847
335	Points of Interest - Commercial Services Name: Forward Freight Services Ltd Location: Unit 3, Waterside Road, Hasl Category: Transport, Storage and Delive Class Code: Distribution and Haulage Positional Accuracy: Positioned to address or locate		A8SW (S)	855	8	378224 422828
335	Points of Interest - Commercial Services Name: Forward Freight Services Ltd Location: Unit 3 Waterside Road, Haslii Category: Transport, Storage and Delive Class Code: Distribution and Haulage Positional Accuracy: Positioned to address or locations.	•	A8SW (S)	855	8	378224 422828
335	Points of Interest - Commercial Services Name: Waterside Auto Centre Location: Unit 1, Waterside Road, Hasl Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or locations.		A3NW (S)	891	8	378211 422794
336	Points of Interest - Commercial Services Name: Greenwoods Engineering Location: 42 Grane Road, Haslingden, Category: Repair and Servicing Class Code: Vehicle Repair, Testing and S Positional Accuracy: Positioned to address or local	Servicing	A8SE (S)	857	8	378425 422824

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Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Points of Interest - Commercial Services				
336	Name: A C Truck Spares Location: 85 Grane Road, Haslingden, Rossendale, BB4 5ED Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A8SE (S)	868	8	378378 422809
336	Points of Interest - Commercial Services Name: A C Truck Spares Location: 85 Grane Road, Haslingden, Rossendale, BB4 5ED Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A8SE (S)	868	8	378378 422809
336	Points of Interest - Commercial Services Name: Rossendale Road Springs Ltd Location: Grane Road, Haslingden, Rossendale, BB4 5HA Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A3NE (S)	891	8	378409 422788
336	Points of Interest - Commercial Services Name: Greenwoods Engineering Location: Grane Road, Haslingden, Rossendale, BB4 5HA Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing	A3NE (S)	891	8	378409 422788
	Positional Accuracy: Positioned to address or location				
336	Points of Interest - Commercial Services Name: Rossendale Road Springs Ltd Location: Grane Road, Haslingden, Rossendale, BB4 5HA Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A3NE (S)	891	8	378409 422788
337	Points of Interest - Commercial Services Name: E Tyres Bolton Location: 435 Blackburn Road, Acre, Rossendale, BB4 5AT Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A19NW (N)	876	8	378703 424761
338	Points of Interest - Commercial Services Name: Universal Componets Location: Unit 7, Waterside Road, Haslingden, Rossendale, BB4 5EN Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A3NW (S)	949	8	378229 422733
338	Points of Interest - Commercial Services Name: Pollard Beaumont Ltd Location: Unit 7, Waterside Road, Haslingden, Rossendale, BB4 5EN Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A3NW (S)	949	8	378229 422733
339	Points of Interest - Commercial Services Name: Bell Micro Location: 2 St. Crispin Way, Haslingden, Rossendale, BB4 4PW Category: Transport, Storage and Delivery Class Code: Distribution and Haulage Positional Accuracy: Positioned to address or location	A3NW (S)	977	8	378030 422748
340	Points of Interest - Manufacturing and Production Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A13SW (S)	63	8	378269 423634
340	Points of Interest - Manufacturing and Production Name: Works Location: BB4 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A13SW (SW)	65	8	378265 423633
341	Points of Interest - Manufacturing and Production Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A13NE (NE)	84	8	378487 423986



Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
341	Points of Interest - Manufacturing and Production Name: Works Location: BB4 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A13NE (NE)	88	8	378491 423987
341	Points of Interest - Manufacturing and Production Name: Works Location: BB4 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A13NE (NE)	89	8	378512 423926
341	Points of Interest - Manufacturing and Production Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A13NE (NE)	92	8	378515 423928
342	Points of Interest - Manufacturing and Production Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A13NE (E)	84	8	378497 423876
342	Points of Interest - Manufacturing and Production Name: Works Location: BB4 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A13NE (E)	85	8	378498 423873
342	Points of Interest - Manufacturing and Production Name: Tank Location: BB4 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A13NE (E)	94	8	378508 423877
342	Points of Interest - Manufacturing and Production Name: Works Location: BB4 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A13NE (E)	98	8	378512 423876
343	Points of Interest - Manufacturing and Production Name: Works Location: BB4 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A13SE (SE)	88	8	378423 423662
343	Points of Interest - Manufacturing and Production Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A13SE (SE)	92	8	378427 423662
343	Points of Interest - Manufacturing and Production Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A13SE (SE)	135	8	378485 423689
343	Points of Interest - Manufacturing and Production Name: Works Location: BB4 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A13SE (SE)	136	8	378486 423689
344	Points of Interest - Manufacturing and Production Name: Works Location: BB4 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A13NE (NE)	186	8	378538 424077



Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
344	Points of Interest - Manufacturing and Production Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A13NE (NE)	189	8	378542 424078
345	Points of Interest - Manufacturing and Production Name: Industrial Estate Location: BB4 Category: Industrial Features Class Code: Business Parks and Industrial Estates Positional Accuracy: Positioned to an adjacent address or location	A13SW (SW)	204	8	378148 423533
346	Points of Interest - Manufacturing and Production Name: Prinny Hill Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A8NE (S)	243	8	378431 423454
346	Points of Interest - Manufacturing and Production Name: Works Location: BB4 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A8NE (S)	245	8	378431 423451
346	Points of Interest - Manufacturing and Production Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A8NE (S)	247	8	378405 423440
346	Points of Interest - Manufacturing and Production Name: Works Location: BB4 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A8NE (S)	247	8	378405 423440
347	Points of Interest - Manufacturing and Production Name: Works Location: BB4 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A14NW (NE)	278	8	378697 423980
347	Points of Interest - Manufacturing and Production Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A14NW (NE)	282	8	378701 423981
348	Points of Interest - Manufacturing and Production Name: Tank Location: BB4 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A13NE (NE)	281	8	378622 424130
349	Points of Interest - Manufacturing and Production Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A8NE (SE)	340	8	378546 423410
349	Points of Interest - Manufacturing and Production Name: Works Location: BB4 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A8NE (SE)	340	8	378546 423410
349	Points of Interest - Manufacturing and Production Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A8NE (SE)	344	8	378594 423451



Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
349	Points of Interest - Manufacturing and Production Name: Works Location: BB4 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A8NE (SE)	344	8	378594 423451
349	Points of Interest - Manufacturing and Production Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A8NE (SE)	408	8	378570 423343
349	Points of Interest - Manufacturing and Production Name: Works Location: BB4 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A8NE (SE)	408	8	378570 423343
349	Points of Interest - Manufacturing and Production Name: Works Location: 7 Ratcliffe Fold, Haslingden, Rossendale, BB4 5PZ Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to address or location	A8NE (SE)	417	8	378556 423323
350	Points of Interest - Manufacturing and Production Name: Carrs Industrial Estate Location: BB4 Category: Industrial Features Class Code: Business Parks and Industrial Estates Positional Accuracy: Positioned to an adjacent address or location	A8NW (SW)	456	8	378106 423275
351	Points of Interest - Manufacturing and Production Name: Hud Hey Industrial Estate Location: BB4 Category: Industrial Features Class Code: Business Parks and Industrial Estates Positional Accuracy: Positioned to an adjacent address or location	A18SE (N)	463	8	378551 424376
351	Points of Interest - Manufacturing and Production Name: Hud Hey Industrial Estate Location: BB4 Category: Industrial Features Class Code: Business Parks and Industrial Estates Positional Accuracy: Positioned to an adjacent address or location	A18SE (N)	469	8	378559 424380
352	Points of Interest - Manufacturing and Production Name: Works Location: BB4 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A14SW (SE)	511	8	378817 423507
353	Points of Interest - Manufacturing and Production Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A14SW (SE)	514	8	378821 423508
353	Points of Interest - Manufacturing and Production Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A9NW (SE)	539	8	378822 423447
353	Points of Interest - Manufacturing and Production Name: Works Location: BB4 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A9NW (SE)	539	8	378822 423447
353	Points of Interest - Manufacturing and Production Name: Tank Location: BB4 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A9NW (SE)	584	8	378864 423432



Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
354	Points of Interest - Manufacturing and Production Name: Tank Location: BB4 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A19SW (NE)	567	8	378686 424433
355	Points of Interest - Manufacturing and Production Name: Pit Heads Location: BB4 Category: Extractive Industries Class Code: Unspecified Quarries Or Mines Positional Accuracy: Positioned to an adjacent address or location	A9NW (SE)	714	8	378950 423316
356	Points of Interest - Manufacturing and Production Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A19SW (NE)	735	8	379011 424372
357	Points of Interest - Manufacturing and Production Name: Quarries (Disused) Location: BB4 Category: Extractive Industries Class Code: Unspecified Quarries Or Mines Positional Accuracy: Positioned to an adjacent address or location	A14SE (E)	761	8	379138 423650
358	Points of Interest - Manufacturing and Production Name: Tank Location: BB4 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A9NW (SE)	771	8	378933 423191
359	Points of Interest - Manufacturing and Production Name: Hutch Bank Quarry (Dis) Location: BB4 Category: Extractive Industries Class Code: Unspecified Quarries Or Mines Positional Accuracy: Positioned to an adjacent address or location	A7NW (SW)	788	8	377661 423187
360	Points of Interest - Manufacturing and Production Name: Business Park Location: BB4 Category: Industrial Features Class Code: Business Parks and Industrial Estates Positional Accuracy: Positioned to an adjacent address or location	A8SW (S)	824	8	378273 422855
360	Points of Interest - Manufacturing and Production Name: Industrial Estate Location: BB4 Category: Industrial Features Class Code: Business Parks and Industrial Estates Positional Accuracy: Positioned to an adjacent address or location	A3NW (S)	887	8	378241 422794
360	Points of Interest - Manufacturing and Production Name: Industrial Estate Location: BB4 Category: Industrial Features Class Code: Business Parks and Industrial Estates Positional Accuracy: Positioned to an adjacent address or location	A3NW (S)	889	8	378233 422793
361	Points of Interest - Manufacturing and Production Name: Platters Slate Location: Unit 20 Springvale Mill, Waterside Road, Haslingden, Rossendale, BB4 5EZ Category: Extractive Industries Class Code: Stone Quarrying and Preparation Positional Accuracy: Positioned to address or location	A8SW (S)	825	8	378161 422870
362	Points of Interest - Manufacturing and Production Name: Works Location: BB4 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A8SE (S)	859	8	378417 422821
362	Points of Interest - Manufacturing and Production Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A8SE (S)	860	8	378420 422821



Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
362	Points of Interest - Manufacturing and Production Name: Works Location: BB4 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to address or location	A3NE (S)	886	8	378410 422794
362	Points of Interest - Manufacturing and Production Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A3NE (S)	887	8	378410 422793
362	Points of Interest - Manufacturing and Production Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A3NE (S)	894	8	378429 422787
362	Points of Interest - Manufacturing and Production Name: Works Location: BB4 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A3NE (S)	894	8	378425 422787
363	Points of Interest - Manufacturing and Production Name: Hurstwood Enterprise Park Location: BB4 Category: Industrial Features Class Code: Business Parks and Industrial Estates Positional Accuracy: Positioned to an adjacent address or location	A8SW (S)	922	8	378037 422804
363	Points of Interest - Manufacturing and Production Name: Hurstwood Enterprise Park Location: BB4 Category: Industrial Features Class Code: Business Parks and Industrial Estates Positional Accuracy: Positioned to an adjacent address or location	A3NW (S)	935	8	378012 422799
363	Points of Interest - Manufacturing and Production Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A3NW (S)	981	8	378028 422744
363	Points of Interest - Manufacturing and Production Name: Works Location: BB4 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A3NW (S)	984	8	378023 422743
364	Points of Interest - Manufacturing and Production Name: Tank Location: BB4 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to an adjacent address or location	A19SE (NE)	936	8	379238 424393
365	Points of Interest - Manufacturing and Production Name: Hutch Bank Quarry (Stone) Location: BB4 Category: Extractive Industries Class Code: Stone Quarrying and Preparation Positional Accuracy: Positioned to an adjacent address or location	A7SE (SW)	946	8	377713 422931
366	Points of Interest - Manufacturing and Production Name: Tank Location: BB4 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to an adjacent address or location	A4NW (S)	977	8	378714 422776
367	Points of Interest - Public Infrastructure Name: Sluice Location: BB4 Category: Water Class Code: Weirs, Sluices and Dams Positional Accuracy: Positioned to an adjacent address or location	A18SE (NE)	273	8	378510 424190



Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
367	Points of Interest - Public Infrastructure Name: Sluice Location: BB4 Category: Water Class Code: Weirs, Sluices and Dams Positional Accuracy: Positioned to an adjacent address or location	A18SE (NE)	276	8	378515 424191
368	Points of Interest - Public Infrastructure Name: Weir Location: BB4 Category: Water Class Code: Weirs, Sluices and Dams Positional Accuracy: Positioned to an adjacent address or location	A13SW (SW)	305	8	378046 423483
368	Points of Interest - Public Infrastructure Name: Weir Location: BB4 Category: Water Class Code: Weirs, Sluices and Dams Positional Accuracy: Positioned to an adjacent address or location	A13SW (SW)	307	8	378043 423484
369	Points of Interest - Public Infrastructure Name: Islington Service Station Location: Blackburn Road, Haslingden, Rossendale, BB4 5QG Category: Road And Rail Class Code: Petrol and Fuel Stations Positional Accuracy: Positioned to address or location	A8NE (S)	423	8	378532 423302
369	Points of Interest - Public Infrastructure Name: Texaco Location: Blackburn Road, Haslingden, Rossendale, BB4 5QG Category: Road And Rail Class Code: Petrol and Fuel Stations Positional Accuracy: Positioned to address or location	A8NE (S)	423	8	378532 423302
369	Points of Interest - Public Infrastructure Name: Texaco Location: Blackburn Road, Haslingden, Rossendale, BB4 5QG Category: Road And Rail Class Code: Petrol and Fuel Stations Positional Accuracy: Positioned to address or location	A8NE (S)	423	8	378532 423302
369	Points of Interest - Public Infrastructure Name: Samuel Cooke Haslingden Location: Blackburn Road, Haslingden, Rossendale, BB4 5QG Category: Road And Rail Class Code: Petrol and Fuel Stations Positional Accuracy: Positioned to address or location	A8NE (S)	423	8	378532 423303
369	Points of Interest - Public Infrastructure Name: Haslingden Service Station Location: Blackburn Road, Haslingden, Rossendale, Lancashire, BB4 5QG Category: Road And Rail Class Code: Petrol and Fuel Stations Positional Accuracy: Positioned to address or location	A8NE (S)	423	8	378532 423302
370	Points of Interest - Public Infrastructure Name: Burial Ground Location: Not Supplied Category: Infrastructure and Facilities Class Code: Cemeteries and Crematoria Positional Accuracy: Positioned to an adjacent address or location	A9NW (SE)	513	8	378770 423407
370	Points of Interest - Public Infrastructure Name: Burial Ground Location: BB4 Category: Infrastructure and Facilities Class Code: Cemeteries and Crematoria Positional Accuracy: Positioned to an adjacent address or location	A9NW (SE)	513	8	378770 423407
371	Points of Interest - Public Infrastructure Name: Service Centre MOT Station Location: Hud Hey Road Unit 1, Hud Hey Industrial Estate, Haslingden, Rossendale, Lancashire, BB4 5JH Category: Road And Rail Class Code: Petrol and Fuel Stations Positional Accuracy: Positioned to address or location	A18SE (NE)	562	8	378618 424458
371	Points of Interest - Public Infrastructure Name: Spencer Synthetics Ltd Location: Hud Hey Industrial Estate, Hud Hey Road, Haslingden, Rossendale, BB4 5JH Category: Infrastructure and Facilities Class Code: Recycling Centres Positional Accuracy: Positioned to address or location	A18SE (NE)	562	8	378618 424458

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Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
372	Points of Interest - Public Infrastructure Name: Graveyard Location: Not Supplied Category: Infrastructure and Facilities Class Code: Cemeteries and Crematoria	A8SE (S)	646	8	378593 423084
372	Positional Accuracy: Positioned to an adjacent address or location Points of Interest - Public Infrastructure Name: Graveyard Location: BB4 Category: Infrastructure and Facilities Class Code: Cemeteries and Crematoria	A8SE (S)	646	8	378593 423085
373	Positional Accuracy: Positioned to an adjacent address or location Points of Interest - Public Infrastructure Name: Weir Location: BB4 Category: Water Class Code: Weirs, Sluices and Dams Positional Accuracy: Positioned to an adjacent address or location	A19SW (NE)	688	8	378984 424330
373	Points of Interest - Public Infrastructure Name: Sluice Location: BB4 Category: Water Class Code: Weirs, Sluices and Dams Positional Accuracy: Positioned to an adjacent address or location	A19SE (NE)	766	8	379041 424384
373	Points of Interest - Public Infrastructure Name: Sluice Location: BB4 Category: Water Class Code: Weirs, Sluices and Dams Positional Accuracy: Positioned to an adjacent address or location	A19SE (NE)	769	8	379019 424417
373	Points of Interest - Public Infrastructure Name: Sluice Location: BB4 Category: Water Class Code: Weirs, Sluices and Dams Positional Accuracy: Positioned to an adjacent address or location	A19SE (NE)	773	8	379051 424383
373	Points of Interest - Public Infrastructure Name: Sluice Location: BB4 Category: Water Class Code: Weirs, Sluices and Dams Positional Accuracy: Positioned to an adjacent address or location	A19SE (NE)	777	8	379028 424419
374	Points of Interest - Public Infrastructure Name: Texaco Location: Helmshore Road, Helmshore, Rossendale, BB4 4JR Category: Road And Rail Class Code: Petrol and Fuel Stations Positional Accuracy: Positioned to address or location	A8SE (S)	735	8	378562 422977
374	Points of Interest - Public Infrastructure Name: Mister C Petrol Station Location: Helmshore Road, Haslingden, Rossendale, BB4 4BG Category: Road And Rail Class Code: Petrol and Fuel Stations Positional Accuracy: Positioned to address or location	A8SE (S)	736	8	378562 422976
374	Points of Interest - Public Infrastructure Name: Texaco Location: Helmshore Road, Haslingden, Rossendale, BB4 4BG Category: Road And Rail Class Code: Petrol and Fuel Stations Positional Accuracy: Positioned to address or location	A8SE (S)	736	8	378562 422976
374	Points of Interest - Public Infrastructure Name: Mister C Petrol Station Location: Helmshaw Road, Haslingden, Rossendale, BB4 4BG Category: Road And Rail Class Code: Petrol and Fuel Stations Positional Accuracy: Positioned to address or location	A8SE (S)	736	8	378562 422976
374	Points of Interest - Public Infrastructure Name: Star Forecourts Location: Helmshore Road, Haslingden, Rossendale, BB4 4BG Category: Road And Rail Class Code: Petrol and Fuel Stations Positional Accuracy: Positioned to address or location	A8SE (S)	741	8	378576 422976



Map ID		Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
374	Points of Interest - P	ublic Infrastructure Texaco	A8SE	741	8	378576
071	Location: Category: Class Code:	Helmshore Road, Haslingden, Rossendale, BB4 4BG Road And Rail Petrol and Fuel Stations Positioned to address or location	(S)	, , ,	Ç	422976
374	Location: Category: Class Code:	ublic Infrastructure Cordingleys Garage Helmshore Road, Haslingden, Rossendale, BB4 4BG Road And Rail Petrol and Fuel Stations Positioned to address or location	A8SE (S)	752	8	378558 422959
375	Location: Category: Class Code:	ublic Infrastructure Weirs BB4 Water Weirs, Sluices and Dams Positioned to an adjacent address or location	A8SW (S)	829	8	378190 422860
375	Location: Category: Class Code:	ublic Infrastructure Weirs BB4 Water Weirs, Sluices and Dams Positioned to an adjacent address or location	A8SW (S)	840	8	378180 422851
375	Location: Category: Class Code:	ublic Infrastructure Weir BB4 Water Weirs, Sluices and Dams Positioned to an adjacent address or location	A8SW (S)	856	8	378190 422833
376	Location: Category: Class Code:	ublic Infrastructure Haslingden Fire Station Manchester Road, Haslingden, BB4 6NL Central and Local Government Fire Brigade Stations Positioned to address or location	A9SW (SE)	850	8	378775 422950
376	Location: Category: Class Code:	ublic Infrastructure Haslingden Police Station Police Station, Manchester Road, Haslingden, Rossendale, BB4 6QW Central and Local Government Police Stations Positioned to address or location	A9SW (SE)	877	8	378796 422931
377	Name: Location: Category: Class Code:	ecreational and Environmental Playground Not Supplied Recreational Playgrounds Positioned to an adjacent address or location	A8NE (S)	432	8	378375 423246
377	Name: Location: Category: Class Code:	ecreational and Environmental Playground Laburnum Street, BB4 Recreational Playgrounds Positioned to an adjacent address or location	A8NE (S)	432	8	378375 423246
378	Name: Location: Category: Class Code:	ecreational and Environmental Playground Not Supplied Recreational Playgrounds Positioned to an adjacent address or location	A8NE (S)	552	8	378539 423164
378	Name: Location: Category: Class Code:	ecreational and Environmental Playground Ratcliffe Street, BB4 Recreational Playgrounds Positioned to an adjacent address or location	A8NE (S)	552	8	378540 423164
379	Name: Location: Category: Class Code:	ecreational and Environmental Playground Not Supplied Recreational Playgrounds Positioned to an adjacent address or location	A19SW (NE)	626	8	378746 424467



Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
379	Points of Interest - Recreational and Environmental Name: Playground Location: Blackburn Road, BB4 Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to address or location	A19SW (NE)	640	8	378755 424478
380	Points of Interest - Recreational and Environmental Name: Playground Location: Poplar Street, BB4 Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A9NW (SE)	740	8	378982 423319
380	Points of Interest - Recreational and Environmental Name: Playground Location: Not Supplied Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A9NW (SE)	741	8	378982 423318
381	Points of Interest - Recreational and Environmental Name: Playground Location: Ryefield Avenue, BB4 Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to address or location	A9SW (SE)	803	8	378717 422971
381	Points of Interest - Recreational and Environmental Name: Playground Location: Not Supplied Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A9SW (SE)	804	8	378702 422962
382	Points of Interest - Recreational and Environmental Name: Playground Location: Nr Clough Gardens, BB4 Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A19SE (NE)	961	8	379224 424462
382	Points of Interest - Recreational and Environmental Name: Playground Location: Not Supplied Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A19SE (NE)	963	8	379226 424464

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Sensitive Land Use

Map ID		Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Areas of Adopted G	reen Belt				
383	Authority: Plan Name: Status: Plan Date:	Rossendale Borough Council, Planning Department Proposal Map Adopted 9th November 2011	A18SE (N)	548	9	378509 424475
	Areas of Adopted G	reen Belt				
384	Authority: Plan Name: Status: Plan Date:	Rossendale Borough Council, Planning Department Proposal Map Adopted 9th November 2011	A18SE (N)	548	9	378509 424475
	Sites of Special Sci	entific Interest				
385	Name: Multiple Areas: Total Area (m2): Source: Reference: Designation Details: Designation Date: Date Type:	West Pennine Moors Y 76154904.64000003 Natural England 2000830	A12SW (W)	850	11	377404 423801



Agency & Hydrological	Version	Update Cycle
Contaminated Land Register Entries and Notices		
Burnley Borough Council - Planning and Environment	February 2013	Annual Rolling Update
Blackburn with Darwen Borough Council - Environmental Health Department	July 2013	Annual Rolling Updat
lyndburn Borough Council - Environmental Health Department	July 2013	Annual Rolling Updat
Rossendale Borough Council - Environmental Health Department	November 2015	Annual Rolling Updat
Bury Metropolitan Borough Council - Environmental Health Department	October 2013	Annual Rolling Updat
Environment Agency - Head Office	September 2019	Annually
Discharge Consents Environment Agency - North West Region	January 2020	Quarterly
Enforcement and Prohibition Notices	January 2020	Quarterly
Environment Agency - North West Region	March 2013	Annual Rolling Updat
ntegrated Pollution Controls		
Environment Agency - North West Region	October 2008	Variable
ntegrated Pollution Prevention And Control		
Environment Agency - North West Region	January 2020	Quarterly
ocal Authority Integrated Pollution Prevention And Control		
Blackburn with Darwen Borough Council - Environmental Health Department	February 2015	Variable
Bury Metropolitan Borough Council - Environmental Health Department	February 2015	Variable
Rossendale Borough Council - Environmental Health Department	May 2016	Variable
Burnley Borough Council - Planning and Environment	November 2014	Variable
Hyndburn Borough Council - Environmental Health Department	October 2014	Variable
ocal Authority Pollution Prevention and Controls		
Blackburn with Darwen Borough Council - Environmental Health Department	February 2015	Not Applicable
Bury Metropolitan Borough Council - Environmental Health Department	February 2015	Not Applicable
Rossendale Borough Council - Environmental Health Department	May 2016	Annual Rolling Upda
Burnley Borough Council - Planning and Environment	November 2014	Not Applicable
Hyndburn Borough Council - Environmental Health Department	October 2014	Annual Rolling Upda
ocal Authority Pollution Prevention and Control Enforcements		
Blackburn with Darwen Borough Council - Environmental Health Department	February 2015	Variable
Bury Metropolitan Borough Council - Environmental Health Department	February 2015	Variable
Rossendale Borough Council - Environmental Health Department	May 2016	Variable
Burnley Borough Council - Planning and Environment	November 2014	Variable
Hyndburn Borough Council - Environmental Health Department	October 2014	Variable
Nearest Surface Water Feature		
Ordnance Survey	February 2020	
Pollution Incidents to Controlled Waters		
Environment Agency - North West Region	January 2000	Not Applicable
Prosecutions Relating to Authorised Processes	M 1 0040	
Environment Agency - North West Region	March 2013	Annual Rolling Updat
Prosecutions Relating to Controlled Waters Environment Agency - North West Region	March 2013	Annual Rolling Updat
Registered Radioactive Substances	IVIAICII 2013	Armual Rolling Opual
Environment Agency - North West Region	June 2016	
River Quality	000000	
Environment Agency - Head Office	November 2001	Not Applicable
River Quality Biology Sampling Points		
Environment Agency - Head Office	July 2012	Annually
River Quality Chemistry Sampling Points		
Environment Agency - Head Office	July 2012	Annually
Substantiated Pollution Incident Register		
Environment Agency - North West Region - Central Area	January 2020	Quarterly
Environment Agency - North West Region - North Area	January 2020	Quarterly
Environment Agency - North West Region - South Area	January 2020	Quarterly

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Agency & Hydrological	Version	Update Cycle
Water Abstractions		
Environment Agency - North West Region	January 2020	Quarterly
Water Industry Act Referrals		
Environment Agency - North West Region	October 2017	Quarterly
Groundwater Vulnerability Map		
Environment Agency - Head Office	June 2018	As notified
Bedrock Aquifer Designations		
Environment Agency - Head Office	January 2018	Annually
Superficial Aquifer Designations		
Environment Agency - Head Office	January 2018	Annually
Source Protection Zones		
Environment Agency - Head Office	October 2019	Quarterly
Extreme Flooding from Rivers or Sea without Defences		
Environment Agency - Head Office	February 2020	Quarterly
Flooding from Rivers or Sea without Defences		
Environment Agency - Head Office	February 2020	Quarterly
Areas Benefiting from Flood Defences		
Environment Agency - Head Office	February 2020	Quarterly
Flood Water Storage Areas		
Environment Agency - Head Office	February 2020	Quarterly
Flood Defences		
Environment Agency - Head Office	February 2020	Quarterly
OS Water Network Lines		
Ordnance Survey	January 2020	Quarterly
Surface Water 1 in 30 year Flood Extent		
Environment Agency - Head Office	October 2013	Annually
Surface Water 1 in 100 year Flood Extent		
Environment Agency - Head Office	October 2013	Annually
Surface Water 1 in 1000 year Flood Extent		
Environment Agency - Head Office	October 2013	Annually
Surface Water Suitability		
Environment Agency - Head Office	October 2013	Annually
BGS Groundwater Flooding Susceptibility		
British Geological Survey - National Geoscience Information Service	May 2013	Annually

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Waste	Version	Update Cycle
BGS Recorded Landfill Sites		
British Geological Survey - National Geoscience Information Service	June 1996	Not Applicable
Historical Landfill Sites		
Environment Agency - Head Office	October 2019	Quarterly
Integrated Pollution Control Registered Waste Sites		
Environment Agency - North West Region	October 2008	Not Applicable
Licensed Waste Management Facilities (Landfill Boundaries)		
Environment Agency - North West Region - Central Area	November 2019	Quarterly
Environment Agency - North West Region - North Area	November 2019	Quarterly
Environment Agency - North West Region - South Area	November 2019	Quarterly
Licensed Waste Management Facilities (Locations)		,
Environment Agency - North West Region - Central Area	January 2020	Quarterly
Environment Agency - North West Region - North Area	January 2020	Quarterly
Environment Agency - North West Region - South Area	January 2020	Quarterly
Local Authority Landfill Coverage		,
Blackburn with Darwen Borough Council	May 2000	Not Applicable
Burnley Borough Council	May 2000	Not Applicable
Bury Metropolitan Borough Council	May 2000	Not Applicable
Hyndburn Borough Council - Environmental Health Department	May 2000	Not Applicable
Lancashire County Council - Waste Management Group	May 2000	Not Applicable
Rossendale Borough Council - Environmental Health Department	May 2000	Not Applicable
Local Authority Recorded Landfill Sites		
Blackburn with Darwen Borough Council	May 2000	Not Applicable
Burnley Borough Council	May 2000	Not Applicable
Bury Metropolitan Borough Council	May 2000	Not Applicable
Hyndburn Borough Council - Environmental Health Department	May 2000	Not Applicable
Lancashire County Council - Waste Management Group	May 2000	Not Applicable
Rossendale Borough Council - Environmental Health Department	May 2000	Not Applicable
Potentially Infilled Land (Non-Water)		
Landmark Information Group Limited	December 1999	Not Applicable
Potentially Infilled Land (Water)		
Landmark Information Group Limited	December 1999	Not Applicable
Registered Landfill Sites		
Environment Agency - North West Region - Central Area	March 2003	Not Applicable
Environment Agency - North West Region - North Area	March 2003	Not Applicable
Environment Agency - North West Region - South Area	March 2003	Not Applicable
Registered Waste Transfer Sites		
Environment Agency - North West Region - Central Area	March 2003	Not Applicable
Environment Agency - North West Region - North Area	March 2003	Not Applicable
Environment Agency - North West Region - South Area	March 2003	Not Applicable
Registered Waste Treatment or Disposal Sites		
Environment Agency - North West Region - Central Area	March 2003	Not Applicable
Environment Agency - North West Region - North Area	March 2003	Not Applicable
Environment Agency - North West Region - South Area	March 2003	Not Applicable

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Hazardous Substances	Version	Update Cycle
Control of Major Accident Hazards Sites (COMAH)		
Health and Safety Executive	April 2018	Bi-Annually
Explosive Sites		
Health and Safety Executive	March 2017	Annually
Notification of Installations Handling Hazardous Substances (NIHHS)		
Health and Safety Executive	November 2000	Not Applicable
Planning Hazardous Substance Enforcements		
Blackburn with Darwen Borough Council	February 2016	Variable
Burnley Borough Council - Planning Services	February 2016	Variable
Bury Metropolitan Borough Council	February 2016	Variable
Hyndburn Borough Council - Planning	February 2016	Variable
Lancashire County Council	February 2016	Variable
Rossendale Borough Council - Planning Department	February 2016	Variable
	r obligary 2010	Variable
Planning Hazardous Substance Consents	Fahmier: 2040	Variable
Blackburn with Darwen Borough Council	February 2016	Variable
Burnley Borough Council - Planning Services	February 2016	Variable
Bury Metropolitan Borough Council	February 2016	Variable
Hyndburn Borough Council - Planning	February 2016	Variable
Lancashire County Council	February 2016	Variable
Rossendale Borough Council - Planning Department	February 2016	Variable
Geological	Version	Update Cycle
BGS 1:625,000 Solid Geology		
British Geological Survey - National Geoscience Information Service	January 2009	Not Applicable
BGS Estimated Soil Chemistry		
British Geological Survey - National Geoscience Information Service	October 2015	Annually
BGS Recorded Mineral Sites		
British Geological Survey - National Geoscience Information Service	October 2019	Bi-Annually
- · ·	October 2019	DI-Allilually
CBSCB Compensation District	-	
Cheshire Brine Subsidence Compensation Board (CBSCB)	August 2011	Not Applicable
Coal Mining Affected Areas		
The Coal Authority - Property Searches	March 2014	Annual Rolling Updat
Mining Instability		
Ove Arup & Partners	October 2000	Not Applicable
Non Coal Mining Areas of Great Britain		
British Geological Survey - National Geoscience Information Service	May 2015	Not Applicable
	May 2010	Ttot / tppiloabio
Potential for Collapsible Ground Stability Hazards		
British Geological Survey - National Geoscience Information Service	January 2019	Annually
Potential for Compressible Ground Stability Hazards		
British Geological Survey - National Geoscience Information Service	January 2019	Annually
Potential for Ground Dissolution Stability Hazards		
British Geological Survey - National Geoscience Information Service	January 2019	Annually
Potential for Landslide Ground Stability Hazards		
British Geological Survey - National Geoscience Information Service	January 2019	Annually
Potential for Running Sand Ground Stability Hazards		,
	January 2010	Annually
British Geological Survey - National Geoscience Information Service	January 2019	Annually
Potential for Shrinking or Swelling Clay Ground Stability Hazards		
British Geological Survey - National Geoscience Information Service	January 2019	Annually
Radon Potential - Radon Affected Areas		
British Geological Survey - National Geoscience Information Service	July 2011	Annually
Radon Potential - Radon Protection Measures		
British Geological Survey - National Geoscience Information Service	July 2011	Annually
	, .	

Order Number: 241411014_1_1 Date: 22-Apr-2020 rpr_ec_datasheet v53.0 A Landmark Information Group Service



Industrial Land Use	Version	Update Cycle
Contemporary Trade Directory Entries		
Thomson Directories	January 2020	Quarterly
Fuel Station Entries		
Catalist Ltd - Experian	April 2020	Quarterly
Gas Pipelines		
National Grid	July 2014	
Points of Interest - Commercial Services		
PointX	March 2020	Quarterly
Points of Interest - Education and Health		
PointX	March 2020	Quarterly
Points of Interest - Manufacturing and Production		
PointX	March 2020	Quarterly
Points of Interest - Public Infrastructure		
PointX	March 2020	Quarterly
Points of Interest - Recreational and Environmental		
PointX	March 2020	Quarterly
Underground Electrical Cables		
National Grid	October 2019	

Order Number: 241411014_1_1 Date: 22-Apr-2020 rpr_ec_datasheet v53.0 A Landmark Information Group Service



Sensitive Land Use	Version	Update Cycle
Ancient Woodland		
Natural England	August 2018	Bi-Annually
Areas of Adopted Green Belt		
Blackburn with Darwen Borough Council	February 2020	As notified
Burnley Borough Council	February 2020	As notified
Bury Metropolitan Borough Council	February 2020	As notified
Hyndburn Borough Council	February 2020	As notified
Rossendale Borough Council - Planning Department	February 2020	As notified
Areas of Unadopted Green Belt		
Blackburn with Darwen Borough Council	February 2020	As notified
Burnley Borough Council	February 2020	As notified
Bury Metropolitan Borough Council	February 2020	As notified
lyndburn Borough Council	February 2020	As notified
Rossendale Borough Council - Planning Department	February 2020	As notified
Areas of Outstanding Natural Beauty		
Natural England	June 2019	Bi-Annually
Environmentally Sensitive Areas		
Natural England	January 2017	
Forest Parks		
Forestry Commission	April 1997	Not Applicable
ocal Nature Reserves		
Natural England	March 2019	Bi-Annually
Marine Nature Reserves		
Natural England	July 2019	Bi-Annually
National Nature Reserves		
Natural England	July 2019	Bi-Annually
National Parks		
Natural England	April 2017	Bi-Annually
Nitrate Sensitive Areas		
Natural England	April 2016	Not Applicable
Nitrate Vulnerable Zones		
Environment Agency - Head Office	December 2017	Bi-Annually
Department for Environment, Food and Rural Affairs (DEFRA - formerly FRCA)	October 2015	
Ramsar Sites		
Natural England	April 2019	Bi-Annually
Sites of Special Scientific Interest	•	,
Natural England	March 2019	Bi-Annually
Special Areas of Conservation		,
Natural England	June 2019	Bi-Annually
<u>~</u>	53110 2010	2
Special Protection Areas Natural England	April 2019	Bi-Annually



Data Suppliers

A selection of organisations who provide data within this report

Data Supplier	Data Supplier Logo
Ordnance Survey	Map data
Environment Agency	Environment Agency
Scottish Environment Protection Agency	SEPA Scottish Environment Protection Agency
The Coal Authority	The Coal Authority
British Geological Survey	British Geological Survey NATURAL ENVIRONMENT RESEARCH COUNCIL
Centre for Ecology and Hydrology	Centre for Ecology & Hydrology NATURAL ENVIRONMENT RESEARCH COUNCIL
Natural Resources Wales	Cyfoeth Naturiol Cymru Natural Resources Wales
Scottish Natural Heritage	SCOTTISH MATURAL HERITAGE WASA
Natural England	NATURAL ENGLAND
Public Health England	Public Health England
Ove Arup	ARUP
Peter Brett Associates	peterbrett





ontact	Name and Address	Contact Details
1	British Geological Survey - Enquiry Service British Geological Survey, Environmental Science Centre, Keyworth, Nottingham, Nottinghamshire, NG12 5GG	Telephone: 0115 936 3143 Fax: 0115 936 3276 Email: enquiries@bgs.ac.uk Website: www.bgs.ac.uk
2	Environment Agency - National Customer Contact Centre (NCCC)	Telephone: 03708 506 506 Email: enquiries@environment-agency.gov.uk
	PO Box 544, Templeborough, Rotherham, S60 1BY	
3	Rossendale Borough Council - Environmental Health Department	Telephone: 01706 217777 Fax: 01706 224958 Website: www.rossendale.gov.uk
	Town Hall, Rawtenstall, Rossendale, Lancashire, BB4 7LZ	
4	Environment Agency - Head Office Rio House, Waterside Drive, Aztec West, Almondsbury, Bristol, Avon, BS32 4UD	Telephone: 01454 624400 Fax: 01454 624409
5	Ordnance Survey Adanac Drive, Southampton, Hampshire, SO16 0AS	Telephone: 03456 05 05 05 Email: customerservices@ordnancesurvey.co.uk Website: www.ordnancesurvey.gov.uk
6	Lancashire County Council - Waste Management Group	Website: www.lancashire.gov.uk
	Environment Directorate, Guild House, Cross Street, Preston, Lancashire, PR1 8RD	
7	The Coal Authority - Property Searches 200 Lichfield Lane, Mansfield, Nottinghamshire, NG18 4RG	Telephone: 0345 762 6848 Fax: 01623 637 338 Email: groundstability@coal.gov.uk Website: www2.groundstability.com
8	PointX 7 Abbey Court, Eagle Way, Sowton, Exeter, Devon, EX2 7HY	Website: www.pointx.co.uk
9	Rossendale Borough Council - Planning Department Town Hall, Rawtenstall, Lancashire, BB4 7LZ	Telephone: 01706 217777 Fax: 01706 224958 Website: www.rossendale.gov.uk
10	Hyndburn Borough Council Development Services, Eagle Street, Accrington, Lancashire, BB5 1LN	Telephone: 01254 388111 Fax: 01254 391625 Website: www.hyndburnbc.gov.uk
11	Natural England County Hall, Spetchley Road, Worcester, WR5 2NP	Telephone: 0300 060 3900 Email: enquiries@naturalengland.org.uk Website: www.naturalengland.org.uk
-	Public Health England - Radon Survey, Centre for Radiation, Chemical and Environmental Hazards Chilten Didect Oxfordshire OX11 0PO	Telephone: 01235 822622 Fax: 01235 833891 Email: radon@phe.gov.uk Website: www.ukradon.org
	Chilton, Didcot, Oxfordshire, OX11 0RQ	
-	Landmark Information Group Limited Imperium, Imperial Way, Reading, Berkshire, RG2 0TD	Telephone: 0844 844 9952 Fax: 0844 844 9951 Email: customerservices@landmarkinfo.co.uk Website: www.landmarkinfo.co.uk

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

Order Number: 241411014_1_1 Date: 22-Apr-2020 rpr_ec_datasheet v53.0 A Landmark Information Group Service Page 95 of 95

Geology 1:10,000 Maps Legends

Artificial Ground and Landslip

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	MGR	Made Ground (Undivided)	Artificial Deposit	Holocene - Holocene
	WMGR	Infilled Ground	Artificial Deposit	Holocene - Holocene
	WGR	Worked Ground (Undivided)	Void	Holocene - Holocene
	SLIP	Landslide Deposit	Unknown/Unclassifie d Entry	Quaternary - Quaternary

Superficial Geology

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	ALV	Alluvium	Clay, Silt, Sand and Gravel	Flandrian - Pleistocene
	TILLD	Till, Devensian	Diamicton	Devensian - Ipswichian
	GFDUD	Glaciofluvial Deposits, Devensian	Sand and Gravel	Devensian - Ipswichian
	HEAD	Head	Diamicton	Quaternary - Ryazanian
	PEAT	Peat	Peat [Unlithified Deposits Coding Scheme]	Quaternary - Ryazanian

Bedrock and Faults

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	PLCM	Pennine Lower Coal Measures Formation	Mudstone, Siltstone and Sandstone	Langsettian - Langsettian
	WH	Woodhead Hill Rock	Sandstone	Langsettian - Langsettian
	LH	Lower Haslingden Flags	Sandstone	Yeadonian - Yeadonian
	RR	Rough Rock	Sandstone	Yeadonian - Yeadonian
	UH	Upper Haslingden Flags	Sandstone	Yeadonian - Yeadonian
	BBS	Brooksbottoms Grit	Sandstone	Marsdenian - Marsdenian
	HLBG	Holcombe Brook Grit	Sandstone	Marsdenian - Marsdenian
	HZG	Hazel Greave Grit	Sandstone	Marsdenian - Marsdenian
	MG	Millstone Grit Group [See also Migr]	Mudstone and Siltstone	Namurian - Namurian
	MG	Millstone Grit Group [See also Migr]	Sandstone	Namurian - Namurian
	Fault			
	Rock			

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Geology 1:10,000 Maps

This report contains geological map extracts taken from the BGS Digital Geological map of Great Britain at 1:10,000 scale and is designed for users carrying out preliminary site assessments who require geological maps for the area around a site. This mapping may be more up to date than previously published paper maps.

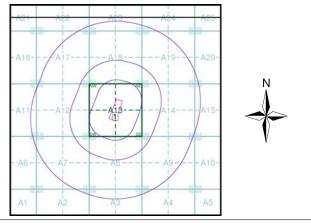
The various geological layers - artificial and landslip deposits, superficial geology and solid (bedrock) geology are displayed in separate maps, but superimposed on the final 'Combined Surface Geology' map. All map legends feature on this page.

Please Note: Not all of the layers have complete nationwide coverage, so availability of data for relevant map sheets is indicated below.

Geology 1:10,000 Maps Coverage

Map ID:	1	Map ID:	
Map Name:	SD72SE	Map Name:	SD72NE
Map Date:	2007	Map Date:	2007
Bedrock Geology:	Available	Bedrock Geology:	Available
Superficial Geology:	Available	Superficial Geology:	Available
Artificial Geology:	Available	Artificial Geology:	Available
Faults:	Available	Faults:	Available
Landslip:	Available	Landslip:	Available
Rock Segments:	Available	Rock Segments:	Available

Geology 1:10,000 Maps - Slice A



Order Details

Order Number: 241411014_1_1
Customer Ref: 391034AA06
National Grid Reference: 378340, 423810
Slice: 4

Slice: A Site Area (Ha): 2.26 Search Buffer (m): 1000

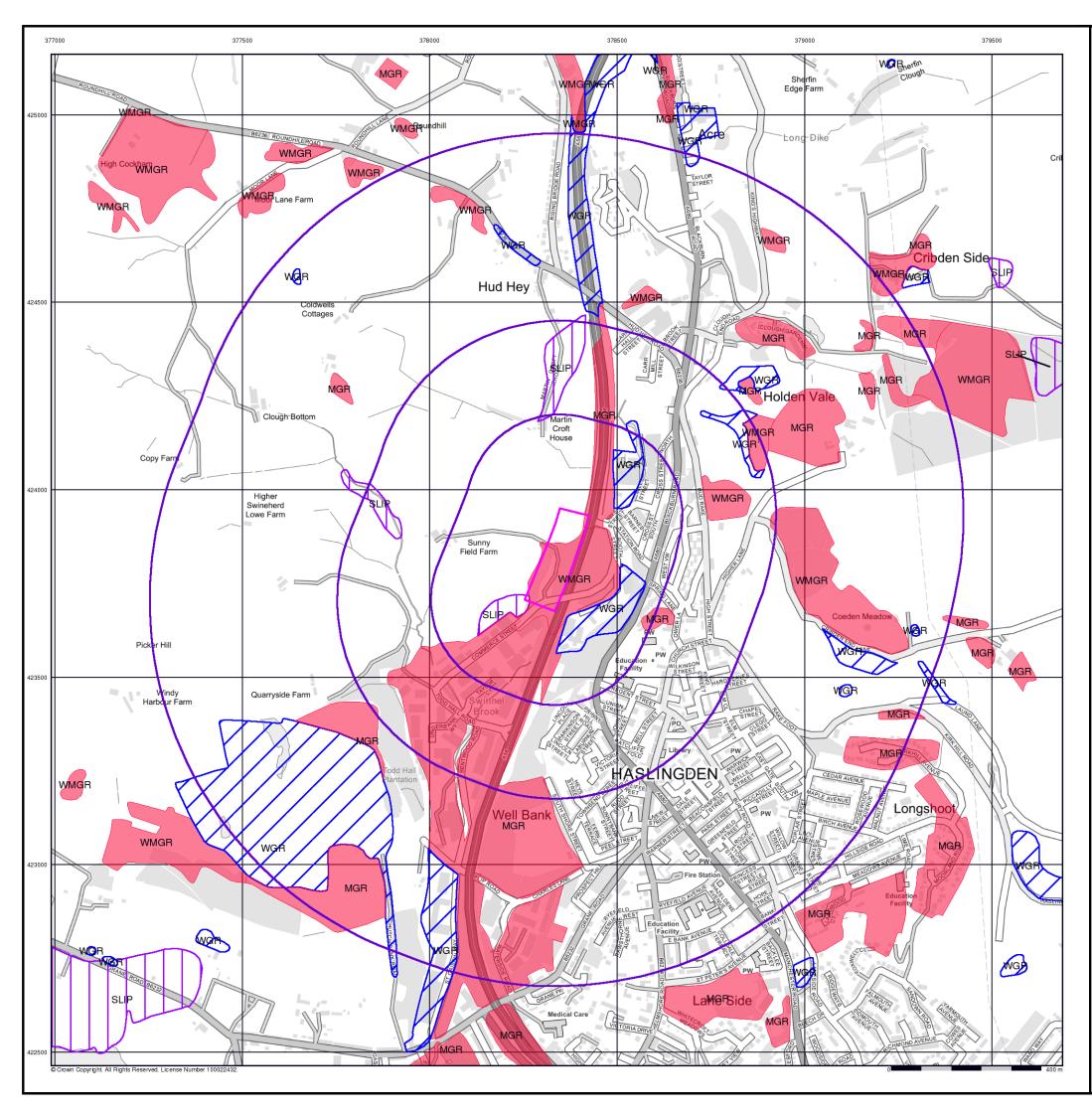
Site Details

Site at, Rossendale Valley, Lancashire



Tel: 0844 844 9952 Fax: 0844 844 9951 Web: www.enviroched

A Landmark Information Group Service v50.0 22-Apr-2020 Page 1 of 5



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Artificial Ground and Landslip

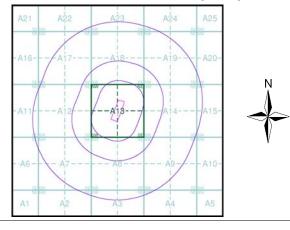
Artificial ground is a term used by BGS for those areas where the ground surface has been significantly modified by human activity. Information about previously developed ground is especially important, as it is often associated with potentially contaminated material, unpredictable engineering conditions and unstable

Artificial ground includes:

- Made ground man-made deposits such as embankments and spoil heaps on the natural ground surface.
- Worked ground areas where the ground has been cut away such as quarries and road cuttings.
- Infilled ground areas where the ground has been cut away then wholly or partially backfilled.
- Landscaped ground areas where the surface has been reshaped.
- Disturbed ground areas of ill-defined shallow or near surface mineral workings where it is impracticable to map made and worked ground separately.

Mass movement (landslip) deposits on BGS geological maps are primarily superficial deposits that have moved down slope under gravity to form landslips. These affect bedrock, other superficial deposits and artificial ground. The dataset also includes foundered strata, where the ground has collapsed due to subsidence.

Artificial Ground and Landslip Map - Slice A



Order Details

Order Number: 241411014_1_1 Customer Ref: 391034AA06 National Grid Reference: 378340, 423810

Slice:

Site Area (Ha): 2.26 Search Buffer (m): 1000

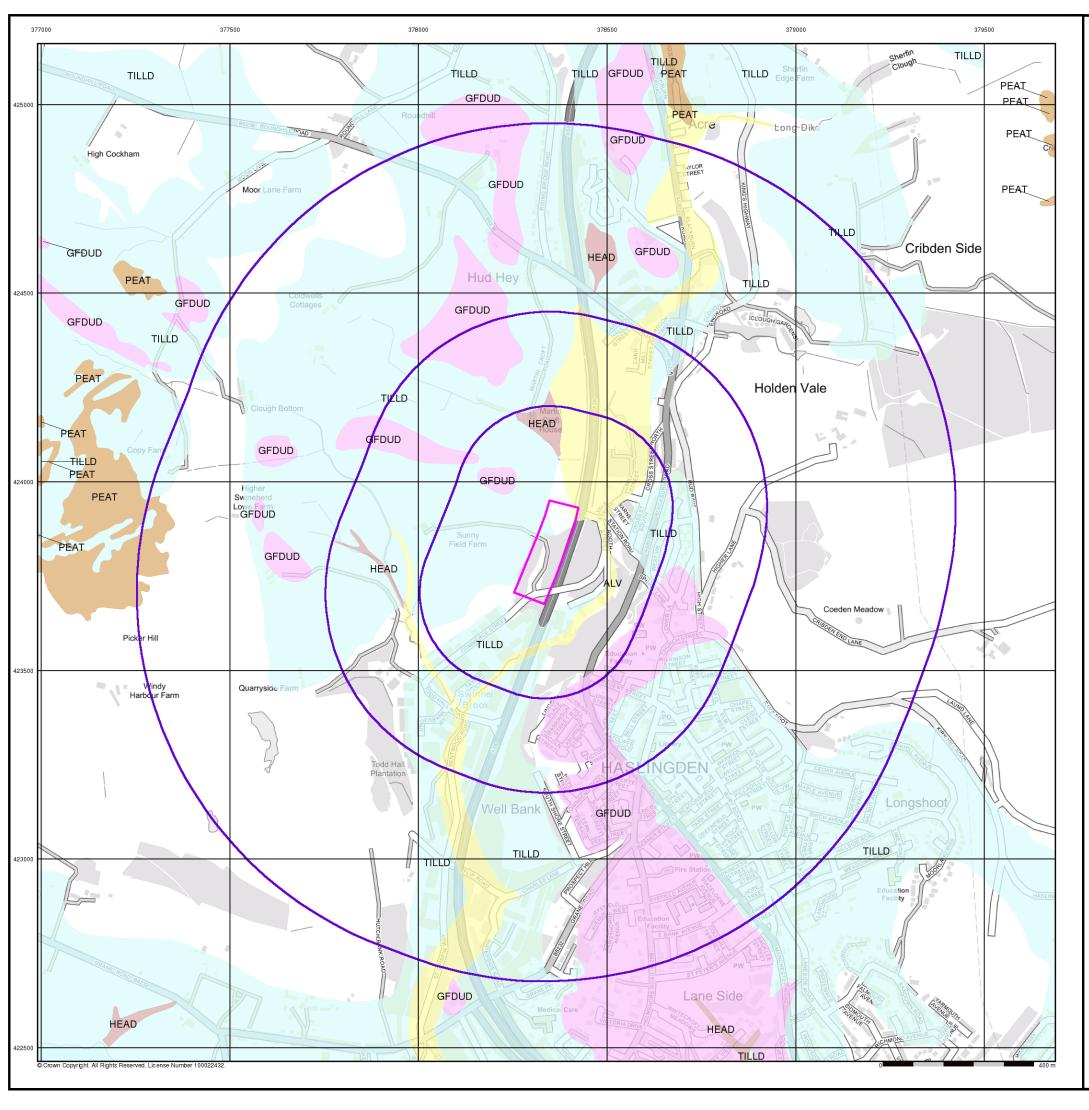
Site Details

Site at, Rossendale Valley, Lancashire



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A Landmark Information Group Service v50.0 22-Apr-2020 Page 2 of 5



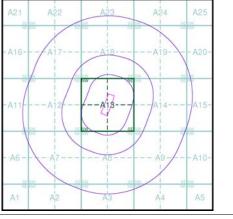
M MOTT MACDONALD **Superficial Geology**

BGS 1:10,000 Superficial Deposits are the youngest geological deposits formed during the most recent period of geological time, which extends back about 1.8 million years from the present.

They rest on older deposits or rocks referred to as Bedrock. This dataset contains Superficial deposits that are of natural origin and 'in place'. Other superficial strata may be held in the Mass Movement dataset where they have been moved, or in the Artificial Ground dataset where they are of man-made origin.

Most of these Superficial deposits are unconsolidated sediments such as gravel, sand, silt and clay, and onshore they form relatively thin, often discontinuous patches or larger spreads.

Superficial Geology Map - Slice A





Order Details

Order Number: 241411014_1_1 Customer Ref: 391034AA06 National Grid Reference: 378340, 423810

Slice:

Site Area (Ha): Search Buffer (m): 2.26 1000

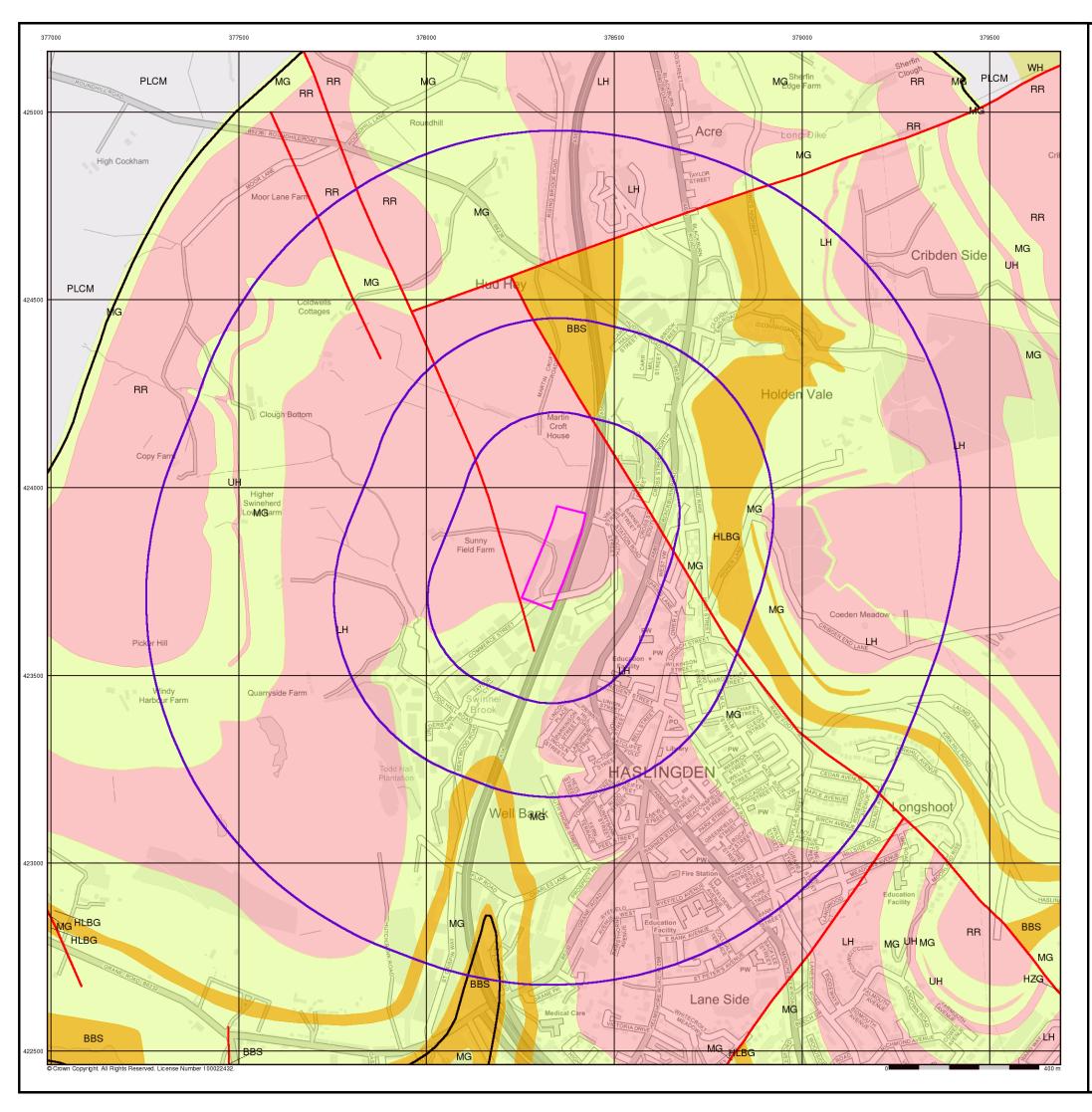
Site Details

Site at, Rossendale Valley, Lancashire

Landmark

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M MOTT MACDONALD

Bedrock and Faults

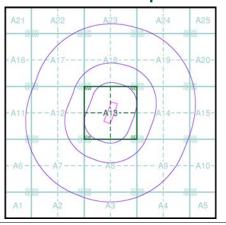
Bedrock geology is a term used for the main mass of rocks forming the Earth and are present everywhere, whether exposed at the surface in outcrops or concealed beneath superficial deposits

The bedrock has formed over vast lengths of geological time ranging from ancient and highly altered rocks of the Proterozoic, some 2500 million years ago, or older, up to the relatively young Pliocene, 1.8 million years ago.

The bedrock geology includes many lithologies, often classified into three types based on origin: igneous, metamorphic and

The BGS Faults and Rock Segments dataset includes geological faults and thin beds mapped as lines such as coal seams and mineral veins. These are not restricted by age and could relate to features of any of the 1:10,000 geology datasets.

Bedrock and Faults Map - Slice A





Order Details

Order Number: 241411014_1_1 Customer Ref: 391034AA06 National Grid Reference: 378340, 423810

Slice:

Site Area (Ha): Search Buffer (m): 2.26 1000

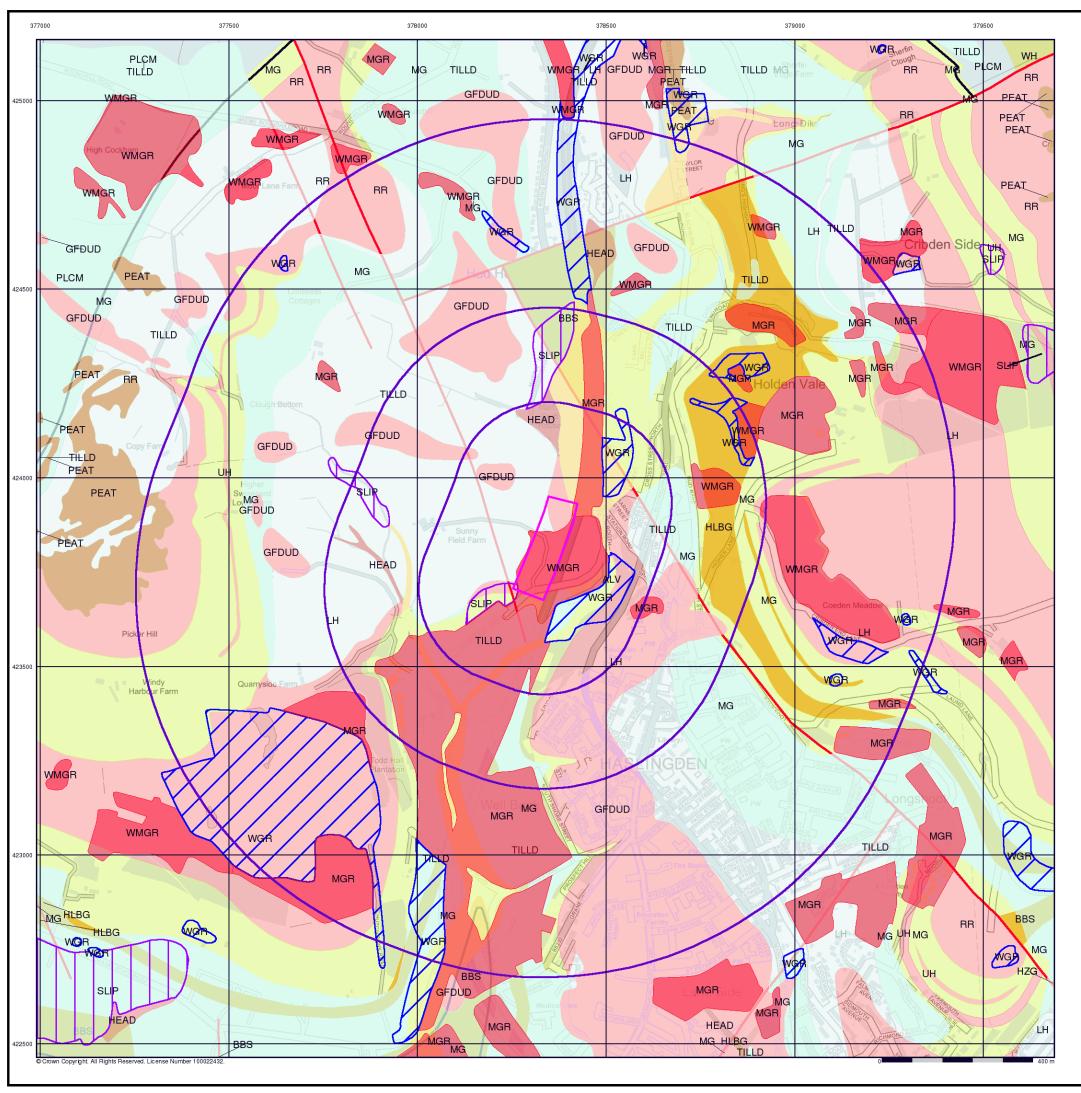
Site Details

Site at, Rossendale Valley, Lancashire

Landmark

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A Landmark Information Group Service v50.0 22-Apr-2020 Page 4 of 5



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Combined Surface Geology

The Combined Surface Geology map combines all the previous maps into one combined geological overview of your site.

Please consult the legends to the previous maps to interpret the Combined "Surface Geology" map.

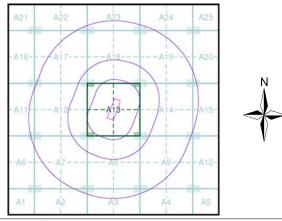
Additional Information

More information on 1:10,000 Geological mapping and explanations of rock classifications can be found on the BGS website. Using the LEX Codes in this report, further descriptions of rock types can be obtained by interrogating the 'BGS Lexicon of Named Rock Units'. This database can be accessed by following the 'Information and Data' link on the BGS website.

Contact

British Geological Survey Kingsley Dunham Centre Keyworth Nottingham NG12 5GG Telephone: 0115 936 3143 Fax: 0115 936 3276 email: enquiries@bgs.ac.uk website: www.bgs.ac.uk

Combined Geology Map - Slice A



Order Details

Order Number: 241411014_1_1 Customer Ref: 391034AA06 National Grid Reference: 378340, 423810

Slice:

Site Area (Ha): 2.26 Search Buffer (m): 1000

Site Details

Site at, Rossendale Valley, Lancashire



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A Landmark Information Group Service v50.0 22-Apr-2020 Page 5 of 5

Geology 1:50,000 Maps Legends

Lex Code

Artificial Ground and Landslip

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	WMGR	Infilled Ground	Artificial Deposit	Not Supplied - Holocene
\overline{Z}	MGR	Made Ground (Undivided)	Artificial Deposit	Not Supplied - Holocene
	WGR	Worked Ground (Undivided)	Void	Not Supplied - Holocene
	SLIP	Landslide Deposit	Unknown/Unclassif ied Entry	Not Supplied - Quaternary

Colour				
	HLBG	Holcombe Brook Grit	Sandstone	Not Supplied - Namurian
	GSYG	Guiseley Grit	Sandstone	Not Supplied - Namurian
	HSG	Helmshore Grit	Sandstone	Not Supplied - Namurian
	FLB	FLETCHER BANK GRIT	Sandstone	Not Supplied - Namurian
		Faults		
		Rock Segments		

Rock Type

Rock Name

Superficial Geology

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	ALV	Alluvium	Clay, Silt, Sand and Gravel	Not Supplied - Holocene
	TILLD	Till, Devensian	Diamicton	Not Supplied - Devensian
	GFDUD	Glaciofluvial Deposits, Devensian	Sand and Gravel	Not Supplied - Devensian
	HEAD	Head	Diamicton	Not Supplied - Quaternary
	PEAT	Peat	Peat	Not Supplied - Quaternary

Bedrock and Faults

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	PLCM	Pennine Lower Coal Measures Formation		
	WH	Woodhead Hill Rock	Sandstone	Not Supplied - Westphalian
	HER	Helpet Edge Rock	Sandstone	Not Supplied - Westphalian
	MLRS	Milnrow Sandstone	Sandstone	Not Supplied - Westphalian
	ROSSE	Rossendale Formation	Mudstone and Siltstone	Not Supplied - Namurian
	LH	Lower Haslingden Flags	Sandstone	Not Supplied - Namurian
	RR	Rough Rock	Sandstone	Not Supplied - Namurian
	MARSD	Marsden Formation	Mudstone and Siltstone	Not Supplied - Namurian
	BBS	Brooksbottoms Grit	Sandstone	Not Supplied - Namurian

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Min and Max Age

Geology 1:50,000 Maps

This report contains geological map extracts taken from the BGS Digital Geological map of Great Britain at 1:50,000 scale and is designed for users carrying out preliminary site assessments who require geological maps for the area around the site. This mapping may be more up to date than previously published paper maps.

The various geological layers - artificial and landslip deposits, superficial

The various geological layers - artificial and landslip deposits, superficial geology and solid (bedrock) geology are displayed in separate maps, but superimposed on the final 'Combined Surface Geology' map. All map legends feature on this page. Not all layers have complete nationwide coverage, so availability of data for relevant map sheets is indicated below.

Geology 1:50,000 Maps Coverage

 Map ID:
 1

 Map Sheet No:
 076

 Map Name:
 Rochdale

 Map Date:
 2008

 Bedrock Geology:
 Available

 Superficial Geology:
 Available

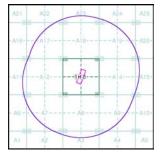
 Artificial Geology:
 Available

 Faults:
 Not Supplied

 Landslip:
 Available

 Rock Segments:
 Not Supplied

Geology 1:50,000 Maps - Slice A





Order Details:

 Order Number:
 241411014_1_1

 Customer Reference:
 391034AA06

 National Grid Reference:
 378340, 423810

 Slice:
 A

 Site Area (Ha):
 2.26

 Search Buffer (m):
 1000

Site Details:

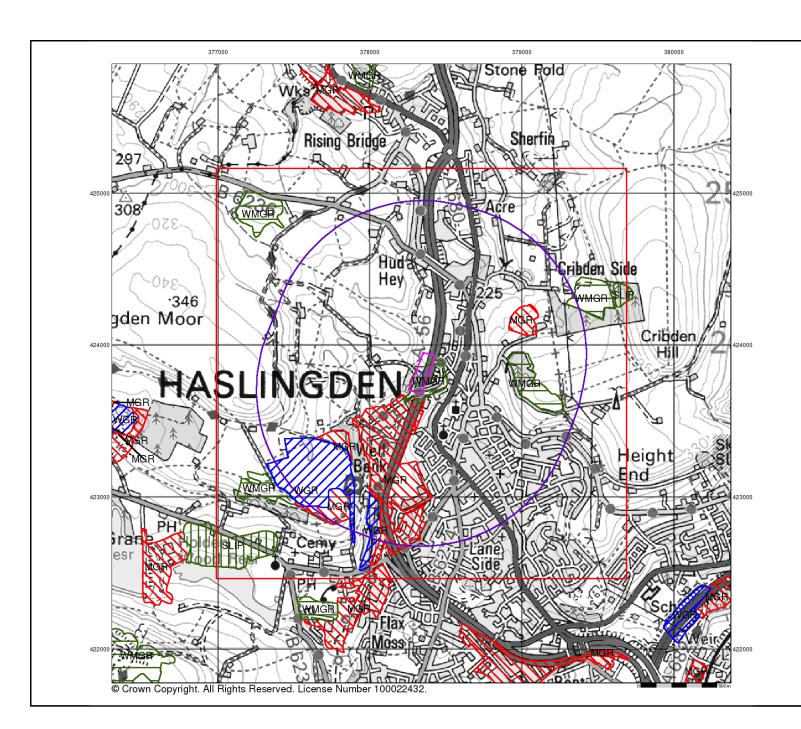
Site at, Rossendale Valley, Lancashire



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v15.0 22-Apr-2020

Page 1 of 5



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Artificial Ground and Landslip

Artificial ground is a term used by BGS for those areas where the ground surface has been significantly modified by human activity. Information about previously developed ground is especially important, as it is often associated with potentially contaminated material, unpredictable engineering conditions and unstable ground.

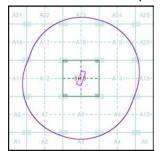
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- Made ground man-made deposits such as embankments and spoil
- heaps on the natural ground surface.

 Worked ground areas where the ground has been cut away such as quarries and road cuttings.
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 Disturbed ground areas of ill-defined shallow or near surface mineral workings where it is impracticable to map made and worked ground

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Artificial Ground and Landslip Map - Slice A





Order Details:

Order Number: Customer Reference: 241411014_1_1 391034AA06 National Grid Reference: 378340, 423810 A 2.26

Site Area (Ha): Search Buffer (m): 1000

Site Details:

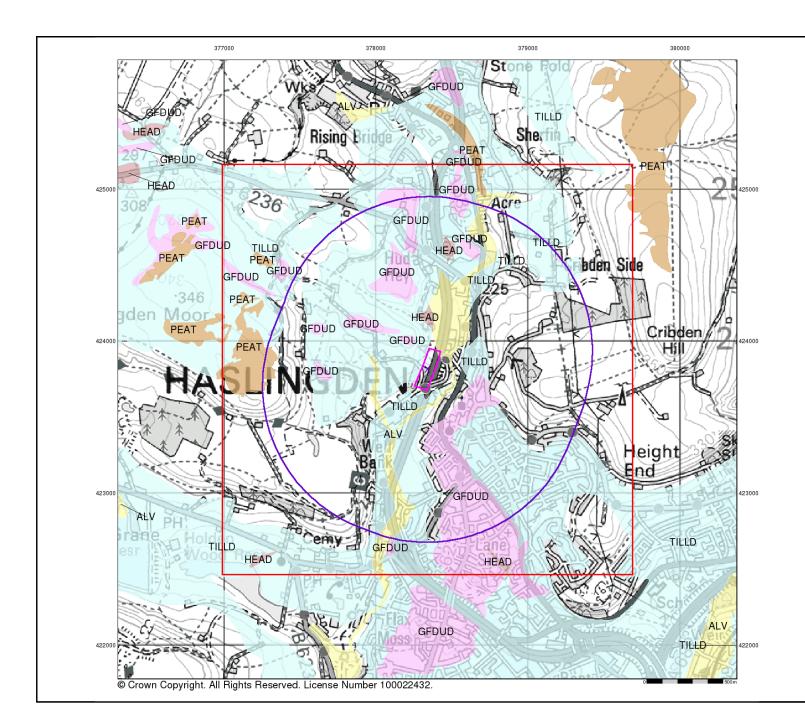
Site at, Rossendale Valley, Lancashire



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v15.0 22-Apr-2020

Page 2 of 5



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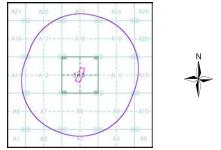
Superficial Geology

Superficial Deposits are the youngest geological deposits formed during the most recent period of geological time, the Quaternary, which extends back about 1.8 million years from the present.

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Most of these Superficial deposits are unconsolidated sediments such as gravel, sand, silt and clay, and onshore they form relatively thin, often discontinuous patches or larger spreads.

Superficial Geology Map - Slice A



Order Details:

Order Number: 241411014_1_1
Customer Reference: 391034AA06
National Grid Reference: 378340, 423810
Slice: A
Slice Area (Ha): 2.26
Search Buffer (m): 1000

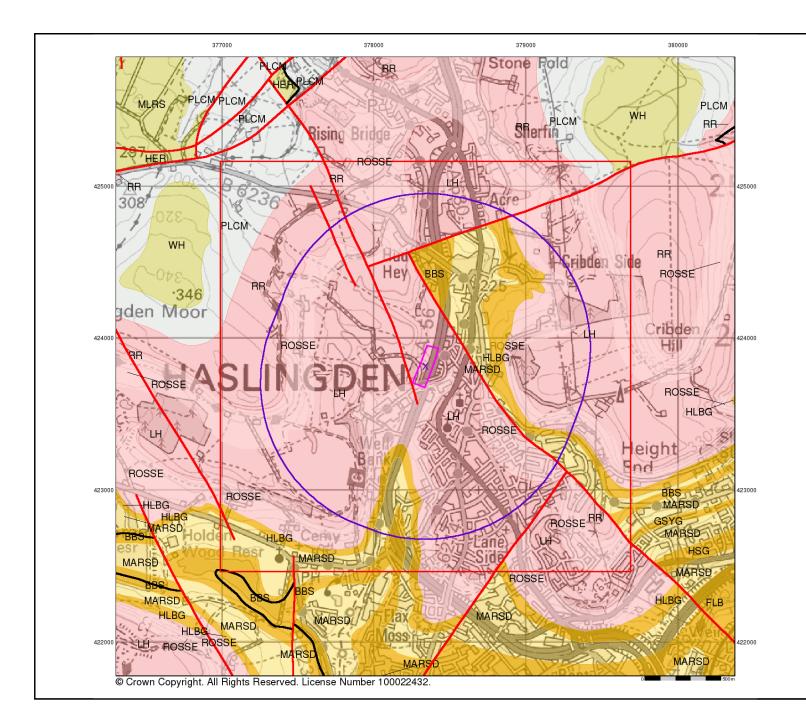
Site Details:

Site at, Rossendale Valley, Lancashire

Landmark*

Tel: 0844 844 9952 Fax: 0844 844 9951 Web: www.envirocheck.co

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M MOTT MACDONALD

Bedrock and Faults

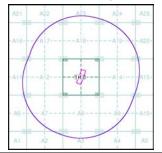
Bedrock geology is a term used for the main mass of rocks forming the Earth and are present everywhere, whether exposed at the surface in outcrops or concealed beneath superficial deposits or water.

The bedrock has formed over vast lengths of geological time ranging from ancient and highly altered rocks of the Proterozoic, some 2500 million years ago, or lader, up to the relatively young Pliocene, 1.8 million years ago.

The bedrock geology includes many lithologies, often classified into three types based on origin: igneous, metamorphic and sedimentary.

The BGS Faults and Rock Segments dataset includes geological faults (e.g. normal, thrust), and thin beds mapped as lines (e.g. coal seam, gypsum bed). Some of these are linked to other particular 1:50,000 Geology datasets, for example, coal seams are part of the bedrock sequence, most faults and mineral veins primarily affect the bedrock but cut across the strata and post date its deposition.

Bedrock and Faults Map - Slice A





Order Details:

 Order Number:
 241411014_1_1

 Customer Reference:
 391034AA06

 National Grid Reference:
 378340, 423810

 Slice:
 A

 Site Area (Ha):
 2.26

 Search Buffer (m):
 1000

Site Details:

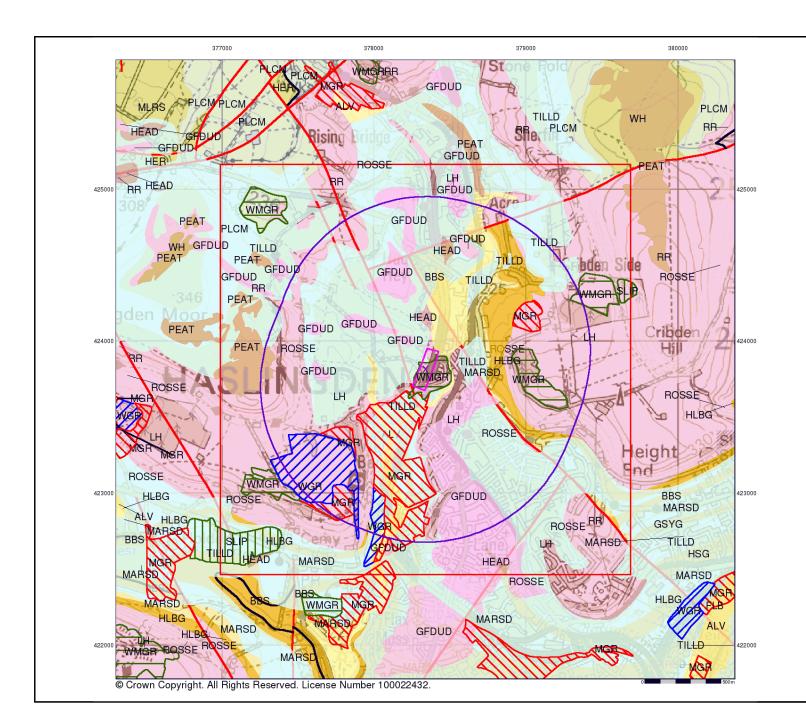
Site at, Rossendale Valley, Lancashire



Fel: 0844 844 9952 Fax: 0844 844 9951 Veb: www.envirocheck.c

v15.0 22-Apr-2020

Page 4 of 5



M MOTT MACDONALD

Combined Surface Geology

The Combined Surface Geology map combines all the previous maps into one combined geological overview of your site.

Please consult the legends to the previous maps to interpret the Combined "Surface Geology" map.

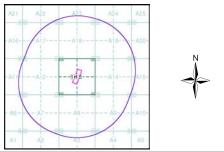
Additional Information

More information on 1:50,000 Geological mapping and explanations of rock classifications can be found on the BGS website. Using the LEX Codes in this report, further descriptions of rock types can be obtained by interrogating the 'BGS Lexicon of Named Rock Units'. This database can be accessed by following the 'Information and Data' link on the BGS website.

Contact

British Geological Survey Kingsley Dunham Centre Keyworth Nottingham NG12 5GG Telephone: 0115 936 3143 Fax: 0115 936 3276 email: enquiries@bgs.ac.uk website: www.bgs.ac.uk

Combined Geology Map - Slice A



Order Details:

Order Number: 241411014_1_1
Customer Reference: 391034AA06
National Grid Reference: 378340, 423810
Slice: A
Site Area (Ha): 2.26
Search Buffer (m): 1000

Site Details:

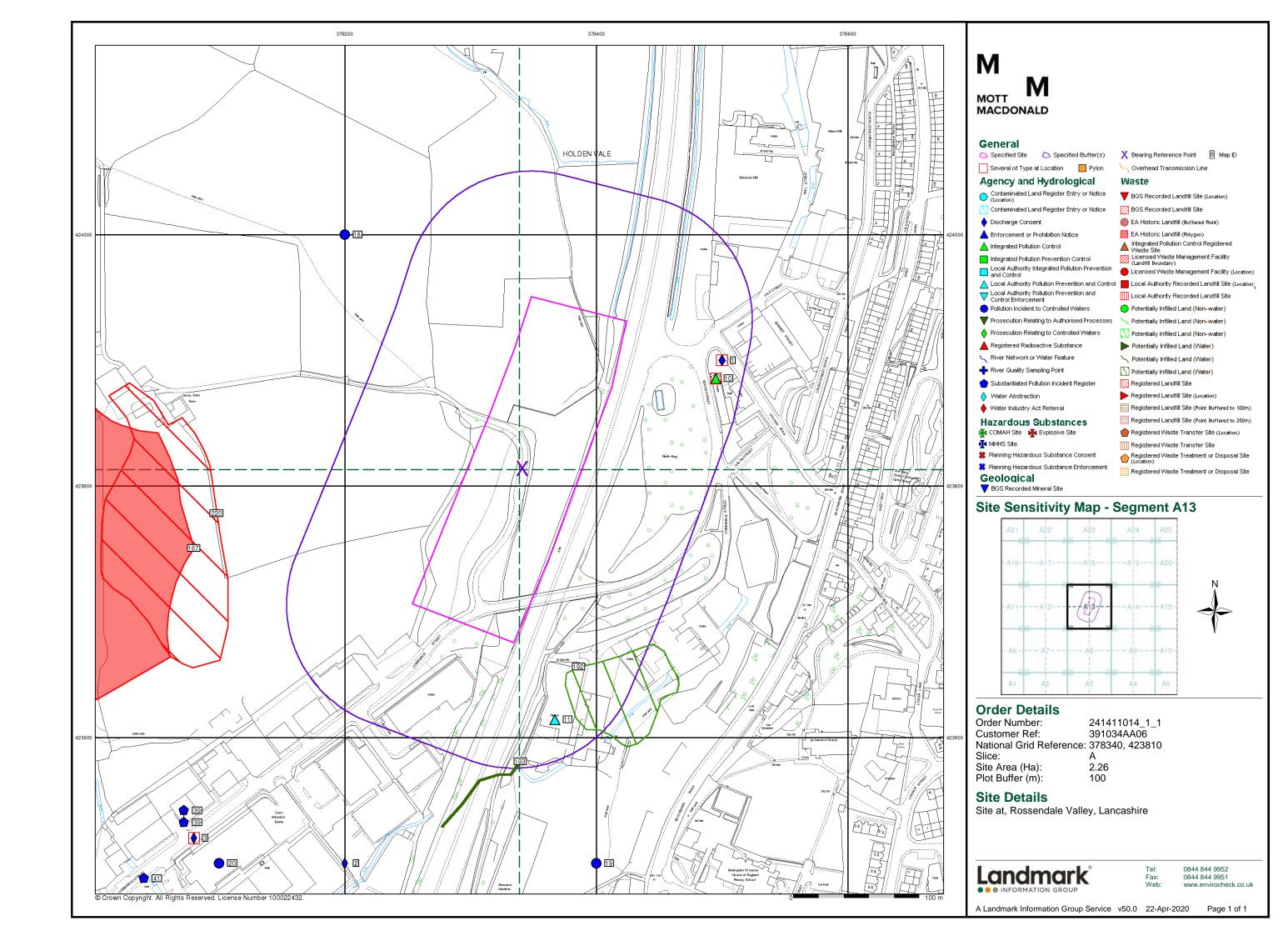
Site at, Rossendale Valley, Lancashire

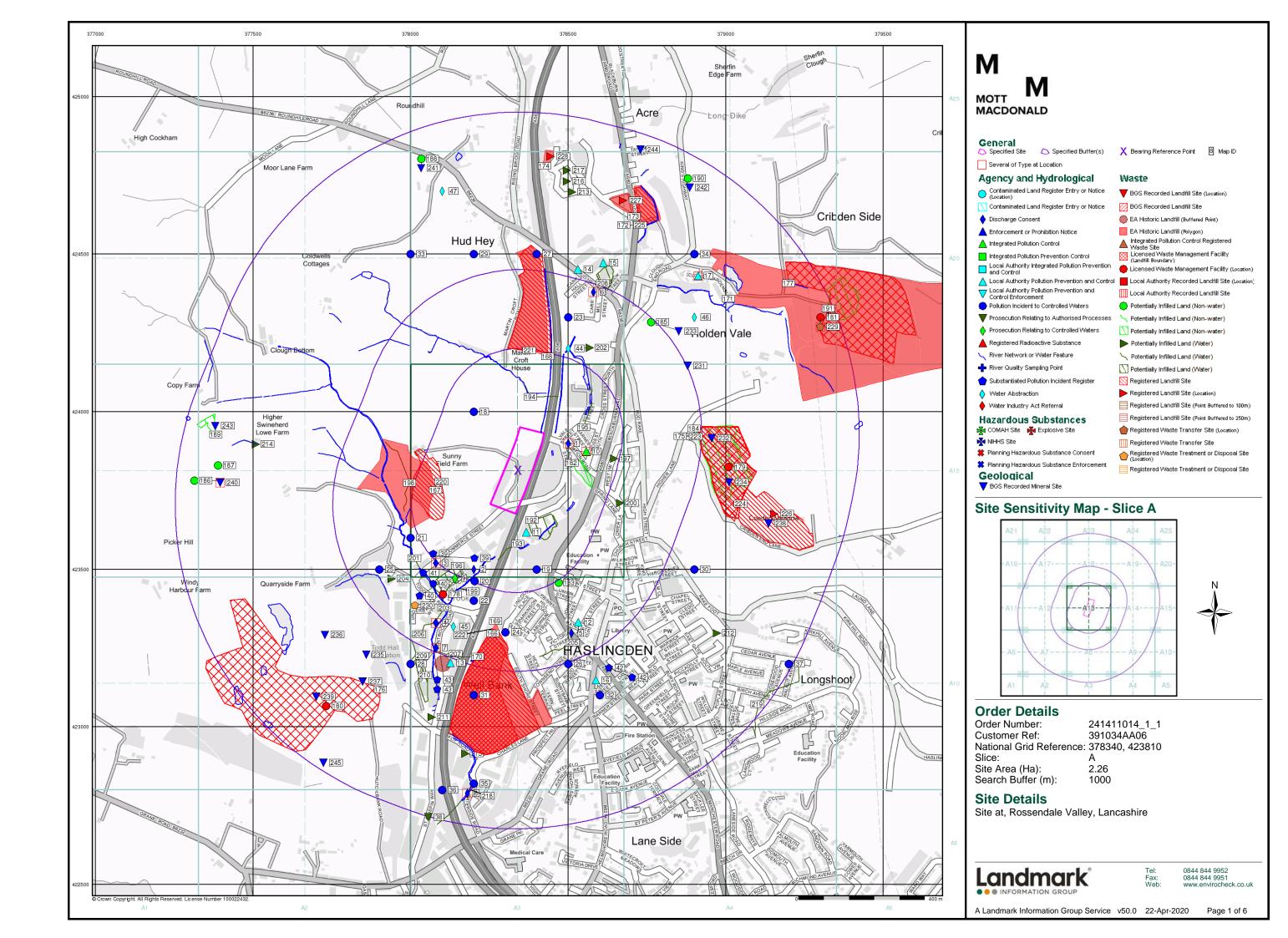


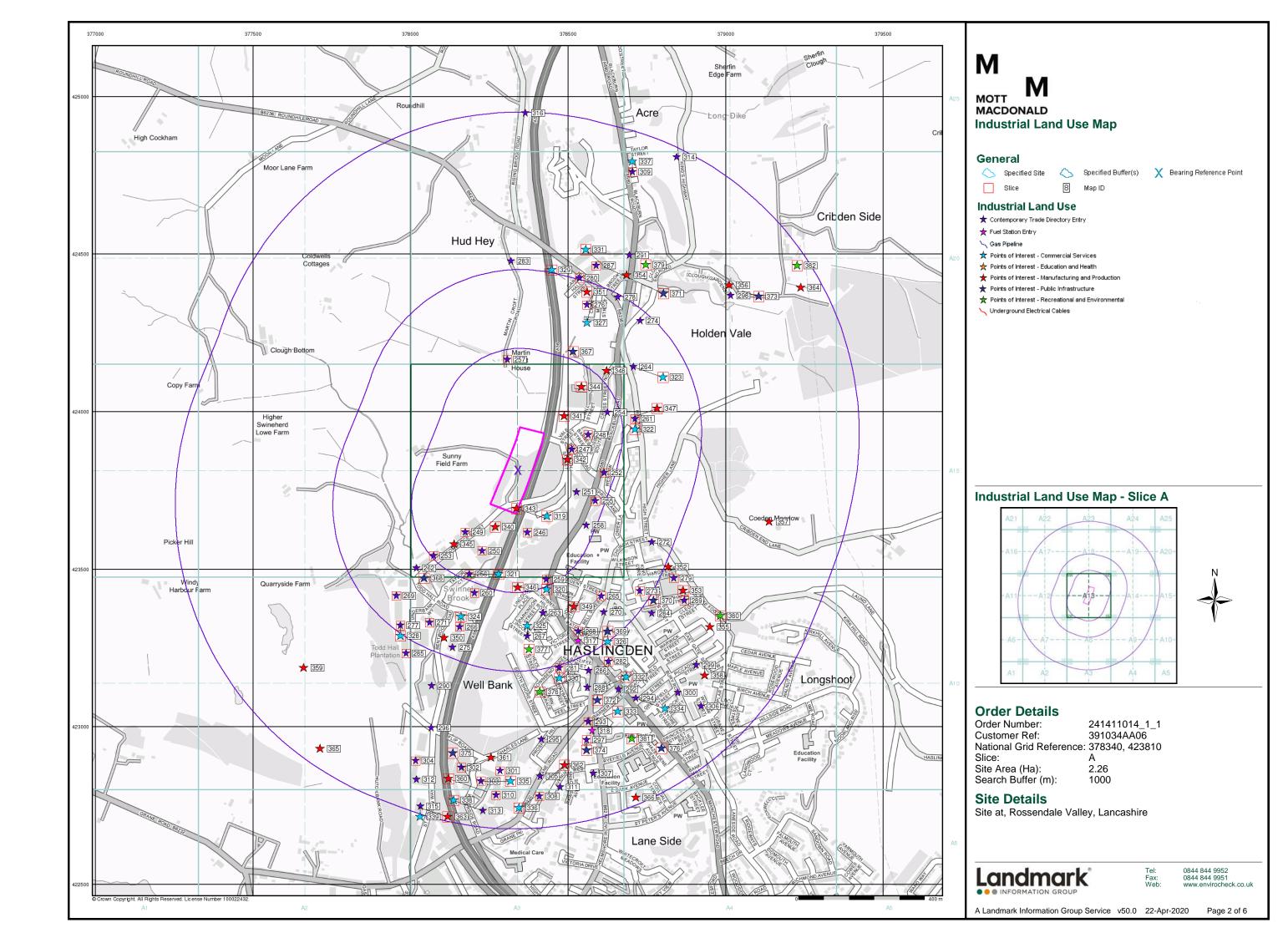
Tel: 0844 844 9952 Fax: 0844 844 9951 Veb: www.envirocheck.c

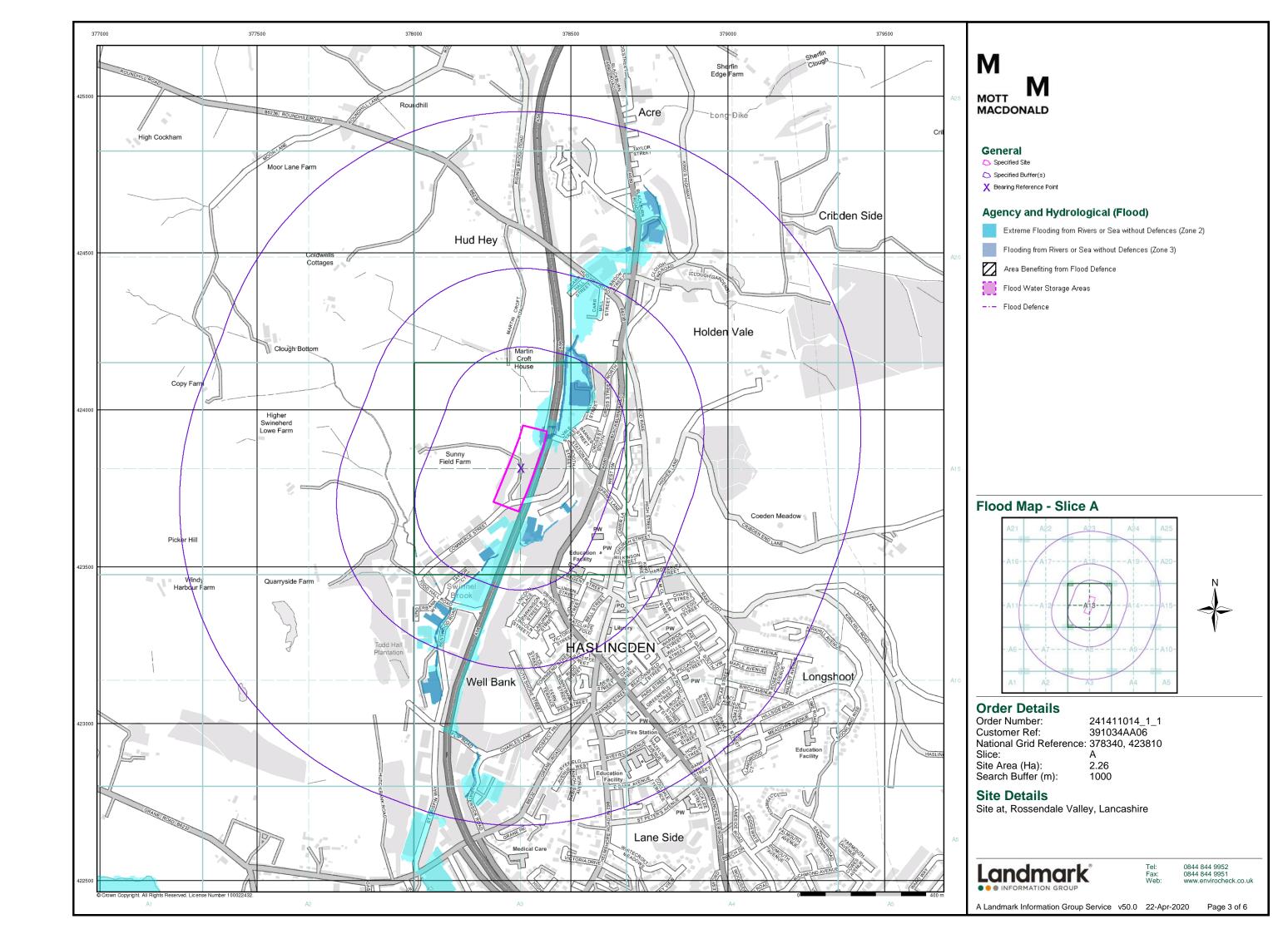
v15.0 22-Apr-2020

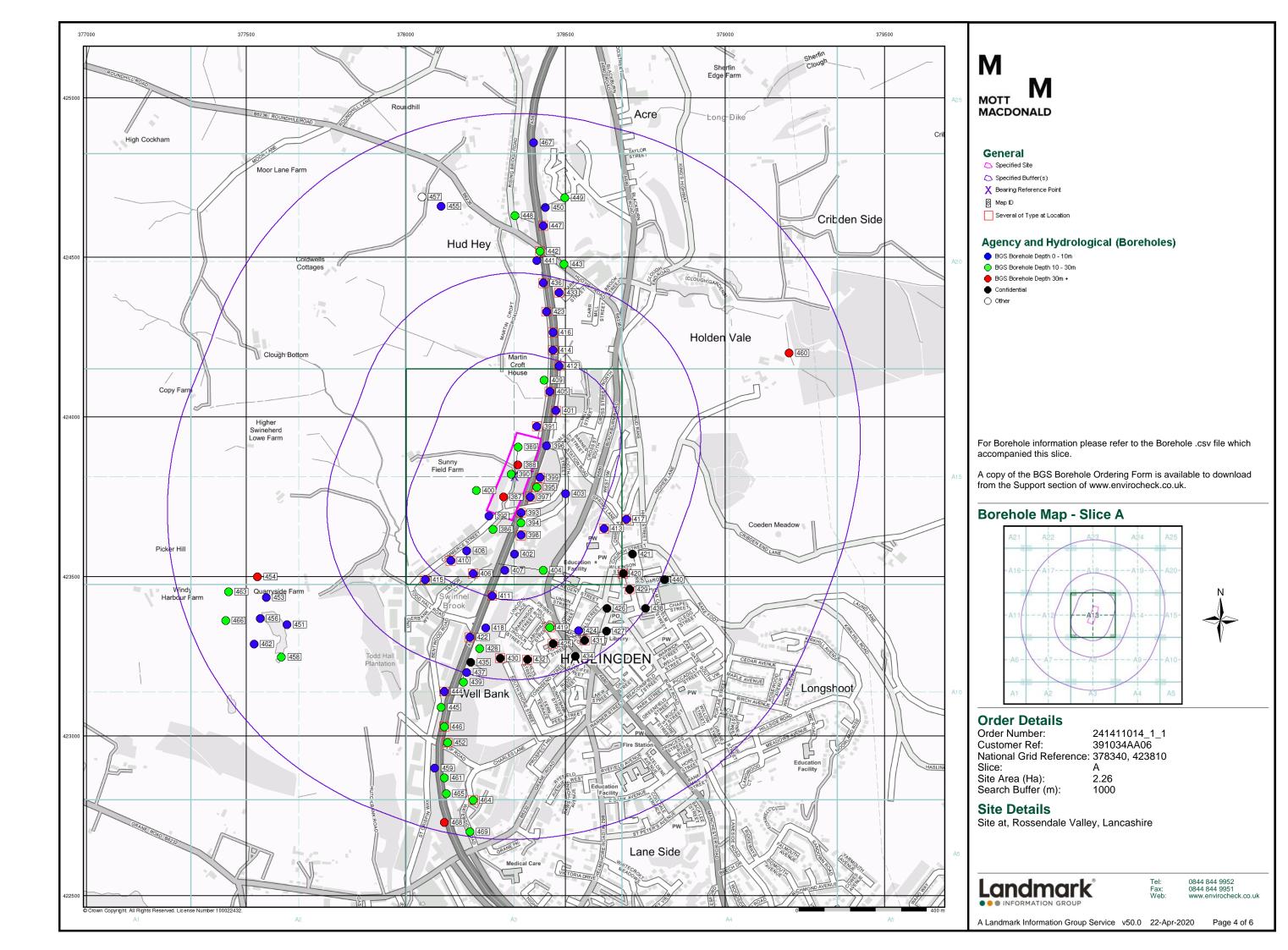
Page 5 of 5

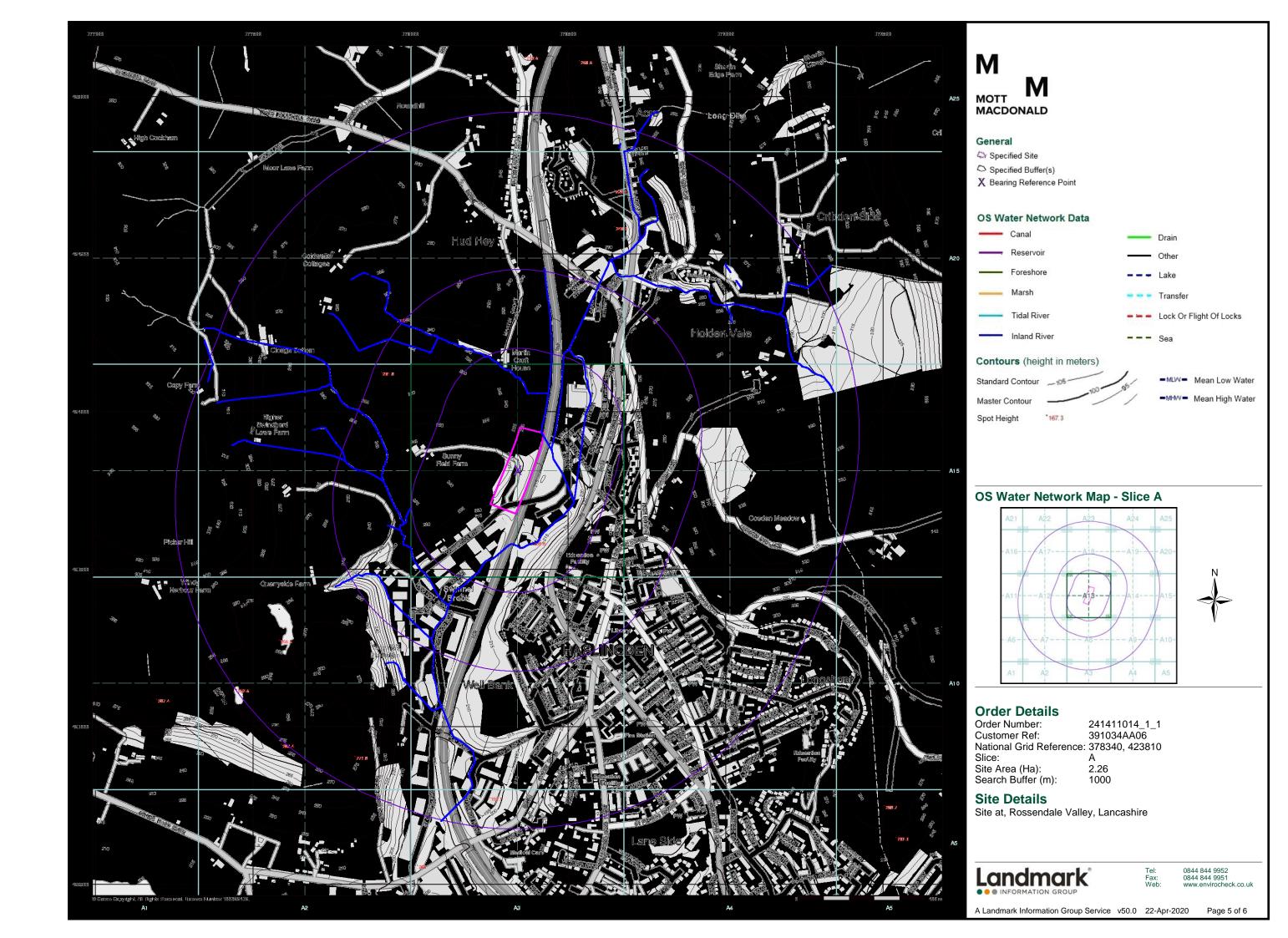


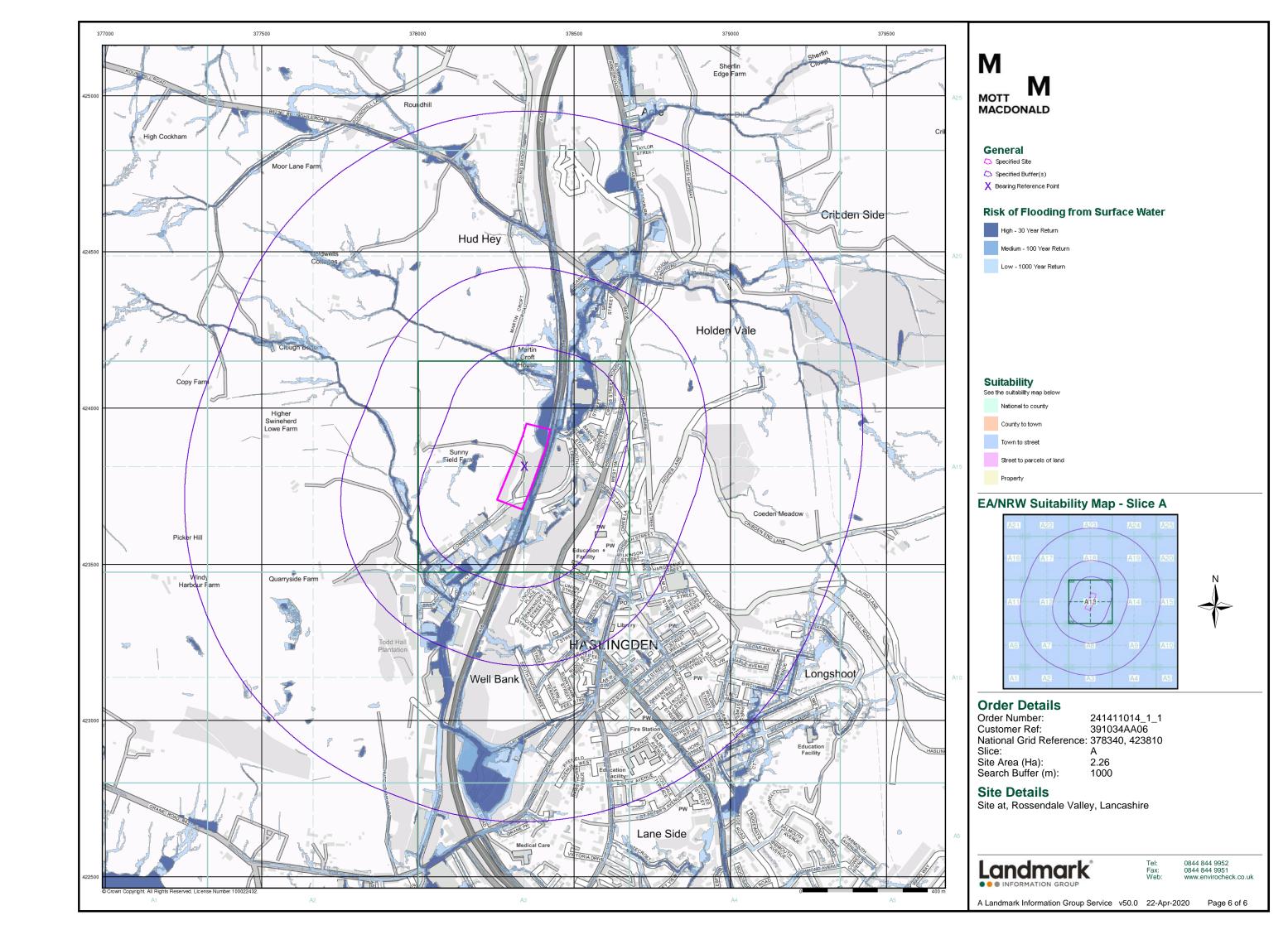


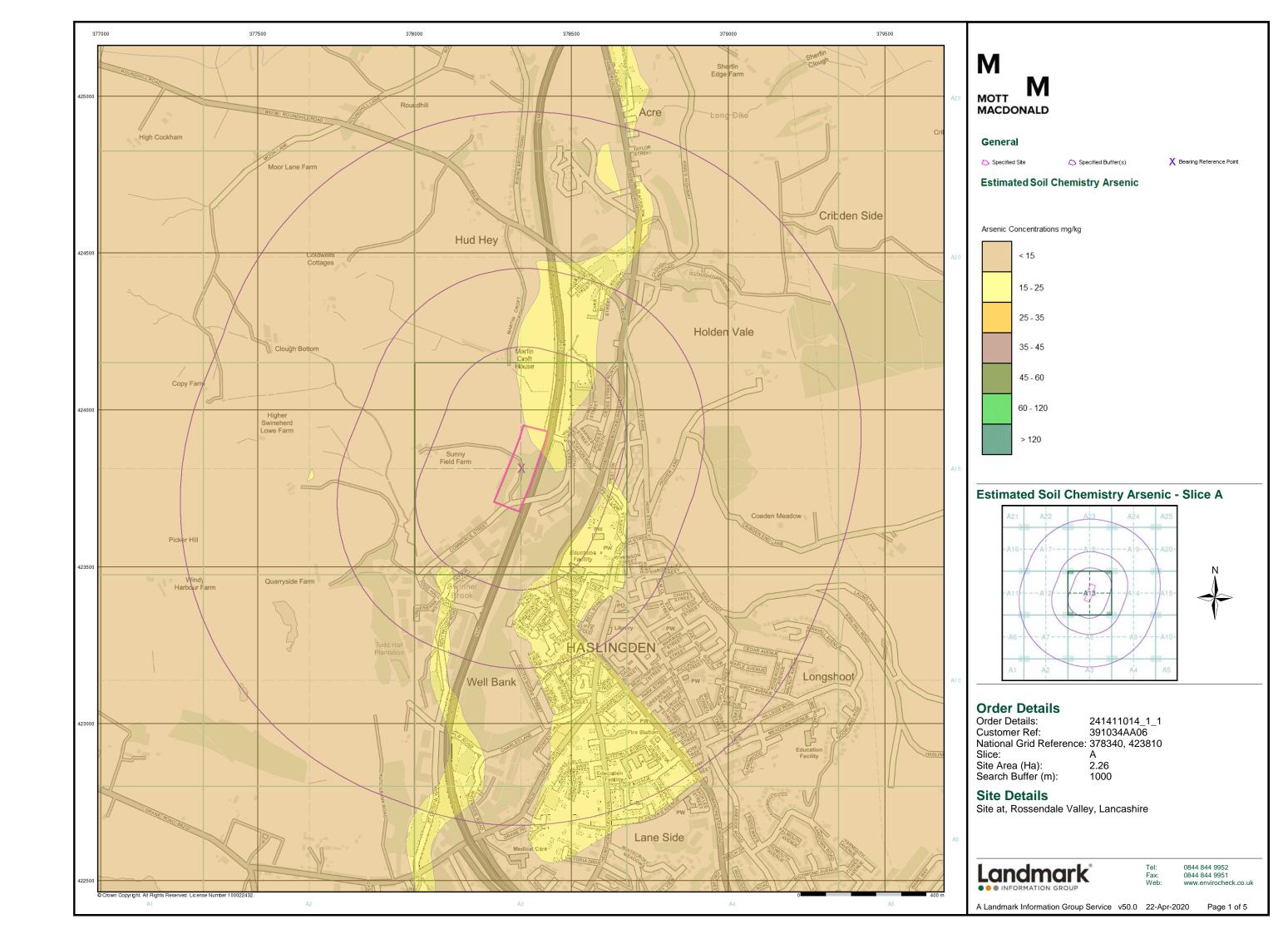


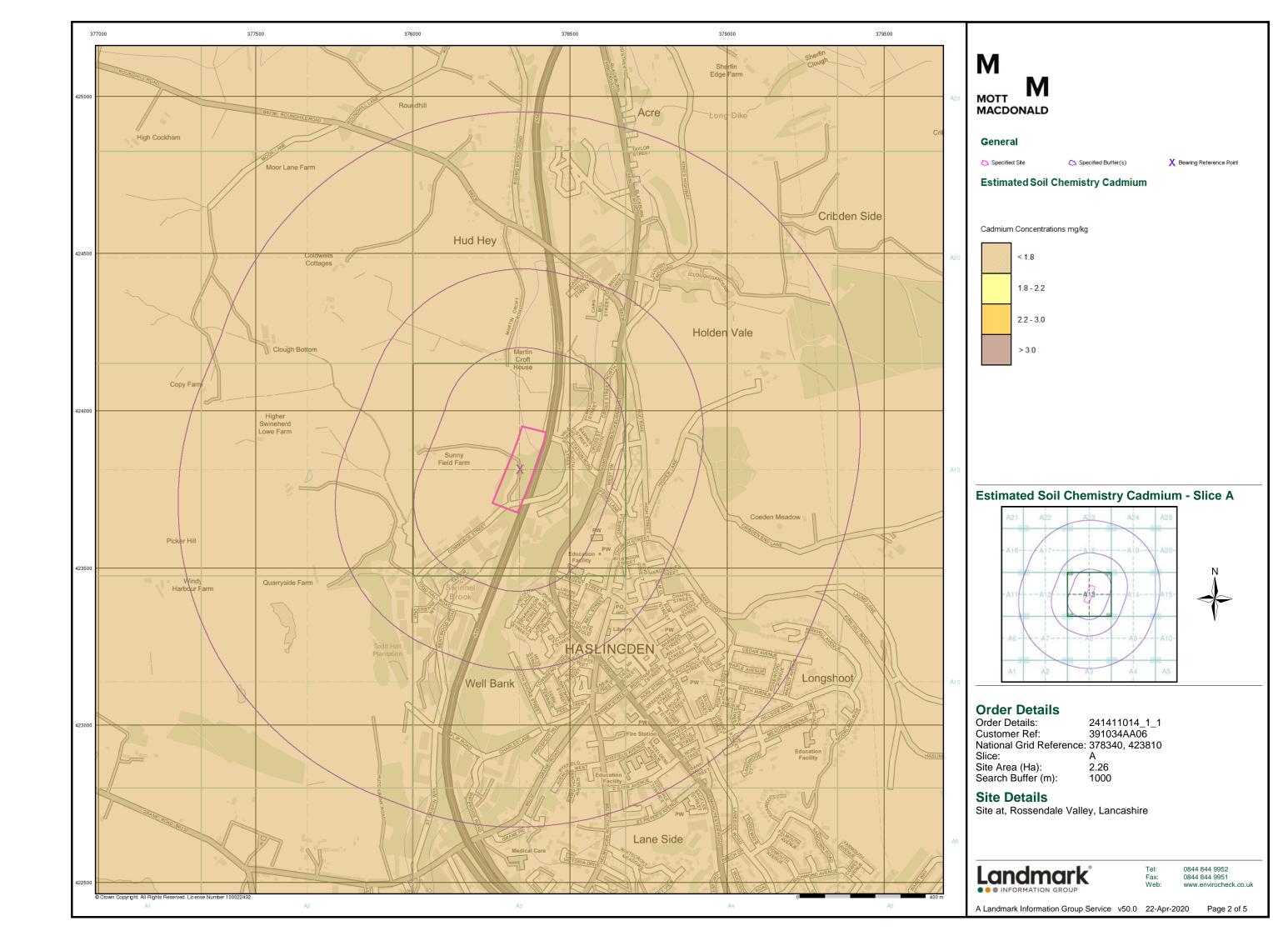


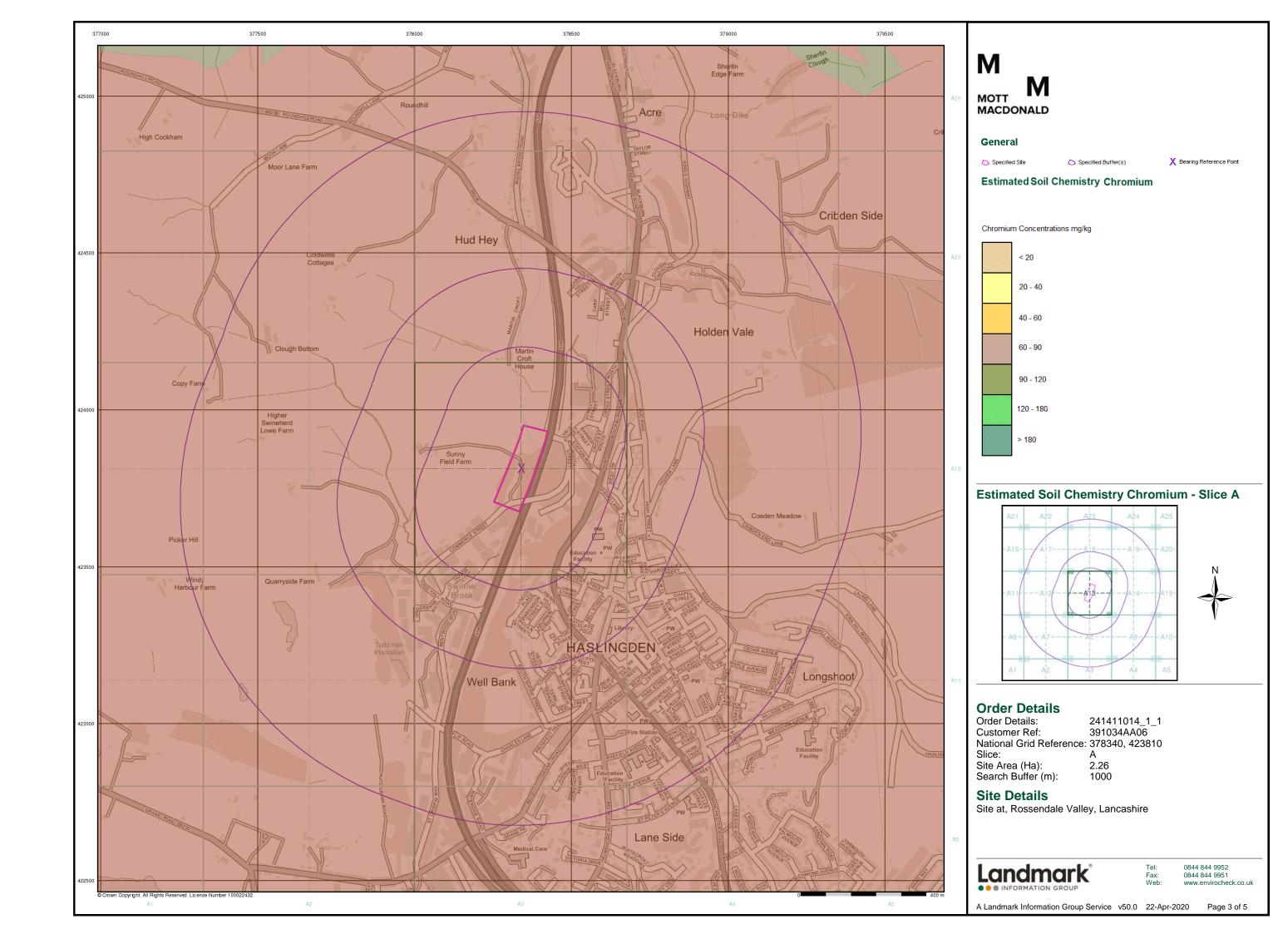


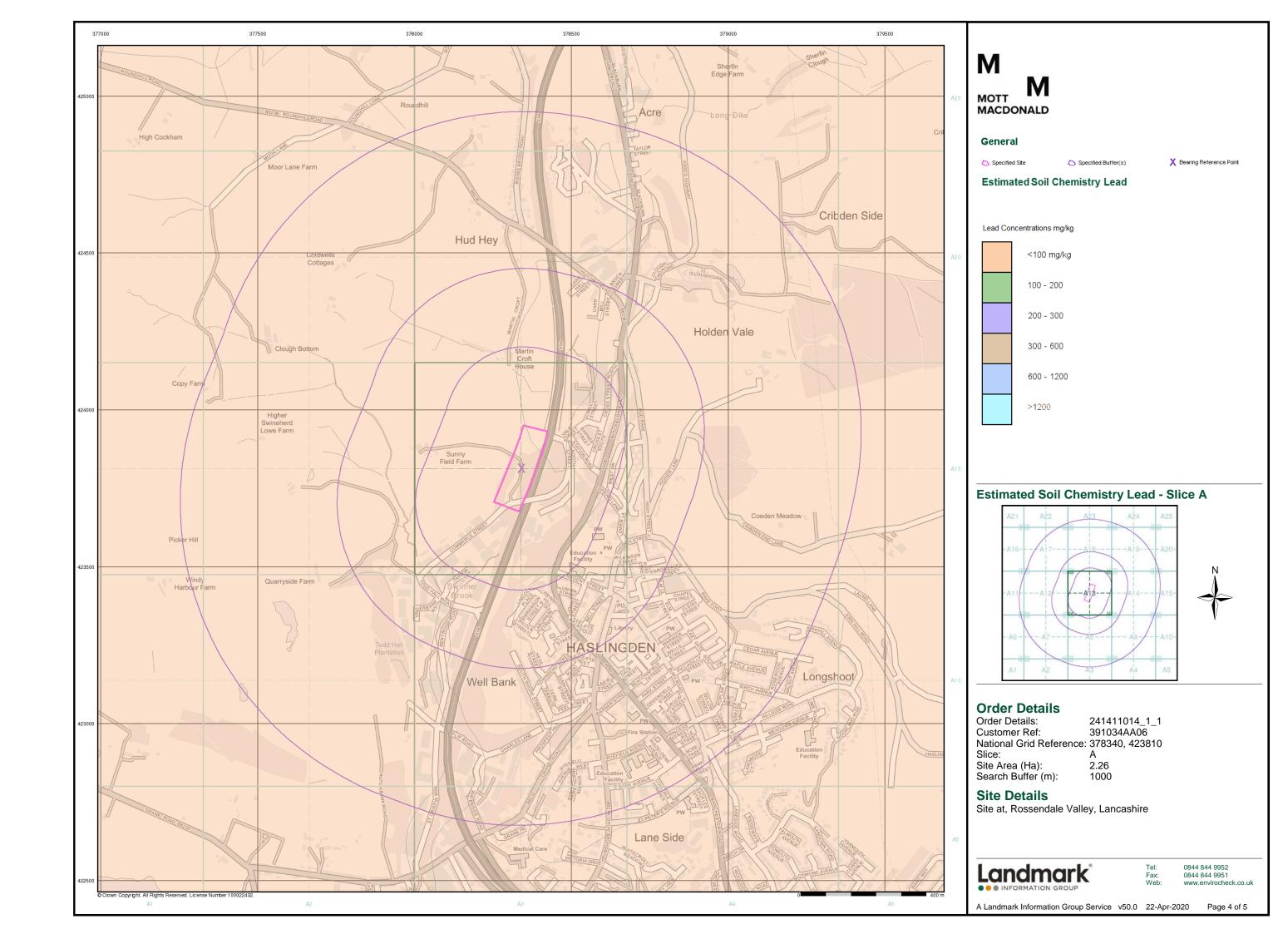


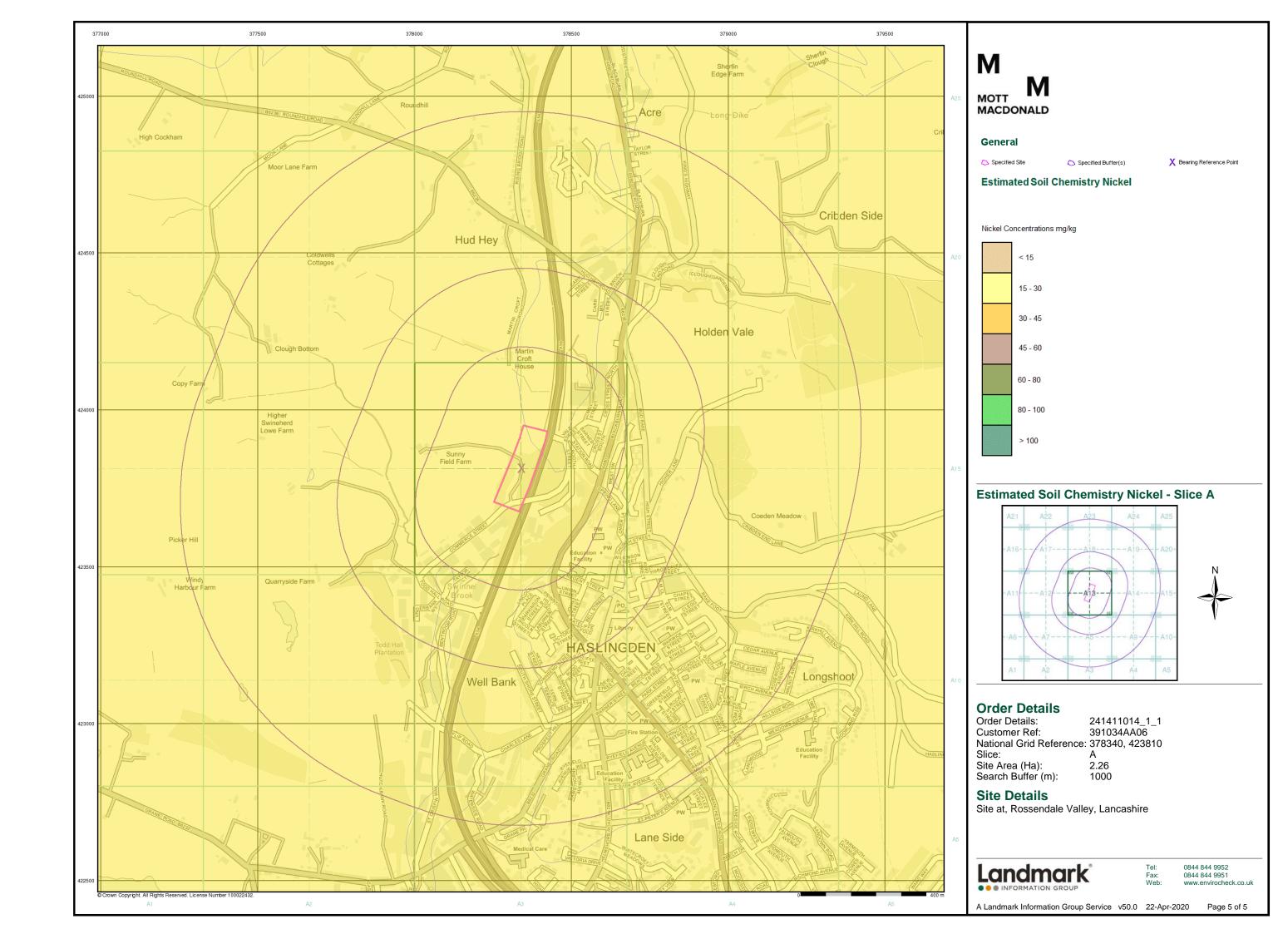














Envirocheck® Report:

Mining and Ground Stability Datasheet

Order Details:

Order Number: 241411014_1_1

Customer Reference: 391034AA06

National Grid Reference:

378340, 423810

Slice:

Α

Site Area (Ha):

2.26

Search Buffer (m):

1000

Site Details:

Site at Rossendale Valley Lancashire

Client Details:

Mr S Myles Mott Macdonald Spring Bank House 33 Stamford Street Altrincham Manchester WA14 1ES







Report Section and Details	Page Number
Summary	-

The Summary section provides an overview of the data contained within the report, detailing the number of data set features or the existence of a data set in relation to the buffer selected.

For ease of reference, the report is broken down into 4 sections of data; Mining and Natural Cavities Data, Historical Land Use Information (1:2,500), Historical Land Use Information (1:10,000) and Ground Stability Data (1:50,000).

Mining and Natural Cavities Data

1

The Mining and Natural Cavities Data section features data sets related to the existence of mining areas and their potential hazards; and details of naturally formed cavities.

Data sets within this section are not plotted, with the exception of BGS Recorded Mineral Sites and Potential Mining Areas which feature on the Historical Land Use Information (1:10,000) map.

Historical Land Use Information (1:2,500)

4

The Historical Land Use Information (1:2,500) section contains data captured from analysis carried out by Landmark of 1:1,250 and 1:2,500 scale historical Ordnance Survey mapping, identifying areas where, historically, the land uses were potentially contaminative.

For the purpose of this Envirocheck module, only historical data relating to mining and ground stability has been included and plotted on the corresponding Historical Land Use Information (1:2,500) map. This section also includes the Subterranean Features data set, which details various man-made and man-used underground spaces obtained from the Subterranea Britannica society.

Historical Land Use Information (1:10,000)

6

The Historical Land Use (1:10,000) section covers data captured from the systematic analysis carried out by Landmark of 1:10, 560 and 1:10,000 scale historical Ordnance Survey mapping dating back to the mid-19th century, identifying potentially contaminative past industrial land uses.

For the purpose of this Envirocheck module, only data relating to mining and ground stability has been included and plotted on the accompanying Historical Land Use Information (1:10,000) map.

Ground Stability Data (1:50,000)

9

The Ground Stability (1:50,000) section includes the BGS Geosure data suite, reporting features to 250m and plotted onto 3 separate maps. Also reported is brine subsidence, brine mining and salt mining data sets, of which Brine Pumping and Salt Mining Related Features are plotted, and subsidence insurance claims and insurance investigations data, which is not plotted.

Historical Map List 11

The Historical Map List section details the historical mapping that has been analysed for your site, in relation to the Historical Land Use Information sections.

Data Currency	12
Data Suppliers	13
Useful Contacts	14

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The brine subsidence data relating to the Driotwich area as provided in this report is derived from JPB studies and physical monitoring undertaken annually over more than 35 years. For more detailed interpretation contact enquiries@jpb.co.uk. JPB retain the copyright and intellectual rights to this data and accept no liability for any loss or damage, including in direct or consequential loss, arising from the use of this data.

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Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m
Mining and Natural Cavities Data					
BGS Recorded Mineral Sites	pg 1				16
Coal Mining Affected Areas	pg 3	Yes	n/a	n/a	n/a
Man Made Mining Cavities					
Mining Instability	pg 3	Yes	n/a	n/a	n/a
Natural Cavities					
Non Coal Mining Areas of Great Britain	pg 3	Yes		n/a	n/a
Potential Mining Areas					
Historical Land Use Information (1:2,500)					
Extractive Industries or Potential Excavations from 1855-1909 (100m)	pg 4	1	2	n/a	n/a
Extractive Industries or Potential Excavations from 1893-1915 (100m)	pg 4	1	3	n/a	n/a
Extractive Industries or Potential Excavations from 1906-1937 (100m)	pg 4	1	3	n/a	n/a
Extractive Industries or Potential Excavations from 1924-1949 (100m)				n/a	n/a
Extractive Industries or Potential Excavations from 1950-1980 (100m)	pg 5	2	3	n/a	n/a
Subterranean Features (100m)				n/a	n/a
Historical Land Use Information (1:10,000)					
Air Shafts					
Disturbed Ground					
General Quarrying	pg 6		1	2	14
Heap, unknown constituents					
Mineral Railway	pg 6				1
Mining & quarrying general					
Mining of coal & lignite					
Quarrying of sand & clay, operation of sand & gravel pits	pg 6			1	1
Former Marshes					
Potentially Infilled Land (Non-Water)	pg 6		1	2	7
Potentially Infilled Land (Water)	pg 7		6	10	12
Ground Stability Data (1:50,000)					
CBSCB Compensation District			n/a	n/a	n/a
Brine Pumping Related Features					
Brine Subsidence Solution Area					
Potential for Collapsible Ground Stability Hazards	pg 9	Yes	Yes	n/a	n/a
Potential for Compressible Ground Stability Hazards	pg 9	Yes	Yes	n/a	n/a
Potential for Ground Dissolution Stability Hazards	pg 9	Yes		n/a	n/a
Potential for Landslide Ground Stability Hazards	pg 9	Yes	Yes	n/a	n/a
Potential for Running Sand Ground Stability Hazards	pg 10	Yes	Yes	n/a	n/a
Potential for Shrinking or Swelling Clay Ground Stability Hazards	pg 10	Yes	Yes	n/a	n/a
Salt Mining Related Features					



Report Version v53.0

Summary

Order Number: 241411014_1_1 Date: 22-Apr-2020 rpr_ec_datasheet v53.0 A Landmark Information Group Service



Order Number: 241411014_1_1

Mining and Natural Cavities Data

Map ID		Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
1	BGS Recorded Mine Site Name: Location: Source: Reference: Type: Status: Operator: Operator Location: Periodic Type: Geology: Commodity: Positional Accuracy:	caral Sites Carr Mill Haslingden, Lancashire British Geological Survey, National Geoscience Information Service 93576 Opencast Ceased Unknown Operator Not Supplied Carboniferous Lower Haslingden Flags Sandstone Located by supplier to within 10m	A14NW (NE)	505	1	378878 424150
2	BGS Recorded Mine Site Name: Location: Source: Reference: Type: Status: Operator: Operator Location: Periodic Type: Geology: Commodity: Positional Accuracy:	eral Sites Top O' Slate Haslingden, Rossendale, Lancashire British Geological Survey, National Geoscience Information Service 19355 Opencast Ceased Unknown Operator Not Supplied Carboniferous Upper Haslingden Flags Sandstone Located by supplier to within 10m	A14NW (E)	532	1	378955 423920
3	BGS Recorded Mine Site Name: Location: Source: Reference: Type: Status: Operator: Operator Location: Periodic Type: Geology: Commodity: Positional Accuracy:	eral Sites Clough End Haslingden, Lancashire British Geological Survey, National Geoscience Information Service 93575 Opencast Ceased Unknown Operator Not Supplied Carboniferous Lower Haslingden Flags Sandstone Located by supplier to within 10m	A19SW (NE)	538	1	378850 424259
4	BGS Recorded Mine Site Name: Location: Source: Reference: Type: Status: Operator: Operator Location: Periodic Type: Geology: Commodity: Positional Accuracy:	Top O' Slate Haslingden, Lancashire British Geological Survey, National Geoscience Information Service 9644 Opencast Ceased Unknown Operator Not Supplied Carboniferous Lower Haslingden Flags Sandstone Located by supplier to within 10m	A14SW (E)	605	1	379010 423780
5	BGS Recorded Mine Site Name: Location: Source: Reference: Type: Status: Operator: Operator Location: Periodic Type: Geology: Commodity: Positional Accuracy:	Peral Sites Hutch Bank Haslingden, Lancashire British Geological Survey, National Geoscience Information Service 93596 Opencast Ceased Unknown Operator Not Supplied Carboniferous Lower Haslingden Flags Sandstone Located by supplier to within 10m	A7NE (SW)	617	1	377859 423233
6	BGS Recorded Mine Site Name: Location: Source: Reference: Type: Status: Operator: Operator Location: Periodic Type: Geology: Commodity:	• • • • • • • • • • • • • • • • • • • •	A7NE (SW)	667	1	377728 423296



Mining and Natural Cavities Data

Map ID		Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
7	BGS Recorded Mine Site Name: Location: Source: Reference: Type: Status: Operator: Operator Location: Periodic Type: Geology: Commodity: Positional Accuracy:	Hutch Bank Haslingden, Lancashire British Geological Survey, National Geoscience Information Service 93597 Opencast Ceased Unknown Operator Not Supplied Carboniferous Lower Haslingden Flags Sandstone Located by supplier to within 10m	A7NE (SW)	691	1	377847 423148
8	BGS Recorded Mine Site Name: Location: Source: Reference: Type: Status: Operator: Operator Location: Periodic Type: Geology: Commodity: Positional Accuracy:	eral Sites Top O' Slate Haslingden, Rossendale, Lancashire British Geological Survey, National Geoscience Information Service 19354 Opencast Ceased Unknown Operator Not Supplied Carboniferous Upper Haslingden Flags Sandstone Located by supplier to within 10m	A14SE (E)	759	1	379135 423650
9	BGS Recorded Mine Site Name: Location: Source: Reference: Type: Status: Operator: Operator Location: Periodic Type: Geology: Commodity: Positional Accuracy:	Hutch Bank Haslingden, Lancashire British Geological Survey, National Geoscience Information Service 2645 Opencast Ceased Bardon Aggregates - Northern Not Supplied Carboniferous Lower Haslingden Flags Sandstone	A7SE (SW)	822	1	377700 423100
10	BGS Recorded Mine Site Name: Location: Source: Reference: Type: Status: Operator: Operator Location: Periodic Type: Geology: Commodity: Positional Accuracy:	Higher Swineheard Lowe Haslingden, Lancashire British Geological Survey, National Geoscience Information Service 93592 Opencast Ceased Unknown Operator Not Supplied Carboniferous Millstone Grit Group Sandstone Located by supplier to within 10m	A12SW (W)	862	1	377395 423779
10	BGS Recorded Mine Site Name: Location: Source: Reference: Type: Status: Operator: Operator Location: Periodic Type: Geology: Commodity: Positional Accuracy:	Higher Swineheard Lowe Haslingden, Lancashire British Geological Survey, National Geoscience Information Service 93593 Opencast Ceased Unknown Operator Not Supplied Carboniferous Millstone Grit Group Sandstone Located by supplier to within 10m	A12NW (W)	874	1	377388 423824
11	BGS Recorded Mine Site Name: Location: Source: Reference: Type: Status: Operator: Operator Location: Periodic Type: Geology: Commodity: Positional Accuracy:	Round Hill Haslingden, Lancashire British Geological Survey, National Geoscience Information Service 93565 Opencast Ceased Unknown Operator Not Supplied Carboniferous Millstone Grit Group Sandstone Located by supplier to within 10m	A18NW (N)	885	1	378033 424777

Order Number: 241411014_1_1



Mining and Natural Cavities Data

Map ID		Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Recorded Mine	eral Sites				
12	Site Name: Location: Source: Reference: Type: Status: Operator: Operator Location: Periodic Type: Geology: Commodity: Positional Accuracy:	Acre Haslingden, Lancashire British Geological Survey, National Geoscience Information Service 93567 Opencast Ceased Unknown Operator Not Supplied Carboniferous Lower Haslingden Flags Sandstone Located by supplier to within 10m	A19NW (NE)	910	1	378885 424715
	BGS Recorded Mine	eral Sites				
13	Site Name: Location: Source: Reference: Type: Status: Operator: Operator Location: Periodic Type: Geology: Commodity: Positional Accuracy:	Copy Farm Haslingden, Lancashire British Geological Survey, National Geoscience Information Service 93577 Opencast Ceased Unknown Operator Not Supplied Carboniferous Millstone Grit Group Sandstone Located by supplier to within 10m	A12NW (W)	910	1	377380 423959
	BGS Recorded Mine	eral Sites				
14	Site Name: Location: Source: Reference: Type: Status: Operator: Operator Location: Periodic Type: Geology: Commodity: Positional Accuracy:	Acre Acre, Haslingden, Lancashire British Geological Survey, National Geoscience Information Service 93620 Opencast Ceased Unknown Operator Not Supplied Carboniferous Lower Haslingden Flags Sandstone Located by supplier to within 10m	A24SW (N)	955	1	378729 424836
	BGS Recorded Mine	eral Sites				
15	Site Name: Location: Source: Reference: Type: Status: Operator: Operator Location: Periodic Type: Geology: Commodity: Positional Accuracy:	Hutch Bank Haslingden, Lancashire British Geological Survey, National Geoscience Information Service 93602 Opencast Ceased Unknown Operator Not Supplied Carboniferous Lower Haslingden Flags Sandstone Located by supplier to within 10m	A7SE (SW)	974	1	377723 422890
-	Coal Mining Affecte	d Areas				
	Description:	In an area which may be affected by coal mining activity. It is recommended that a coal mining report is obtained from the Coal Authority. Contact details are included in the Useful Contacts section of this report.	A13NE (SW)	0	2	378341 423814
	Mining Instability					
	Mining Evidence: Source: Boundary Quality:	Inconclusive Coal Mining Ove Arup & Partners As Supplied	A13NE (SW)	0	3	378341 423814
	Non Coal Mining Ar	eas of Great Britain				
	Risk: Source:	Rare British Geological Survey, National Geoscience Information Service	A13NE (SW)	0	1	378341 423814



Order Number: 241411014_1_1

Historical Land Use Information (1:2,500)

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
16	Extractive Industries or Potential Excavations from 1855-1909 Use: Railway Cutting First Map Published 1893 Date: Last Map Published Not Applicable Date:	A13SE (S)	0	-	378350 423738
17	Extractive Industries or Potential Excavations from 1855-1909 Use: Tunnel First Map Published 1893 Date: Last Map Published Not Applicable Date:	A13SE (E)	18	-	378399 423793
18	Extractive Industries or Potential Excavations from 1855-1909 Use: Reservoir First Map Published 1893 Date: Last Map Published Not Applicable Date:	A13SE (SE)	81	-	378420 423662
19	Extractive Industries or Potential Excavations from 1893-1915 Use: Unspecified Pit First Map Published 1911 Date: Last Map Published Not Applicable Date:	A13SE (S)	0	-	378354 423737
20	Extractive Industries or Potential Excavations from 1893-1915 Use: Tunnel First Map Published 1911 Date: Last Map Published Not Applicable Date:	A13SE (E)	16	-	378400 423796
21	Extractive Industries or Potential Excavations from 1893-1915 Use: Railway Embankment First Map Published 1911 Date: Last Map Published Not Applicable Date:	A13SE (S)	40	-	378358 423642
22	Extractive Industries or Potential Excavations from 1893-1915 Use: Reservoir First Map Published 1911 Date: Reservoir First Map Published Not Applicable Date:	A13SE (SE)	77	-	378418 423664
23	Extractive Industries or Potential Excavations from 1906-1937 Use: Railway Cutting First Map Published 1930 Date: Railway Cutting Date: Railway Cutting	A13SE (S)	0	-	378351 423736
24	Extractive Industries or Potential Excavations from 1906-1937 Use: Tunnel First Map Published 1930 Date: Last Map Published Not Applicable Date:	A13SE (E)	16	-	378398 423794
25	Extractive Industries or Potential Excavations from 1906-1937 Use: Railway Embankment First Map Published 1930 Date: Railway Embankment Analogue Published Not Applicable Date:	A13SW (S)	44	-	378330 423632
26	Extractive Industries or Potential Excavations from 1906-1937 Use: Reservoir First Map Published 1930 Date: Last Map Published Not Applicable Date:	A13SE (SE)	77	-	378414 423663



Historical Land Use Information (1:2,500)

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
27	Extractive Industries or Potential Excavations from 1950-1980 Use: Railway Cutting	A13NE	0		378391
21	Use: Railway Cutting First Map Published 1961 Date: Last Map Published N/A Date:	(E)	0	-	423832
	Extractive Industries or Potential Excavations from 1950-1980				
28	Use: Railway Cutting First Map Published 1961 Date: Last Map Published N/A Date:	A13SW (S)	0	-	378337 423704
	Extractive Industries or Potential Excavations from 1950-1980				
29	Use: North Hag Tunnel First Map Published 1961 Date: Last Map Published N/A Date:	A13SE (E)	17	-	378399 423795
	Extractive Industries or Potential Excavations from 1950-1980				
30	Use: Unspecified Deposited Material First Map Published 1961 Date: Last Map Published N/A Date:	A13SE (SE)	93	ı	378431 423667
	Extractive Industries or Potential Excavations from 1950-1980				
31	Use: Unspecified Deposited Material First Map Published 1961 Date: Last Map Published 1961 Date:	A13NE (NE)	98	-	378493 424000

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Historical Land Use Information (1:10,000)

Map ID		Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
32	General Quarrying Use: Date of Mapping:	Not Supplied 1849	A13NE (E)	109	-	378512 423837
33	General Quarrying Use:	Not Supplied	A14NW	452	-	378822
	Date of Mapping: General Quarrying	1849 - 1894	(NE)			424144
34	Use: Date of Mapping: General Quarrying	Not Supplied 1849 - 1911	A14NW (E)	477	-	378900 423928
35	Use: Date of Mapping:	Not Supplied 1849	A14NW (E)	511	-	378934 423926
36	General Quarrying Use: Date of Mapping:	Not Supplied 1849	A19SW (NE)	536	-	378848 424259
37	General Quarrying Use: Date of Mapping:	Not Supplied 1849 - 1990	A7NE (SW)	562	-	377864 423302
38	General Quarrying Use: Date of Mapping:	Not Supplied 1849	A7NE (SW)	586	-	377877 423258
39	General Quarrying Use: Date of Mapping:	Not Supplied 1849	A7NE (SW)	649	-	377889 423170
40	General Quarrying Use: Date of Mapping:	Not Supplied 1849	A7NE (SW)	665	-	377724 423305
41	General Quarrying Use: Date of Mapping:	Not Supplied 1849	A12SW (W)	858	-	377399 423782
41	General Quarrying Use: Date of Mapping:	Not Supplied 1849 - 1911	A12NW (W)	873	-	377389 423829
42	General Quarrying Use: Date of Mapping:	Not Supplied 1849	A18NW (N)	884	-	378033 424777
43	General Quarrying Use: Date of Mapping:	Not Supplied 1849 - 1911	A12NW (W)	899	-	377382 423927
44	General Quarrying Use: Date of Mapping:	Not Supplied 1849	A19NW (NE)	913	-	378880 424722
45	General Quarrying Use: Date of Mapping:	Not Supplied 1912	A19SE (NE)	935	-	379226 424411
46	General Quarrying Use: Date of Mapping:	Not Supplied 1912	A24SW (N)	955	-	378729 424836
47	General Quarrying Use: Date of Mapping:	Not Supplied 1894	A7SW (SW)	993	-	377523 423035
48	Mineral Railway Use: Date of Mapping:	Not Supplied 1894 - 1931	A7SE (SW)	988	-	377805 422826
49	Quarrying of sand of Use: Date of Mapping:	& clay, operation of sand & gravel pits Not Supplied 1849	A8NE (S)	257	-	378469 423458
50	Quarrying of sand a Use: Date of Mapping:	& clay, operation of sand & gravel pits Not Supplied 1955	A14SE (E)	762	-	379102 423550
51	Potentially Infilled I Use: Date of Mapping:	Land (Non-Water) Unknown Filled Ground (Pit, quarry etc) 1990	A13NE (E)	109	-	378512 423837

Date: 22-Apr-2020

rpr_ec_datasheet v53.0

A Landmark Information Group Service



Historical Land Use Information (1:10,000)

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
52	Potentially Infilled Land (Non-Water) Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1990	A8NE (S)	257	-	378469 423458
53	Potentially Infilled Land (Non-Water) Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1990	A14NW	477	-	378900 423926
54	Potentially Infilled Land (Non-Water) Use: Unknown Filled Ground (Pit, quarry etc)	(E)	536	-	378848
	Date of Mapping: 1990 Potentially Infilled Land (Non-Water)	(NE)			424259
55	Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1990	A12SW (W)	858	-	377399 423782
56	Potentially Infilled Land (Non-Water) Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1990	A12NW (W)	873	-	377389 423829
57	Potentially Infilled Land (Non-Water) Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1990	A18NW (N)	884	-	378033 424777
58	Potentially Infilled Land (Non-Water) Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1990	A12NW (W)	899	-	377382 423927
59	Potentially Infilled Land (Non-Water) Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1990	A19NW (NE)	913	-	378880 424722
60	Potentially Infilled Land (Non-Water) Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1990	A19SE (NE)	978	-	379326 424308
61	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1849	A13SE (S)	49	-	378386 423656
62	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1955	A13SE (S)	95	-	378340 423581
63	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1849	A13NE (N)	102	-	378381 424047
64	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1849	A13NE (NE)	127	-	378549 423950
65	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1955	A13SW (SW)	222	-	378149 423511
66	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1955	A13NE (E)	231	-	378642 423851
67	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1955	A12SE (W)	266	-	377997 423774
68	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1955	A8NW (SW)	285	-	378158 423438
69	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1931	A13SE (E)	291	-	378660 423710
70	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1955	A13SW (SW)	297	-	378012 423535
71	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1955	A18SE (NE)	299	-	378548 424203
72	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1955	A8NW (SW)	360	-	378108 423378

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Historical Land Use Information (1:10,000)

Map ID		Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Potentially Infilled	Land (Water)				
73	Use: Date of Mapping:	Unknown Filled Ground (Pond, marsh, river, stream, dock etc) 1849	A12SE (SW)	373	-	377949 423492
	Potentially Infilled	Land (Water)				
74	Use: Date of Mapping:	Unknown Filled Ground (Pond, marsh, river, stream, dock etc) 1849	A8NE (S)	447	-	378515 423267
	Potentially Infilled	Land (Water)				
75	Use: Date of Mapping:	Unknown Filled Ground (Pond, marsh, river, stream, dock etc) 1955	A8NW (SW)	471	-	378028 423293
	Potentially Infilled	Land (Water)				
76	Use: Date of Mapping:	Unknown Filled Ground (Pond, marsh, river, stream, dock etc) 1955	A8NW (S)	491	-	378123 423231
	Potentially Infilled	Land (Water)				
77	Use: Date of Mapping:	Unknown Filled Ground (Pond, marsh, river, stream, dock etc) 1849	A18SE (NE)	502	-	378610 424397
	Potentially Infilled	Land (Water)				
78	Use: Date of Mapping:	Unknown Filled Ground (Pond, marsh, river, stream, dock etc) 1931	A8NW (SW)	533	-	378036 423221
	Potentially Infilled	Land (Water)				
79	Use: Date of Mapping:	Unknown Filled Ground (Pond, marsh, river, stream, dock etc) 1849	A8NW (SW)	579	-	378053 423164
	Potentially Infilled	Land (Water)				
80	Use: Date of Mapping:	Unknown Filled Ground (Pond, marsh, river, stream, dock etc) 1955	A8SW (S)	699	-	378063 423031
	Potentially Infilled	Land (Water)				
81	Use: Date of Mapping:	Unknown Filled Ground (Pond, marsh, river, stream, dock etc) 1911	A9NW (SE)	739	ı	378969 423297
	Potentially Infilled	Land (Water)				
82	Use: Date of Mapping:	Unknown Filled Ground (Pond, marsh, river, stream, dock etc) 1955	A18NE (N)	764	-	378509 424697
	Potentially Infilled	Land (Water)				
83	Use: Date of Mapping:	Unknown Filled Ground (Pond, marsh, river, stream, dock etc) 1955	A12NW (W)	773	-	377505 423897
	Potentially Infilled	` '				
84	Use: Date of Mapping:	Unknown Filled Ground (Pond, marsh, river, stream, dock etc) 1955	A8SW (S)	779	-	378169 422915
	Potentially Infilled	Land (Water)				
85	Use: Date of Mapping:	Unknown Filled Ground (Pond, marsh, river, stream, dock etc) 1912	A18NE (N)	794	-	378492 424731
	Potentially Infilled	` ,				
86	Use: Date of Mapping:	Unknown Filled Ground (Pond, marsh, river, stream, dock etc) 1912	A18NE (N)	828	-	378492 424765
	Potentially Infilled	Land (Water)				
87	Use: Date of Mapping:	Unknown Filled Ground (Pond, marsh, river, stream, dock etc) 1955	A3NW (S)	889	-	378191 422799
	Potentially Infilled	Land (Water)				
88	Use: Date of Mapping:	Unknown Filled Ground (Pond, marsh, river, stream, dock etc) 1931	A9SE (SE)	976	-	379100 423071



Ground Stability Data (1:50,000)

/lap ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	CBSCB Compensation District The site does not fall within the brine compensation area.				
	Brine Subsidence Solution Area				
	The site does not fall within the brine subsidence solution area.				
	Potential for Collapsible Ground Stability Hazards				
89	Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13NE (SW)	0	1	378341 423814
	Potential for Collapsible Ground Stability Hazards	(211)			
90	Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13NE (E)	79	1	378498 423845
	Potential for Collapsible Ground Stability Hazards				
	Hazard Potential: No Hazard Source: No Hazard British Geological Survey, National Geoscience Information Service	A13NE (NE)	0	1	378412 423900
	Potential for Compressible Ground Stability Hazards				
91	Hazard Potential: Moderate Source: Moderate British Geological Survey, National Geoscience Information Service	A13NE (SW)	0	1	378341 423814
	Potential for Compressible Ground Stability Hazards				
92	Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13SW (S)	22	1	378303 423664
	Potential for Compressible Ground Stability Hazards				
93	Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	A13SW (W)	234	1	378027 423795
	Potential for Compressible Ground Stability Hazards	(۷۷)			423793
	Hazard Potential: No Hazard	A13NE	0	1	378339
	Source: British Geological Survey, National Geoscience Information Service	(N)			423859
	Potential for Compressible Ground Stability Hazards	A13SE	26	1	270204
	Hazard Potential: No Hazard Source: No Hazard British Geological Survey, National Geoscience Information Service	(S)	36	1	378381 423670
	Potential for Compressible Ground Stability Hazards				
	Hazard Potential: No Hazard Source: No Hazard British Geological Survey, National Geoscience Information Service	A13NE (E)	79	1	378498 423845
	Potential for Ground Dissolution Stability Hazards				
	Hazard Potential: No Hazard Source: No Hazard British Geological Survey, National Geoscience Information Service	A13NE (SW)	0	1	378341 423814
	Potential for Landslide Ground Stability Hazards				
94	Hazard Potential: Low Source:	A13NE (N)	0	1	378358 423864
	Potential for Landslide Ground Stability Hazards	(1.1)			.2000
95	Hazard Potential: Very Low	A13NE	0	1	378341
	Source: British Geological Survey, National Geoscience Information Service	(SW)			423814
96	Potential for Landslide Ground Stability Hazards Hazard Potential: Moderate	A13SW	0	1	378267
	Source: British Geological Survey, National Geoscience Information Service	(SW)			423765
	Potential for Landslide Ground Stability Hazards				
97	Hazard Potential: Moderate Source: Moderate British Geological Survey, National Geoscience Information Service	A13NE (N)	0	1	378339 423859
	Potential for Landslide Ground Stability Hazards	(,			5000
98	Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A13NW (W)	5	1	378297 423824
	Potential for Landslide Ground Stability Hazards	(**)			12002
99	Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13NW (W)	17	1	378279 423814
	Potential for Landslide Ground Stability Hazards				
100	Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A13SE (E)	75	1	378508 423812
	Potential for Landslide Ground Stability Hazards				
101	Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A13NE (N)	81	1	378363 424030
	+				
	Potential for Landslide Ground Stability Hazards				



Ground Stability Data (1:50,000)

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Potential for Landslide Ground Stability Hazards				
103	Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A13NW (NW)	105	1	378258 424003
104	Potential for Landslide Ground Stability Hazards Hazard Potential: Low	A13SE	111	1	378465
104	Source: British Geological Survey, National Geoscience Information Service	(SE)	111	'	423654
105	Potential for Landslide Ground Stability Hazards Hazard Potential: Low	A13NE	127	1	378548
	Source: British Geological Survey, National Geoscience Information Service	(NE)			423955
106	Potential for Landslide Ground Stability Hazards Hazard Potential: Low	A13NE	142	1	378556
	Source: British Geological Survey, National Geoscience Information Service	(E)			423852
107	Potential for Landslide Ground Stability Hazards Hazard Potential: Moderate	A13NE	149	1	378557
	Source: British Geological Survey, National Geoscience Information Service	(E)			423847
108	Potential for Landslide Ground Stability Hazards Hazard Potential: Low	A13SW	185	1	378297
	Source: British Geological Survey, National Geoscience Information Service	(S)			423495
109	Potential for Landslide Ground Stability Hazards Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	A13SW (S)	202	1	378299 423478
110	Potential for Landslide Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13SW (SW)	240	1	378033 423612
	Potential for Running Sand Ground Stability Hazards	(311)			120012
111	Hazard Potential: Low British Geological Survey, National Geoscience Information Service	A13NE (NE)	0	1	378412 423900
112	Potential for Running Sand Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13NE (SW)	0	1	378341 423814
113	Potential for Running Sand Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A13SW (W)	234	1	378027 423795
	Potential for Running Sand Ground Stability Hazards Hazard Potential: No Hazard	A13SW	0	1	378263 423725
	Source: British Geological Survey, National Geoscience Information Service Potential for Running Sand Ground Stability Hazards	(SW)			423723
	Hazard Potential: No Hazard Source: No Hazard British Geological Survey, National Geoscience Information Service	A13NE (NE)	0	1	378361 423857
	Potential for Running Sand Ground Stability Hazards Hazard Potential: No Hazard	A13NE	79	1	378498
	Source: British Geological Survey, National Geoscience Information Service	(E)	7.5	'	423845
114	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: Very Low	A13NE	0	1	378339
	Source: British Geological Survey, National Geoscience Information Service	(N)	<u> </u>	'	423859
115	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A13NE (N)	120	1	378370 424068
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NE (SW)	0	1	378341 423814
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: No Hazard	A13NE	79	1	378498
	Source: British Geological Survey, National Geoscience Information Service Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NW	102	1	423845 378242
	Source: British Geological Survey, National Geoscience Information Service Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: No Hazard	A13NW	217	1	423971 378157
	Source: British Geological Survey, National Geoscience Information Service Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: No Hazard	(NW) A13SW	240	1	424053 378033
	Source: British Geological Survey, National Geoscience Information Service	(SW)	∠4 U	ı	423612

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Historical Map List

The following mapping has been analysed for Historical Land Use Information (1:2,500):

1:2,500	Mapsheet	Published Date
Lancashire And Furness	071_08	1893
Lancashire And Furness	071_12	1893
Lancashire And Furness	071_08	1911
Lancashire And Furness	071_12	1911
Lancashire And Furness	071_08	1930
Lancashire And Furness	071_12	1930
Ordnance Survey Plan	SD7824	1963

The following mapping has been analysed for Historical Land Use Information (1:10,000):

1:10,560	Mapsheet	Published Date
Lancashire And Furness	071_00	1849
Lancashire And Furness	071_NE	1894
Lancashire And Furness	071_SE	1894
Lancashire And Furness	071_SE	1911
Lancashire And Furness	071_NE	1912
Lancashire And Furness	071_NE	1931
Lancashire And Furness	071_SE	1931
Ordnance Survey Plan	SD72SE	1955
Ordnance Survey Plan	SD72NE	1956
1:10,000	Mapsheet	Published Date
Ordnance Survey Plan	SD72SE	1990
Ordnance Survey Plan	SD72NE	1991



Data Currency

Mining and Cavities Data	Version	Update Cycle
BGS Recorded Mineral Sites		
British Geological Survey - National Geoscience Information Service	October 2019	Bi-Annually
Coal Mining Affected Areas		
The Coal Authority - Property Searches	March 2014	Annual Rolling Update
Man Made Mining Cavities		
Peter Brett Associates	December 2019	Bi-Annually
Mining Instability		
Ove Arup & Partners	October 2000	Not Applicable
Natural Cavities		
Peter Brett Associates	December 2019	Bi-Annually
Non Coal Mining Areas of Great Britain		
British Geological Survey - National Geoscience Information Service	May 2015	Not Applicable
Historical Land Use Information (1:2,500)	Version	Update Cycle
Subterranean Features		
Landmark Information Group Limited	February 2020	Bi-Annually
Ground Stability Data (1:50,000)	Version	Update Cycle
CBSCB Compensation District		
Cheshire Brine Subsidence Compensation Board (CBSCB)	August 2011	Not Applicable
Potential for Collapsible Ground Stability Hazards		
British Geological Survey - National Geoscience Information Service	January 2019	Annually
Potential for Compressible Ground Stability Hazards		
British Geological Survey - National Geoscience Information Service	January 2019	Annually
Potential for Ground Dissolution Stability Hazards		
British Geological Survey - National Geoscience Information Service	January 2019	Annually
Potential for Landslide Ground Stability Hazards		
British Geological Survey - National Geoscience Information Service	January 2019	Annually
Potential for Running Sand Ground Stability Hazards		
British Geological Survey - National Geoscience Information Service	January 2019	Annually
Potential for Shrinking or Swelling Clay Ground Stability Hazards		
British Geological Survey - National Geoscience Information Service	January 2019	Annually
Princ Subsidence Solution Area		
Brine Subsidence Solution Area		

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Data Suppliers

A selection of organisations who provide data within this report

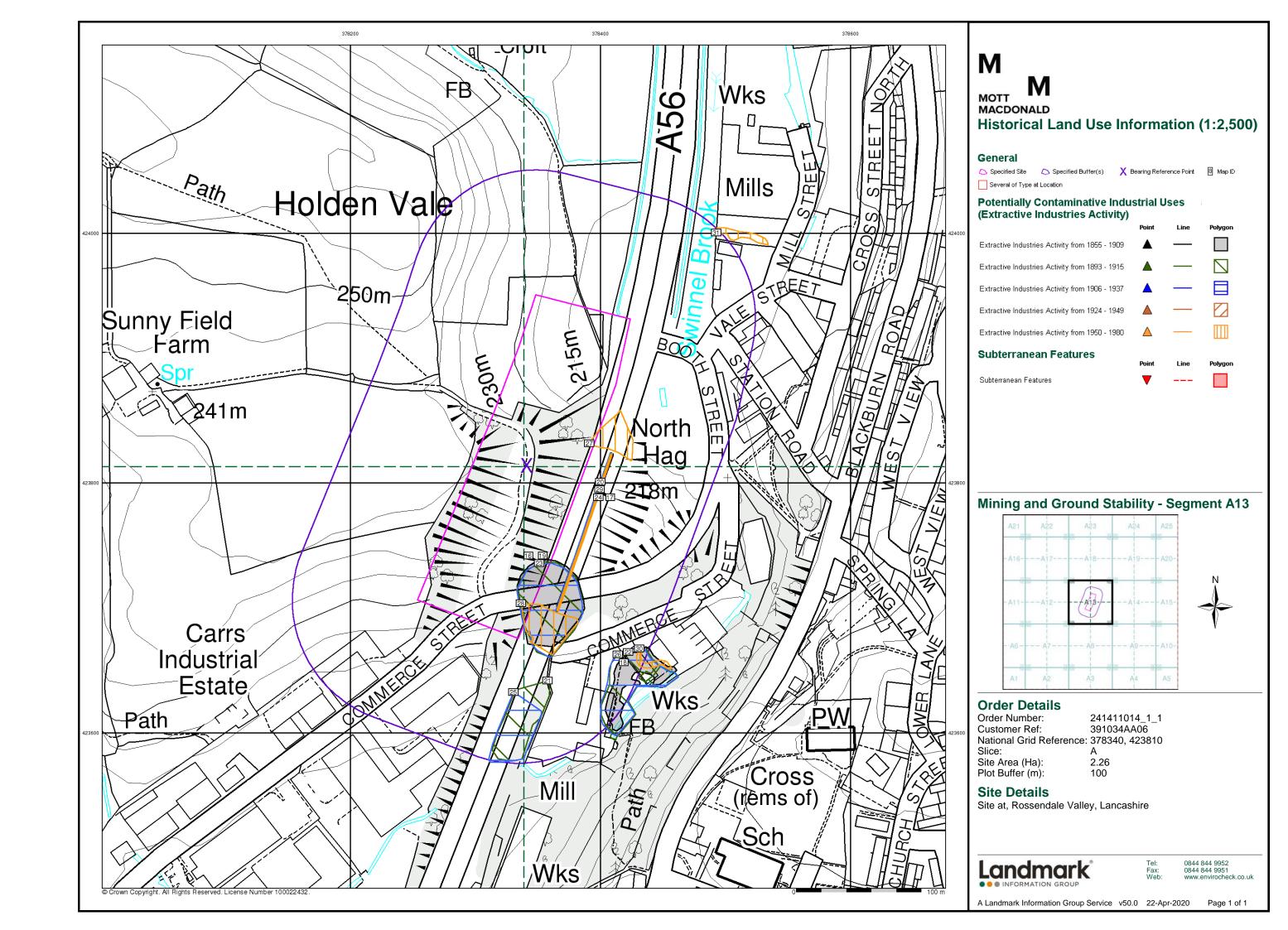
Data Supplier	Data Supplier Logo
Ordnance Survey	Map data
British Geological Survey	British Geological Survey NATURAL ENVIRONMENT RESEARCH COUNCIL
The Coal Authority	The Coal Authority
Ove Arup	ARUP
Peter Brett Associates	peterbrett
Wardell Armstrong	wardell armstrong your earth our world
Johnson Poole & Bloomer	JPB

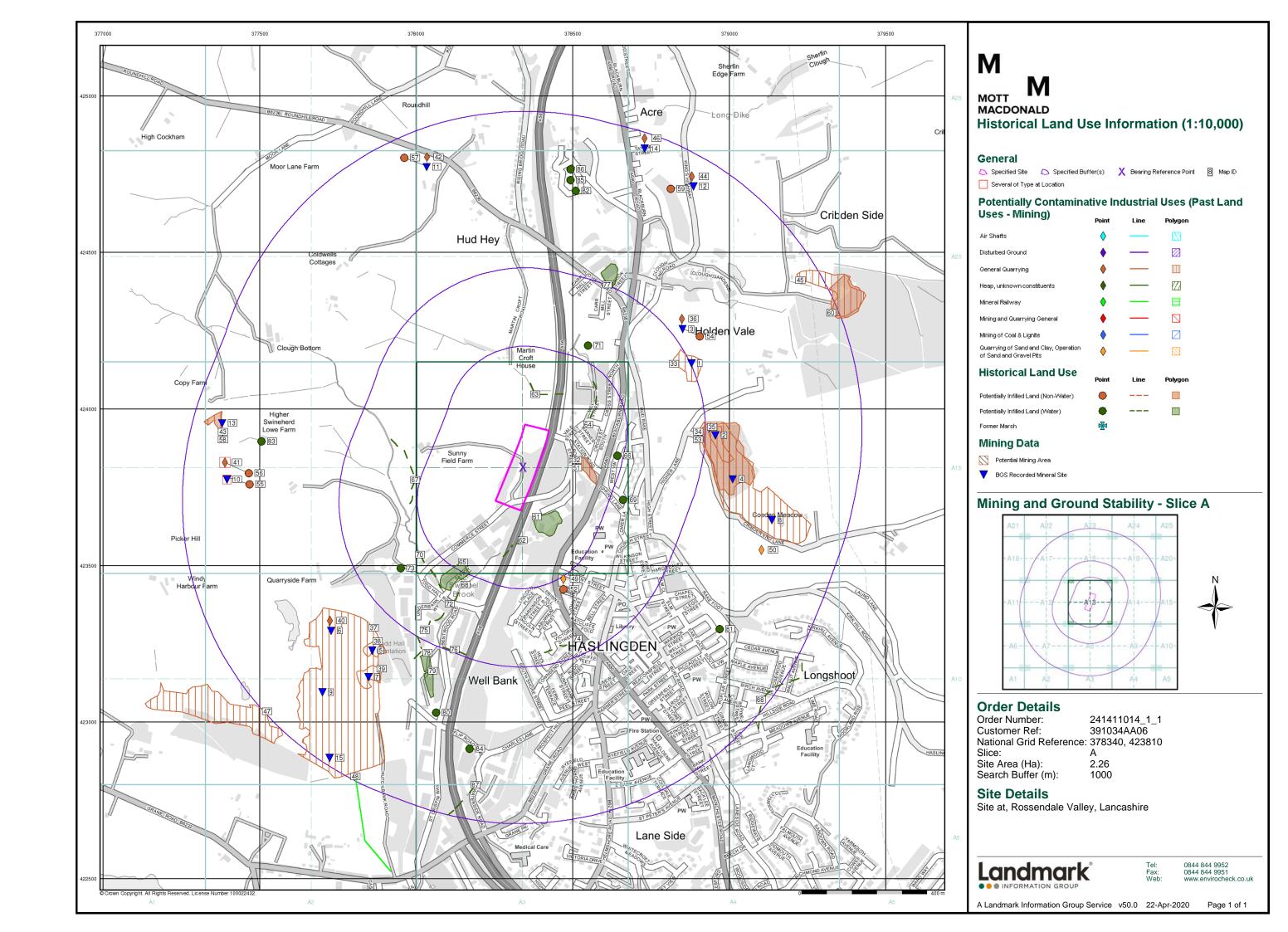


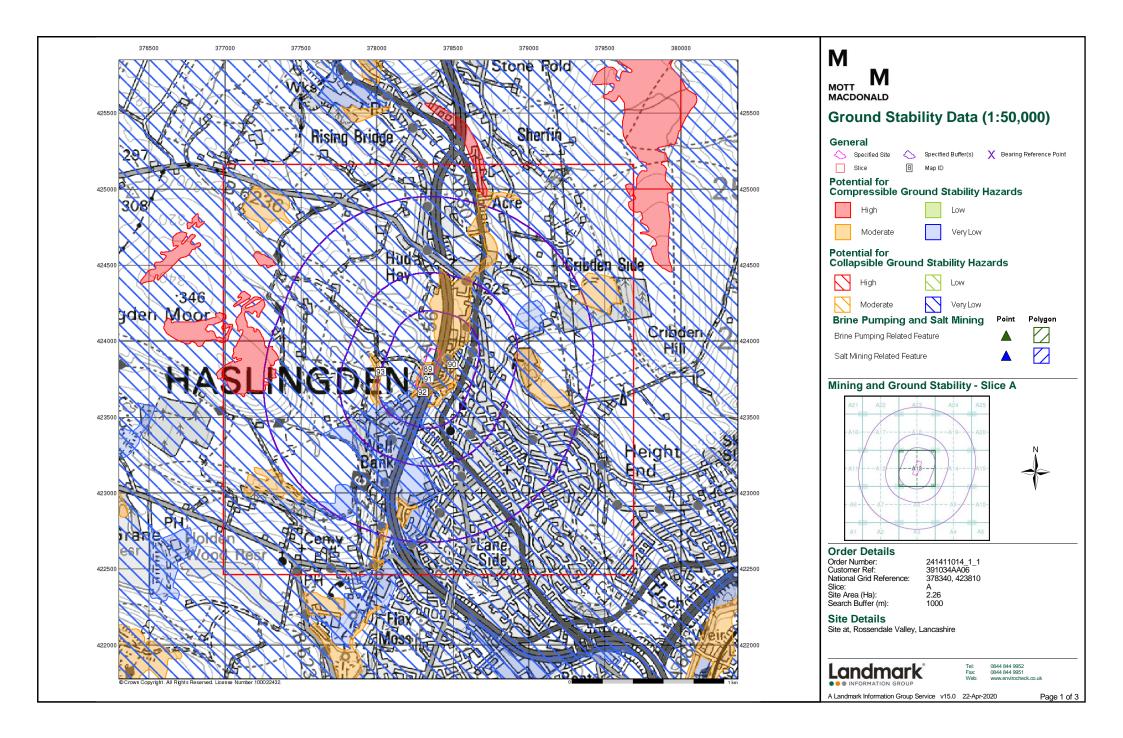
Useful Contacts

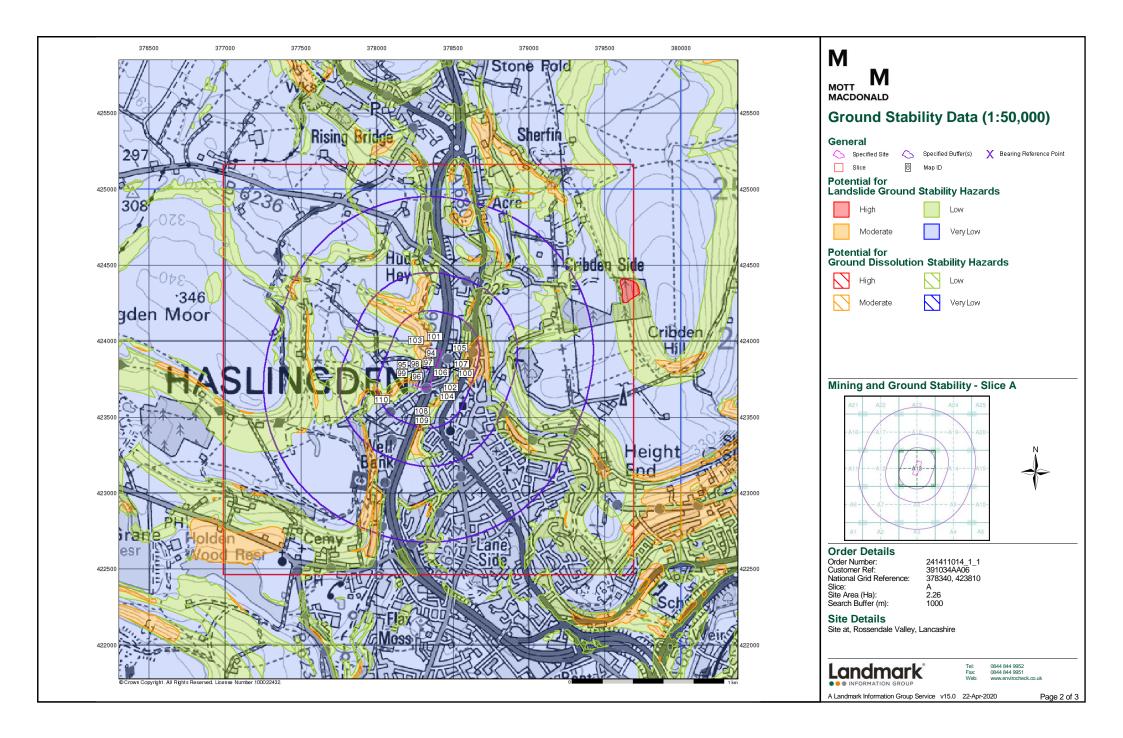
Contact	Name and Address	Contact Details
1	British Geological Survey - Enquiry Service British Geological Survey, Environmental Science Centre, Keyworth, Nottingham, Nottinghamshire, NG12 5GG	Telephone: 0115 936 3143 Fax: 0115 936 3276 Email: enquiries@bgs.ac.uk Website: www.bgs.ac.uk
2	The Coal Authority - Property Searches 200 Lichfield Lane, Mansfield, Nottinghamshire, NG18 4RG	Telephone: 0345 762 6848 Fax: 01623 637 338 Email: groundstability@coal.gov.uk Website: www2.groundstability.com
3	Ove Arup & Partners Central Square, Forth Street, Newcastle upon Tyne, Tyne and Wear, NE1 3PL	Telephone: 0191 261 6080 Fax: 0191 261 7879
-	Landmark Information Group Limited Imperium, Imperial Way, Reading, Berkshire, RG2 0TD	Telephone: 0844 844 9952 Fax: 0844 844 9951 Email: customerservices@landmarkinfo.co.uk Website: www.landmarkinfo.co.uk

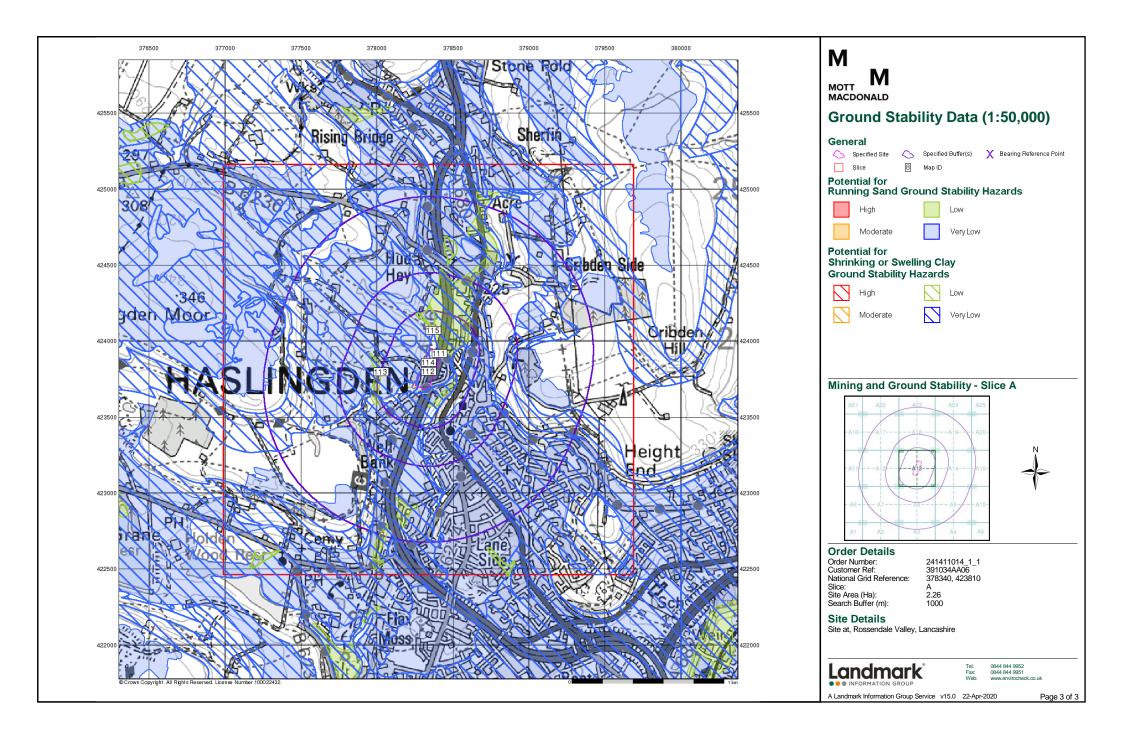
Order Number: 241411014_1_1 Date: 22-Apr-2020 rpr_ec_datasheet v53.0 A Landmark Information Group Service Page 14 of 14



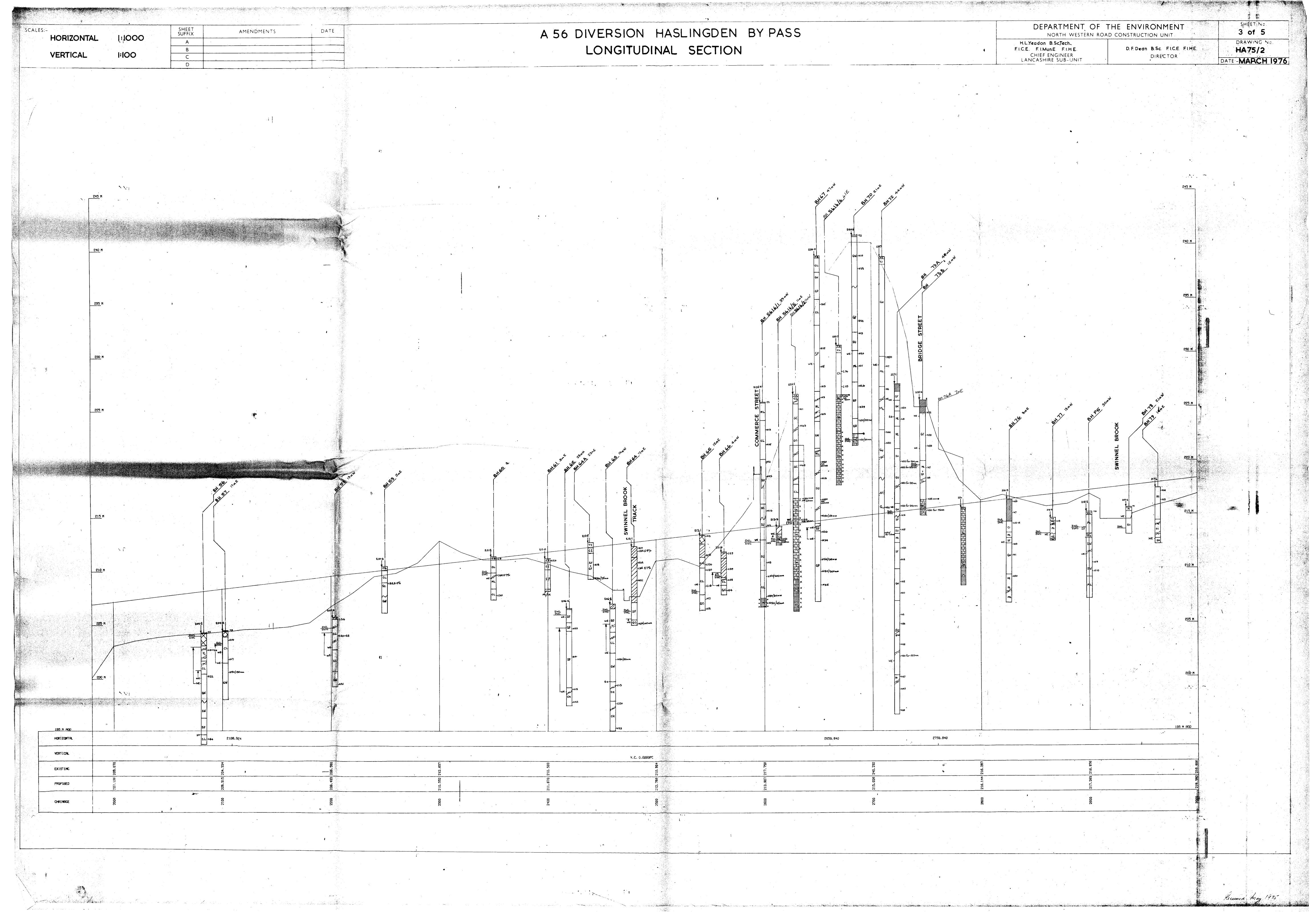








E. Site Investigation Report No. 367



LANCASHIRE COUNTY COUNCIL HIGHWAYS LABORATORY

SITE INVESTIGATION REPORT NO. 367

MANCHESTER TO BURNLEY TRUNK ROAD A56 DIVERSION HASLINGDEN BY_PASS SECTION

INTRODUCTION

It is intended that this Report should be read in conjunction with the "Preliminary Site Investigation Report - December 1972". Comments relating to Geology and Mine Workings in general remain unaltered. Since the date of the Preliminary Report the design of the junction with the A680 near Rising Bridge has been altered, reducing the land take, and omitting the diversion of the A677 which now retains its original line and requires a bridge over the by-pass. This report relates to the line published on 5th July, 1975.

The A56 Diversion as a whole is a scheme intended to form part of a through route to link the M62 near White Field with the M65 Calder Valley Route at Huncoat. The M66 Bury Easterly By-Pass forms the beginning of the through route connecting the M62 with the Edenfield By-Pass.

A link from the Edenfield By-Pass has already been constructed as far as Bent Gate roundabout where the A56 Diversion scheme commences. The first length of the new route is intended to provide a by-pass around Haslingden skirting the town via Spring Vale. Holden Vale and Hud Hey to connect with a new roundabout on the A680 near Rising Bridge.

The second length, Accrington Easterly By-Pass, takes a line east of Baxenden and through the disused part of Huncoat Quarry, eventually meeting the M65 at Huncoat Junction.

Haslingden By-Pass is being designed as an all purpose two lane dual carriageway with severely restricted access. Side roads will cross the route by grade separation and there will be only one intermediate junction that being at Grane Road where slip roads will give connections to and from the south. The main route length is 4.2 km.

Recommendations for the make up of pavement construction are presented in the General Recommendations together with those concerning the classification and use of material.

The Site Investigation field work was started in September 1972 with the Preliminary Survey which included ten boreholes along the line of the By-Pass. Drilling for the carriageway main survey commenced at Syke Side in June 1973 and was completed as far north as Hud Hey Road by December 1973. In April 1974 when firm layouts for the bridgeworks had become available boring was recommenced, but suspended from July 1974 to September 1974 to allow public consultation to take place. Drilling was further deferred until April 1975 pending the revised layout for the north end of the by-pass becoming available. Drilling for the main survey was finally completed on 25th November, 1975.

The total amount of boring to date is as follows:-

Hand Auger Holes	42m
Machine Dug Trial Pits	14m
Shell and Auger Drilling	1678m
Rotary Drilling - Open Hole	61m
Rotary Drilling - Rock Coring	51m

GEOLOGY OF THE AREA

The route chosen for the proposed By-Pass takes a general south to north line around the west side of the town and for the most part follows the valley containing Swinnel Brook.

The bedrock below the route is the upper part of the Millstone Grit series. Very few of the boreholes penetrated to bedrock and it appears that the depth of drift exceeds 30m in several places. Only through North Hag cutting will any exposure of the bedrock be seen (the Lower Haslingden Flags). There, along the by-pass centre line, the rock head rises to 4m above finished road level.

Few faults are recorded in the area. A minor fault within the Lower Haslingden Flags is shown crossing the route, trending WSW - ENE at chainage 3570m, with the down throw to the north.

The drift material is mainly glacial, with some superficial deposits of peat and alluvium, but varies considerably from place to place. However, the general order of superposition is as follows:-

(Made Ground)
Alluvium, Alluvial Fan, Peat
Fluvioglacial sand and gravel
Boulder Clay (upper)
Varved Clay
Boulder Clay (lower)

From Bent Gate roundabout northwards boulder clay predominates but soon gives way across Helmcroft to varved clays with silt partings. The prevalance of silt increases towards Victoria Park where very wet silt to a depth of 21m was encountered, overlying varved clay to 35m. Beyond Helmshore Road there is an abrupt change to fluvioglacial silty sand with gravel. Peat occurs in the valley bottom around chainages 1300m and 1550m.

From Grane Road through to Flip Road in the valley of Swinnel Brook silt seems to predominate with interspersed layers of varved clay. At Flip Road up to 8m of boulder clay overlies the silt but soon gives way to the north to fluvioglacial silty sands and silty sandy gravels, with occasional peat inclusions at the surface.

Much of the ground surface between Flip Road and North Hag has been covered with man-made filling thus obscuring the natural features.

Boreholes drilled through North Hag have revealed stratified deposits of silty sand and silty sandy gravel interspersed mid-way to finished road level with layers of silt and varved clay.

Through Holden Vale the line of the route crosses a flat area which is probably an outwash deposit. Gravels, sands and silts are overlain by a layer of peat approximately 2m thick.

From Hud Hey Road to Blackburn Road the line runs through a thick moundy deposit of gravel. sand, and clay. Surface hollows contain peat, and some small pockets of peat are present within the deposit.

Immediately east of Blackburn Road where the new roundabout is planned there is a peat filled trapped valley. Boreholes have revealed up to 3m of peat overlying mainly granular material. Bedrock occurs at a depth of about 11m in this area.

MINEWORKINGS

The buried outcrop of the Holcombe Brook Goal crosses the Syke Side slip road near Syke Mill, and the main route just south of Victoria Park. The only evidence of past working is a small tip of coal, shale and ironstone fragments near Holme Spring Mill opposite chainage 1350m. The spot is shown on the plan by 'M'. There are no active mines.

No other coal seams outcrop along the line of the By-Pass.

GENERAL RECOMMENDATIONS

The recommendations made in this report are based on the Department of the Environment's Specification for Road and Bridge Works 1969, and Method of Measurement for Road and Bridge Works 1971.

Additional clauses which are proposed include the following special filling specifications:-

Clause 619: S.F.1 A granular fill, well graded from a maximum size of 150mm down to a 75 µm sieve, with 55% - 25% passing the 20mm sieve and not more than 10% passing the 75 µm sieve; and having a minimum Slake Durability Index of 96% after two cycles.

Clause 619: S.F.2

A granula: fill, well graded from a maximum size of 50mm down to a 75 µm sieve with not more than 10% passing the 75 µm sieve; and having a Uniformity Coefficient of not less than 10.

Clause 619: S.F.3 A coarse grained non-cohesive fill, graded from 150mm down with not more than 10% passing the 75 um sieve and a Plasticity Index not exceeding 6.

Clause 619: S.F.4 As S.F.1 but without a restriction on the Slake Durability Index.

Topsoil Strip Beneath Embankments

In general where embankment heights exceed 3m to formation level topsoil strip need not necessarily be carried out. However, where the thickness of topsoil or surface organic material is significant, or where the embankment is on side-long ground, and

it is thought that topsoil strip is advisable, this is mentioned in the detailed recommendations.

Where embankment heights do not exceed 3m to formation level

it is assumed that topsoil strip will be carried out.

Recommended depths of topsoil strip beneath embankment for those lengths where the operation is advised, together with those

for cuttings, are given in tabular form in the summary at the end

of the Report. Thicknesses given refer to the depth of true

organic topsoil, which is generally dark in colour, and do not

include the light coloured clayey or sandy loam subsoil.

Side Slopes

Unless otherwise stated in the detailed recommendations standard side slopes are proposed both in cutting and on

embankment as follows:-

Cuttings: 1 in 3

Embankments: 1 in 2

Classification and Suitability of Cut Material

The cut material willconsist of mainly glacial and fluvioglacial drift. Small depths of peat occur in various places along the route. Rock will be encountered between 2m and 7m above finished road level in the deep cutting through North Hag.

The majority of the material to be excavated from the cuttings will be 'uniformly graded material' as defined by Clause 601.2 (iii) - silts and silty fine sands being common. Materials satisfying the special materials requirements for S.F.2 occur on site in isolated pockets but it is unlikely that any of these could be worked economically.

Only in the vicinity of Syke Side does 'cohesive soil' as defined by Clause 601.2.(i) occur as the dominant material in excavation and here it consists of almost equal proportions of low, medium and high plasticity clays.

In order to allow for the efficient operation of the normal types of scraper unit it has been established previously that the in-situ shear strength of clay for use as fill material should be not less than 50 kN/m^2 . The use of a minimum shear strength of this value would also be consistent with embankment construction up to a height of 12 or 13m allowing for a reasonable factor of safety of about 1.5. This would provide for all the fills on this site.

A study of the relationship between the natural moisture contents, the plastic limits and shear strengths of the clays from the cuttings on the scheme revealed that for a satisfactory suitability criterion the natural moisture content of the clay should not exceed 1.3 times the plastic limit. (See graph Appendix No. 1).

In order to define the suitability of excavated drift Clause 601.2 should contain addenda to include the following criteria:-

1) For cohesive soils the moisture content of the fraction of the soil which passes a 20mm B.S. sieve shall be not greater than 1.3 times the value of the Plastic Limit as determined in accordance with B.S. 1377 Test No. 3.

- ii) For well graded granular soils the moisture content of the fraction of the soil which passes a 20mm B.S. sieve shall not exceed 11%.
- iii) For uniformly graded material the moisture content shall not be less than 8% nor greater than 15%.

Many of the uniformly graded and well graded granular materials to be excavated on this scheme have in-situ natural moisture contents in excess of the figures given above. These deposits are mostly layered, the silts having bands of clay, and the sands and gravels having bands of silt or silty fine sand, or sometimes clay. Consequently induced drainage of these materials during excavation is not likely to lower the moisture content significantly and therefore they have been classified as unsuitable.

The depth of weathering of the in-situ rock is variable and it is not possible to determine with any accuracy the percentage of material in this condition. It is therefore proposed that this weathered material should be regarded as 'rock' for measurement purposes. However, to distinguish this from rock fragments carried in the overburden it is proposed for the purposes of Clause 601.1(iv) that 'rock' shall include weathered rock only where it is residual soil contiguous with the parent rock, and showing distinct layering associated with its original bedding.

Although the use of such a definition will simplify the measurement of rock during construction it will result in the general term 'rockfill' comprising a proportion of softer clayey rock material. It has been considered prudent therefore to assume the use of 'rockfill' material mainly as general filling, omitting it from use in any particular situations requiring 'hard' filling.

Filling Material

Provisional earthworks quantities for this scheme indicate a fill requirement of 452,000m³ compared with a total excavation of 650,000m³. The percentages of suitable material to be expected from each cutting excavation are given in the detailed recommendations and summarised at the end of the Report.

Taking these figures as they stand it follows that there will be a large requirement for imported filling, (estimated at 152,400m³). In order to make the best use of the suitable excavated material and to rationalise the requirements for imported filling the following recommendations are made:

- i) Except where stated otherwise in the Detailed Recommendations the contractor should be given the option of completing the embankments to formation level either in soft suitable material or with a layer of S.F.1 not less than 400mm thick (flexible) or 225mm (rigid). Tables of construction depths appropriate to each case are given on pages 13, 14 and 15.
- ii) For constructing shallow embankments, defined as being generally less than 1.5m high from existing ground level prior to soil strip, to proposed finished road Lovel, S.F.1, or 'rock fill' material should be used, as indicated in the main body of this Report.
- iii) Starter layers, where required beneath embankments constructed on soft ground, should be of 'rock fill' placed 600mm thick in one operation.
- iv) For backfilling excavated soft areas and soft spots under embankments, where the soft material is wholly removed and ground water is insignificant, 'rock fill' may be used.

- v) 'Subgrade layers' should be used through cuttings not penetrating to rock so that a standard construction can be placed thereon. These should normally consist of a 400mm thick layer of S.F.1 material for flexible construction. At cut/fill lines (see page 12) and in several other instances a 600mm thickness has been specified. In the case of rigid construction however, the 'subgrade layer' would normally be 225mm thick, being increased to 425mm only at cut/fill lines.
- vi) For backfilling excavated soft areas and soft spots below the 'subgrade layer' in cuttings, where the soft material is wholly removed and ground water is insignificant, 'rock fill' material may be used.
- vii) Approved granular material complying with Clause 605 Table 2 "Free Draining Material", shall be used for backfilling ponds, soft areas and soft spots where the material has to be deposited below standing water level, or below the likely future water level as decided by the Engineer.

Pavement Construction

Pavement thicknesses are based on Road Note 29 (3rd Edition) as modified by Technical Memorandum H10/71. On the main route a 20 year cumulative traffic volume of 11 - 15 m.s.a. has been used for flexible and composite pavements, and 40 years (20 - 40m.s.a.) for rigid pavements, calculated on a growth rate of 3%.

Formation level is defined as the top of the 'subgrade layer' where employed, or the upper surface of the subgrade where a 'subgrade layer' is not used.

Cut/fill transitions will normally be treated by increasing the 'subgrade layer' thickness (or in the absence of a 'subgrade layer' the sub-base thickness) by 200mm for a distance extending on the cut side of the cut/fill line for 15m, unless otherwise stated in the detailed recommendations.

Construction depths for the main route including slip roads and roundabout are given in the tables on page 13. The side roads are covered in Part II.

Tables of Construction Thicknesses

1. Main route 11 - 15 m.s.a. (over 20 years).

Standard Flexible and Composite Construction on a 'Chbgrade
Layer' (minimum C.B.R. = 8%) of S.F.1 material at least 400mm thick.

Rosubase	Sub-base	Roadbase		Baso-	Wearing	Total
Clause	Group L	Group R	Group P	course	Course	Construction
				Group V	Group V	Depth
	mm	mm	mm	mm	mm	mm
812	215	-	135	60	40	450
810 811 ^{or}	195	-	155	60	40	450
807*	150	190	-	90	40	470

^{*} Refer to page 16

2. Main route 11 - 15 m.s.a. (over 20 years).

Standard Flexible and Composite Construction on an Fmbankment completed to formation level using 'soft material' (minimum C.B.R. = 2%).

Roadbase	Sub-base	Roadbase		Base-	Wearing	Total
Clause	Group L	Group R Group P		course	Course	Construction
				Group V	Group V	Depth
	mm	m m	mm	mm	mm	mm
812	540	-	135	60	40	775
810 811 ^{or}	540	-	155	60	40	795
807*	540	190	-	90	40	860

^{*} Refer to page 16

3. Main Route 11 - 15 m.s.a. (over 20 years).
Modified Flexible and Composite Construction in Cutting on
Intact Non-Frost Susceptible Rock (minimum C.B.R. = 30%).

Γ	Roadbase	Sub-base	Roadbase		Base-	Wearing	Total
	Clause	Group R	Group R	Group P	course	Course	Construction
l					Group V	Group V	Depth
		mm	mm	mm	mm	mm	mm
	812	160+	-	60 ⁺	60	40	320
	810 811 ^{or}	160 ⁺	-	60 ⁺	60	40	320
	807*	_	190	-	90	40	320

^{*} Refer to page 16

*Note:- The lean concrete blinding thickness of 160mm has been chosen as being a reasonably practical minimum cover necessary to protect the trimmed rock formation from weathering before the base material is laid. Having decided in principle on having a layer of lean concrete next to the formation it follows that, as the resulting overall construction depth should be no greater for flexible construction than for composite, then the required thickness of Group P Roadbase should be no greater than the 60mm recommended for the modified composite construction shown in Table 7.

4. Main route 20 - 40 m.s.a. (over 40 years).

Standard Rigid Construction on a 'Subgrade Layer'

(minimum C.B.R. = 8%) of S.F.1 material at least 225mm thick.

Sub-base Group N 80mm
Concrete Slab Thickness 245mm
Total Construction Depth 325mm

Note:- This design ignores the slight possibility of the 'Subgrade layer' being frost-susceptible but is in line with current N.W.R.C.U. requirements.

5. Main route 20 - 40 m.s.a. (over 40 years).

Standard Rigid Construction on an Embankment completed to formation level using 'soft material' (minimum C.B.R. = 2%).

Sub-base Group N 205mm
Concrete Slab Thickness 245mm
Total Construction Depth 450mm

6. Main route 20 - 40 m.s.a. (over 40 years).

Modified Rigid Construction in Cutting on Intact Non-Frost
Susceptible Rock (minimum C.B.R. = 30%).

Sub-base Group R (Lean Concrete, Clause 807S) 160mm
Concrete Slab Thickness 245mm
Total Construction Depth 405mm

Note: The lean concrete blinding thickness of 160mm has been chosen as being a reasonably practical minimum cover necessary to protect the trimmed rock formation from weathering before the base slab is laid.

It is appreciated that this approach creates an anomolous situation in that the total construction depth (405mm) is greater than that proposed for construction on a 'subgrade layer' (325mm) but it is contended that there would be no worthwhile saving in reducing the base slab thickness for such a short length of formation (180m).

Note on Composite Construction

The thicknesses shown for composite construction using a lean concrete base to Clause 807 are those recommended in Technical Memorandum H10/71 for the appropriate traffic category.

Experience elsewhere has shown that cracks which develop in lean concrete reflect through the surfacing in a relatively short time. The previously accepted D.O.E. policy was to overlay lean concrete with a minimum thickness of 175mm (7 ins) of bituminous surfacing. The extra layer of base has the added advantage of enabling a better surface tolerance to be achieved.

For traffic flows exceeding 25 m.s.a. H10/71 recommends thicknesses of bituminous overlay varying from 160 - 200 mm, which are broadly in keeping with their previous policy. For traffic flows less than 25 m.s.a. the thickness of bituminous overlay is reduced below 160mm and for traffic figures of 11 - 15 m.s.a. as on this scheme, it is only 130mm. There is adequate evidence to indicate that this amount of cover would be insufficient to prevent the appearance of reflection cracks within a short space of time. It is strongly recommended that a minimum overlay thickness of 160mm be adopted as a standard on this scheme. This would overcome the problem of early reflection cracking, and would provide more practical layer thicknesses thereby enabling the surfacing contractor to work within the tolerances laid down in the Specification. It is envisaged that the construction depth would remain unchanged in each case by making a corresponding reduction in the combined thickness of the basecourse and lean concrete. The revised figures for insertion in the tables

1, 2 and 3 (pages 13 and 14) would be as follows:

Table 7

Table	Roadbase	Sub-base	Road	base	Basecourse	Wearing	Total
No.	Clause	Group L	Group R	Group P	Group V	Course	Construction
			į			Group V	Depth
		mm	mm	mm	mm	mm	mm
1.	807	150	160	60	60	40	470
2.	807	540	160	60	60	40	860
3.	807		160	60	60	40	320

Soft Area Treatment and Stabilisation

Soft area treatment (paragraph (i) below) should be applied to flexible and composite, but not rigid, pavements. Stabilisation (paragraph (ii) below) should be applied equally to flexible, composite and rigid pavements.

Soft areas should be treated by one of the following methods:

- i) Where the sub-grade is soft clay having an apparent cohesion of less than 25 kN/m² the 'sub-grade layer' thickness should be increased by 200mm to 600mm.
- ii) Where the sub-grade is waterlogged sandy or clayey silt, the area should be stabilised by excavating an additional 300mm of material, and backfilling to the underside of the 'sub-grade layer' with S.F.1 material. The 400mm thick (225mm rigid) 'sub-grade layer' should then be continued through at the normal level.
- iii) Where the sub-grade is a layered structure of waterlogged sandy or clayey silt interspersed with bands of soft clay, the treatment should be in accordance with i) or ii) above depending upon the predominant material.

Drainage

In cuttings not penetrating to rock the formation drains should normally be laid a minimum depth of 600mm below formation level as defined earlier i.e. 1070mm below finished road level allowing for the thickest permitted form of construction (H10/71 Part III page 56.4).

In the cutting at North Hag where the formation is in rock the depth of the formation drains may be reduced to 300mm below formation level, i.e. 705mm below finished road level allowing for the thickest permitted form of construction. At this level rock will be encountered in formation drain trenches between chainages 2590m and 2770m.

Throughout this scheme, for formation drains and french drains, it is recommended that the trenches be backfilled with material complying with Clause 505 Table 1 Type B. However, on lengths where the excavation is through silt or sand it will be necessary to take special precautions to prevent the pipes and catchpits from silting up. On these lengths, which are summarised on page 41, it is recommended that the pipe and filter media together be completely wrapped in a proprietary non-woven filter fabric.

MAIN ROUTE AND ADJOINING SLIP ROADS: SUPPLEMENTARY RECOMMENDATIONS SYKE SIDE: Northbound Carriageway - Special Chainage 540m to 620m

This section of the Report concerns the cutting slope to the south of the main route. Due to the restricted nature of the site this cutting slope will need to be steeper than the standard 1 in 3. The plan length of the slope at any section is governed to the south by the position of the offside verge of the north-bound exit slip-road, and to the north-by the sight-line of the northbound carriageway of the main route. To suit this layout the resulting cutting slope would vary from 1 in 3 at chainage 540m to 1 in 2 at chainage 620m.

Originally a toe retaining wall was planned for this location supporting a standard 1 in 3 cutting slope above, but due to the poor foundation conditions this was likely to be an expensive solution. Nearly half the length of the wall would have needed piling or alternatively the weak foundation material replaced by selected granular material. Also a large amount of ground behind the wall would have needed replacing with selected granular material simply to keep the earth pressures on the wall within tolerable limits. To have carried out the necessary excavation would have required a sheet piled temporary support to the slip road.

SITE INVESTIGATION

Two Shell and Auger boreholes, Nos. 5610R/1 and 2, were drilled specifically for the wall during the course of the site investigation. Two other boreholes, Nos. 5610/1 and 2, drilled for the adjoining Syke Side East Bridge provide information relevant to the west end of this site. Carriageway borehole No. 4 provides an indication of soil conditions at the east end of the site.

Later, when it became apparent that a cutting slope, even if buttressed, would be preferable to a retaining wall, two additional boreholes, Nos. 4A and 4B, were drilled at the top of the proposed batter.

The natural drift material consists of a firm to stiff, low to intermediate plasticity upper boulder clay layer some 4 - 10m thick overlying a layer of stiff to very stiff, low plasticity, lower boulder clay of unproved thickness. Between the two layers is a lens of firm high plasticity varved clay.

The upper surface of the boulder clay has weathered to a higher plasticity to depths of 1 - 2m and is generally soft to firm. However, towards the east end of the site, this weathered material has been removed, possibly by previous roadworks. Much of the area of land, where the cutting slope is to be formed, has been disturbed by construction activities and various depths of made-ground, most of it clayey, occur, the maximum depth recorded being 5.3m in borehole 5610/1. The presence of ashes in borehole 5610R/1 suggests that some of the made-ground is older than the roadworks and that part of the site contains an old domestic refuse tip.

Water entries in the boreholes were generally slight.

Design

The presence at a relatively shallow depth of the layer of soft to firm varved clay reduces the overall stability of the cutting slope. Also the presence of various depths of made-ground on the soft weathered surface layers of the natural ground, which falls at about 1 in 5 to 1 in 15 towards the main route, could give rise to localised slips.

Both these aspects have been considered and calculations of the factor of safety at three cross-sections made assuming both circular slips and sliding planes. The lowest factor of safety obtained was 1.5 for a deep circular failure at chainage 618m.

In view of these results it is concluded that a cutting slope no steeper than 1 in 2 is feasible. Even allowing for the mixed nature of the ground, it is not thought liekly that localised slips will occur, but it would be prudent to make some allowance in the contract for toe buttresses (say 1000m³ of selected granular material Type S.F.1 together with 100m³ of Type A drainstone) in case some movement occurs during construction. To ensure that buttresses, if installed, can be effectively drained it will be necessary for the invert level of the verge drain to be kept below a level of 188.8m at chainage 580m.

It is not thought that any change need be made in the location of the proposed gas main diversion planned to cross the main route at chainage 560m.

SYKE SIDE: Southbound 'Exit' Slip Road

Ch. 325m to 375m

Further investigation has been carried out on the stability problem on the south batter and the following addendum applies:-

Replace the recommendations of Part I, page 21, paragraph 1, sentences 3 and 4, with the following:-

The south batter of this embankment will be unstable between chainages 325m and 375m due to the presence of a surface layer of soft varved clay some 3m - 11m thick. A toe trench will be necessary here, taken down to the following depths:-

Ch. of North Channel	Offset South m	Invert of Trench m A.O.D.
***	414	m 11(042)
325	19.0 - 21.5	E.G.L. 194.7
330	18.7 - 21.2	191.5
340	17.8 - 20.3	191.5
360	16.7 - 19.2	191.5
365	16.3 - 18.8	191.5
375	16.1 - 18.6	E.G.L. 197.7

The toe trench should be 2.5 metres wide at the base with side slopes of 1 in 1. Provided the operation is carried out expeditiously these slopes should be adequate. The excavation should be backfilled to natural ground level with S.F.1 to Clause 619. A typical cross-section is shown in Appendix No. 4.

WATERFOOT AND SPRING VALE

Ch. 1225m to 2000m

In Part I of the Report it was recommended (see page 24) that the rate of filling be controlled so as to allow the underlying varved silty clays/clayey silts time to consolidate as construction proceeds. During the Design Meeting held on 26th September, 1977 it was agreed that the rate of filling should be 300mm (vertically) per week. This restriction would apply to all the earthworks above existing ground level including those in bridgeworks. In addition piezometers and inclinometers would be installed in selected locations so as to monitor the situation as the filling is placed. These arrangements should ensure that adequate control is maintained.

WATERFOOT: Grane Road Junction

Ch. 1385m - 1470m

In order to reduce the land take where the northbound 'exit' slip road encroaches on the property in Jubilee Road a retaining wall has been proposed to support the toe of the batter between the main route and the slip road (see page B.5614R/1). In addition the side slope of the earthworks has been steepened to 1 in 2.

The design of the wall, which is of reinforced concrete crib construction, includes a 1 in 1 slope for the bulk filling to the main embankment, supported by the S.F.2 back-fill to the crib wall. This form of construction will be satisfactory if suitable granular material is used for the bulk filling, but will be inherently unstable if the contractor opts to use suitable cohesive material. It is therefore recommended that suitable granular material be specified for the bulk filling to the west half of the main embankment for the whole length of the retaining wall.

Seeing that the average slope of the batter between the main route and the slip road, where the retaining wall is highest, is approximately 1 in 1.6, and that suitable granular material would stand satisfactorily at such a slope, it would appear that a more economical solution could be obtained by using suitable granular material for the west half of the main embankment and omitting the wall altogether. The overall stability would be only slightly affected as regards a deep seated failure. As regards a shallow failure of the slope it will still be necessary to excavate out the shallow surface deposits of soft clay (page B.5614R/1) from below the toe of the batter, to form a toe trench.

SPRING VALE MILL

Ch. 1695m to 1765m

Stability calculations carried out on cross-sections through the retaining wall planned for this location show that, even with a controlled rate of filling, the F.O.S. against circular types of failure through the upper varved clay is only just over unity.

It has therefore been proposed (see page B.5615R/1 et. seq.) that, over this length, the part of the existing railway embankment which would remain after construction of the wall be dug out, and the whole width of the new embankment, clear of the reinforced earth construction, be constructed in P.F.A. This breatment alone would not be sufficient to achieve the overall factor of safety of 1.5 which is deemed necessary for structures, and it is therefore proposed that the potential slip circles be intercepted by a line of steel sheet piling driven vertically into the ground 1m in front of the face of the retaining wall.

Beyond the north end of the wall where the new embankment spills over onto the existing railway embankment, but no retaining wall is required, it will be necessary to extend the P.F.A. construction, (but without the sheet pile wall), to chainage 1765m, in order to ensure reasonable stability.

With these provisions, ground movements are not expected to be large as the construction proceeds, but in view of the close proximity of the mill (6m from the face of the wall at the nearest position) it is recommended that some instrumentation be provided to monitor the situation (see page B.5615R/4).

PLANTATION MILL

Ch. 1900m to 2010m

In order to maintain access around the side of Plantation Mill a retaining wall has been planned for this location. In addition, the embankment side slope on the west side has been steepened to 1 in 2.

The construction takes the form of two reinforced concrete crib walls, one above the other, backed by an S.F.2 wedge supporting the bulk filling. The side slope of the bulk filling is set at 1 in 1 which will be satisfactory if suitable granular filling is used, but which will be inherently unstable if the contractor opts to use suitable cohesive material. It is therefore recommended that suitable granular material be specified for the bulk filling to the west half of the main embankment for the whole length of the retaining wall.

HUD HEY

Chainage 3400m to 3500m

In Part I of the Report it was recommended (see page 33) that the small pocket of peat found in borehole No. 5617/5 be removed before the approach fill (to Hud Hey Road) is placed.

The design of Hud Hey Road Bridge is now such that the loads from the east bank-seat will be taken down through the abutment of the old railway bridge. The filling inside the old abutment is to be investigated for peat and other soft material at the construction stage (see Part II, page B.5617/5). Any small pockets of peat outside the area of the old abutment can therefore be left in place (see page B.5617/6).

SIDE ROADS

Note: The tables of construction depths which follow have been determined by the N.W.R.C.U. in consultation with the L.C.C. Maintenance Section and have been included in this Report for the sake of completeness.

Manchester Road A.680, Broadway, and Northbound 'Entry' Slip Road

The existing Manchester Road is on shallow to medium fill approaching Bent Gate roundabout. The existing embankment will need widening on both sides to accommodate the new alignment. Topsoil should be stripped from the old embankment, and the new fill benched into the existing. Standard side slopes of 1 in 2½ will be satisfactory.

A 400mm thick sub-grade layer of S.F.1 carrying the following construction (based on 5.1 m.s.a. over 20 years at 3% rate of growth) should be satisfactory:

40mm Rolled Asphalt wearing course to Clauses 9075 and 901.

60mm Rolled Asphalt base-course to Clause 902.

180mm Dense Bitumen Macadam road-base to Clause 811.

170mm Type 1 sub-base to Clause 803S.

Narrow widths of less than 2.0m should be constructed in lean concrete to within 160mm of finished road level. Where the new surfacing covers the same area as the existing, a minimum overlay of 75mm should be provided

if possible. Where this is impracticable, because of the relative levels, the existing surfacing should be removed to a depth of 75mm below the proposed finished road level before adding the new construction. The existing construction is finished in rolled asphalt and appears to be in reasonable condition.

The existing Broadway is in shallow cutting approaching Bent Gate roundabout. The proposed diversion of Broadway will be partly in shallow cutting, where the sub-grade is firm to stiff boulder clay, and partly on granular back-fill to Syke Side West Retaining Wall. The existing ground has been disturbed by several construction works, and various shallow depths of fill, mostly clayey, are present oversite. It is not expected that any of this fill will be deep enough to affect the road construction, but in view of the complexity of the proposed works in this location, and the small area involved, it would be preferable to increase the S.F.1 sub-grade layer thickness to 600mm. The proposed carriageway construction is as for Manchester Road.

The existing construction of Broadway is finished in dense bitumen macadam and appears to be in reasonable condition. Piecing in the new work also should be as described for Manchester Road.

Topsoil in this area is sparse but it should be possible to win an average of 100mm. All the other excavated material should be classified as unsuitable and carted to tip.

Syke Side north-bound 'entry' slip road will be entirely in new construction in shallow cut and fill. The sub-grade here is variable, consisting of soft to firm boulder clays, and soft to firm varved silty clays. A 600mm thick sub-grade layer of S.F.1 would be appropriate, carrying the same construction as is proposed for Manchester Road.

The existing ground has been disturbed by several construction works, and various shallow depths of fill, mostly clayey, are present oversite. Topsoil in this area is therefore sparse but it should be possible to win an average of 100mm. All the other excavated material should be classified as unsuitable and carted to tip.

Helmshore Road, B.6214

The existing Helmshore Road has a single carriageway falling at a gradient of approximately 1 in 40 from north to south, and is to be diverted onto a new alignment slightly to the east, crossing the main route on a three span bridge (No. 5613). The approaches to the bridge will be in mainly shallow to medium cutting, with a short length of shallow embankment at the north bank-seat.

Topsoil should be stripped from the area of the diversion, an average of 600mm being available in the park. The excavated material, which, apart from some peaty and silty surface deposits, will be mainly silty sand and gravel above the water table, is expected to comprise:

Soft suitable 25% Unsuitable 75%

A 400mm sub-grade layer of S.F.1 will be appropriate, carrying the following construction:

20mm Dense Bitumen Macadam wearing course to Clause 908.

75mm Dense Bitumen Macadam base-course to Clause 903.

150mm Dense Bitumen Macadam road base to Clause 811.

150mm Type 1 sub-base to Clause 803S.

Narrow widenings of less than 2.0m should have the following construction plus surfacing:

150mm Dense Bitumen Macadam road-base to Clause 811.
Regulating course to Clause 811 or 903.

150mm Lean Concrete to Clause 807.

150mm Type 1 sub-base to Clause 803S.

Where the new surfacing covers the same area as the existing, a minimum overlay of 75mm should be provided if possible. Where this is impracticable, because of the relative levels, the existing surfacing should be removed to a depth of 75mm below the proposed finished road level before adding the new construction.

The existing construction has a fine cold asphalt wearing course. Along-side Victoria Park the surface has been tar sprayed and chipped, and is in a fair condition. North of the Park the surfacing has been re-newed recently.

Just north of the bridge site it will be necessary to remove up to 1.3m of very soft organic clay (estimated quantity 250m³) before placing the carriageway fill. A starter layer will also be necessary here for a distance of 20m.

Formation drains should be backfilled with Type B drainstone but, because of the preponderance of silt and fine sand, the pipe and filter-media together should be completely wrapped in a proprietary non-woven filter fabric.

Grane Road B.6232

The existing Grane Road has a single carriageway falling at a gradient of approximately 1 in 13 from north-east to south-west, and is to be widened to up to 11.0m on an improved alignment, crossing under the main route through bridge No. 5614.

There is no topsoil available in this area. The small amount of excavation required, once the existing domestic property has been cleared from the site, is expected to be unsuitable for re-use and should be carted to tip. The existing property has cellars which, where coincident with the road should be cleaned out and backfilled with S.F.2 material to the underside of the sub-grade layer (or to the underside of the sub-base layer where a sub-grade layer is not used).

The sub-grade material is a medium dense slightly clayey, silty, sandy, gravel above the water table, and with lenses of silty sand. A 400mm sub-grade layer of S.F.1 material would be appropriate. The road construction for normal widenings (> 2.0m) and for narrow widenings (< 2.0m) should be as recommended for Helmshore Road. The existing construction is finished in dense bitumen macadam and is in poor condition having had service trenches recently dug through it.

Formation drains should be backfilled with Type B drainstone, but, because of the preponderance of silt and fine sand, the pipe and filter-media together should be completely wrapped in a proprietary non-woven filter fabric.

Waterside Road Diversion

The existing Waterside Road, which crosses the line of the by-pass at chainage 1600m, is to be diverted onto a berm on the north-east batter of the main embankment. The construction of this embankment has been discussed in Part I (see page 24).

A 400mm thick sub-grade layer of S.F.1 carrying the same construction as for Helmshore Road should be satisfactory.

Flip Road

The existing Flip Road is an unclassified road running west to east in shallow cutting on a falling gradient of about 1 in 21, and passing under the main route through a reinforced concrete box (Bridge No. 5615) at approximately chainage 1850m.

Over the western part of the site there are thin layers of residual soil (mostly soft weathered sandstones), possibly solifluction deposits drifted in from the adjoining hillside. Elsewhere over the site there are surface layers of alluvial silts, sands and gravels, probably associated with earlier courses of Swinnel Brook.

Flip Road is to be widened to 5.4m to serve as an access to a new industrial estate. Narrow widenings of less than 2.0m should have the following construction:

20mm Dense Bitumen Macadam wearing course to Clause 908.

75mm Dense Bitumen Macadam base-course to Clause 903. Regulating Course to Clause 811 or 903.

350mm Lean Concrete to Clause 807.

150mm Type 1 sub-base to Clause 803S.

Where the new surfacing covers the same area as the existing, a minimum overlay of 75mm should be provided if possible. Where this is impracticable, because of the relative levels, the existing surfacing should be removed to a depth of 75mm below the proposed finished road level before adding the new construction. However, the existing construction should be checked first and, if proved inadequate, the full width of the road should be totally reconstructed. The existing surfacing appears to be very thin fine cold asphalt and is in only a fair condition.

Verge drains should be backfilled with Type B drainstone, but, because of the preponderance of silt and fine sand, the pipe and filter-media together should be completely wrapped in a proprietary non-woven filter fabric.

Commerce Street

The existing Commerce Street is a single carriageway unclassified road which crosses the line of the by-pass at approximately chainage 2600m. Booth Street and Jane Street the road is to be diverted to the north of its present adlignment, cutting through a promontory known as North Hag. maximum depth of cutting is about 10m on centre-line, but the height of side slope to appear finally will depend upon how much of the promontory is removed when the area is land-scaped. Between the proposed Commerce Street Bridge (No. 5616), and Swinnel Brook to the north-east. the formation is likely to be in sandstone rock (Lower Haslingden Flags), as far as chainage 290m, although this has not been proved because of the difficulty of siting a rig on the steeply sloping ground. The rock-head falls away steeply to the west so that to the south-west of Commerce Street Bridge the formation will be in glacial drift consisting of mainly gravelly silty sands, some of which may be slightly clayey. Along the lower lengths of road the formation is likely to be below the water-table necessitating the construction of the verge drains at an early stage.

Topsoil should be stripped from the whole of the area an average of 100mm being available.

Standard side slopes of 1 in 3 in cutting, and 1 in 2½ on embankment should be satisfactory. The excavated material is expected to comprise 60% soft suitable south-west of the bridge, and 75% rock north-east of the bridge, the remainder being unsuitable.

Considering that, where the formation is on rock, the rock may not extend across the full width of the carriageway for more than a short length, it is recommended that a 400mm thick sub-grade layer of S.F.1 be employed throughout the length of the diversion. The superimposed construction should be as for Helmshore Road.

The existing Commerce Street is paved with setts. Towards the ends of the proposed diversion the setts have been surfaced with dense bitumen macadam. Where the new surfacing covers the same area as the existing, it should be possible to provide a minimum overlay of 95mm on the setts which should be satisfactory. Narrow widenings of less than 2.0m should be constructed as is recommended for Helmshore Road.

The verge drain on the west side is likely to be in rock between chainages 190m and 290m. The backfill to all of the verge drains should be Type B, but the pipe and filter-media together should be completely wrapped in a proprietary non-woven filter fabric.

Some small allowance for face drainage west of Commerce Street Bridge should be made.

Bridge Street Diversion

Bridge Street, which at present crosses the line of the by-pass at approximately chainage 2748m, is to be diverted clear of the main route onto a berm set into the west batter of the cutting through North Hag. The south end of the diversion is to connect into Commerce Street diversion.

The design of the earthworks in this area has been discussed in Part I (page 28).

The formation will be in layered, gravelly, silty sands, some of which may be clayey. The formation along the central part of the diversion is likely to be below the natural water table necessitating early construction of the west verge drain.

A 400mm thick sub-grade layer should be satisfactory supporting the following construction:

20mm Dense Bitumen Macadam wearing course to Clause 908.

75mm Dense Bitumen Macadam base-course to Clause 903.

75mm Dense Bitumen Macadam roadbase to Clause 811.

150mm Type 1 sub-base to Clause 803S.

Verge drains should be backfilled with Type B drainstone but, because of the preponderance of silt and fine sand, the pipe and filter-media together should be completely wrapped in a proprietary non-woven filter fabric.

Hud Hey Road A.677

Hud Hey road at present crosses the line of the by-pass at chainage 3452m approximately, on a gradient falling at about 1 in 30 from west to east. It is proposed to keep the present width and alignment and carry the new road over the by-pass on a three-span bridge (No. 5617).

Short lengths of new construction will be required at each end of the bridge and are likely to be on back-fill to the contractor's temporary excavations. A 400mm thick sub-grade layer of S.F.1 should be satisfactory

carrying the same construction as is recommended for Manchester Road (A.680), (page SR/6).

The existing carriageway is finished in rolled asphalt wearing course and appears to be in good condition.

Blackburn Road A.680, and Rising Bridge Roundabout

The by-pass at its northern end has been designed to terminate at a new roundabout (on Blackburn Road) which will form part of the ultimate scheme when the main route is extended northwards towards the M.65 at Huncoat. The proposed earthworks in this area have been discussed in Part I (page 35).

Since Part I was published additional boreholes have been taken to define the thicknesses of peat present over the area of the proposed widening of Blackburn Road south of the roundabout. The depth to the base of the peat varies from nil to 1.9m. This peat must be removed before any fill is placed. The quantity involved is estimated to be 2000m³.

The width of the base of the peat excavation at any cross section should be determined by projecting the toe of the proposed batter at a slope of 45° away from the carriageway to meet the bottom of the peat excavation. The side slopes of the excavation, being temporary, may be set at 45°. Any slumping which occurs before backfilling can take place should be minimal.

Additional boreholes have been taken along the line of the adjoining sewer diversion. From the information available the line of the sewer diversion appears to be clear of the area of peat excavation required for the carriageway.

A 400mm sub-grade layer of S.F.1 should be satisfactory carrying standard construction as is proposed for Manchester Road (page SR/6).

The existing carriageway of Blackburn Road is surfaced in rolled asphalt wearing course and appears to be in reasonable condition. Where the new surfacing covers the same area as the existing, a minimum overlay of 75mm should be provided, if possible. Where this is impracticable, because of the relative levels, the existing surfacing should be removed to a depth of 75mm below the proposed finished road level before adding the new construction.

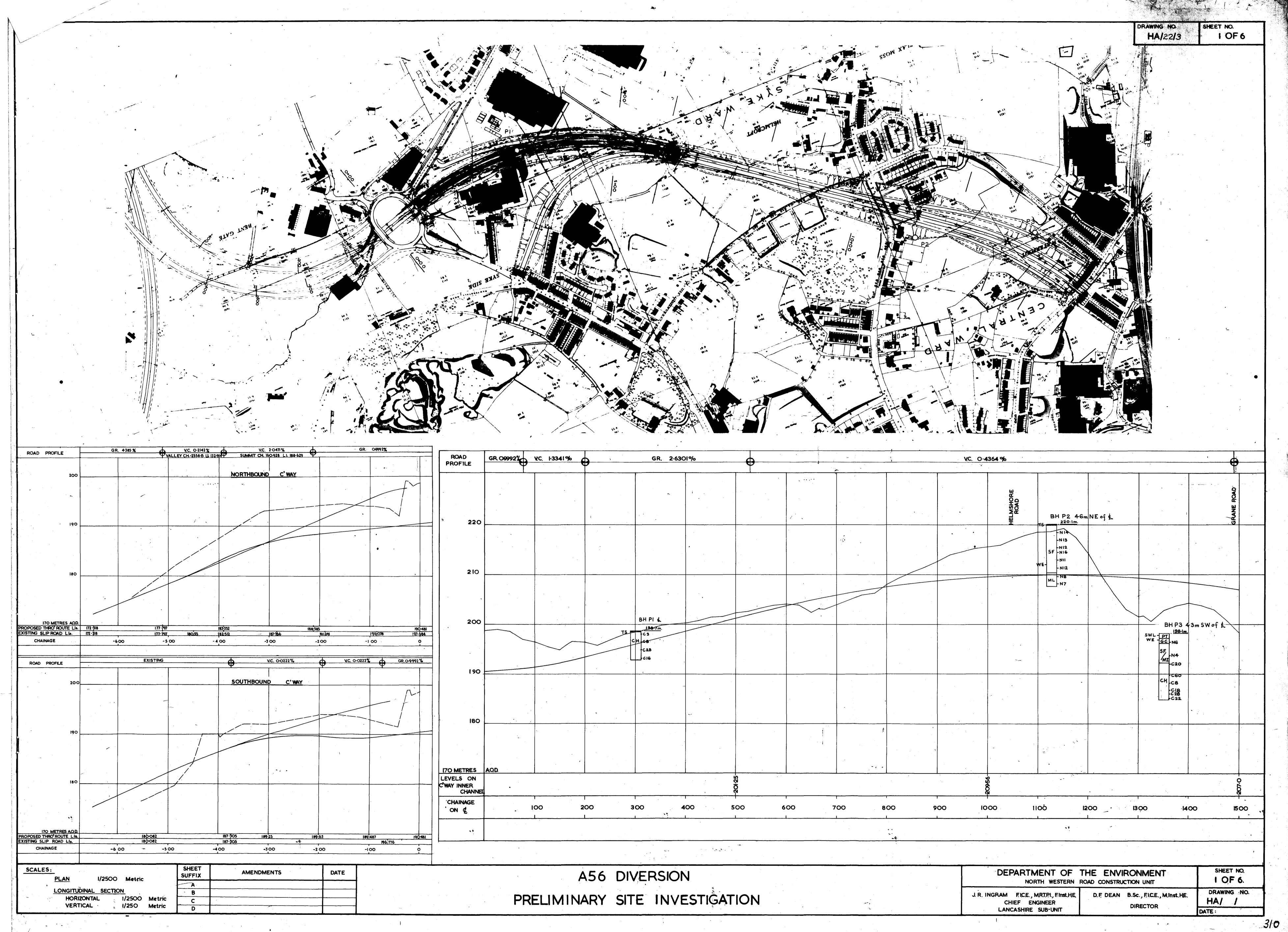
Narrow widenings of less than 2.0m should have the following construction plus surfacing:

150mm Dense Bitumen Macadam road-base to Clause 811.

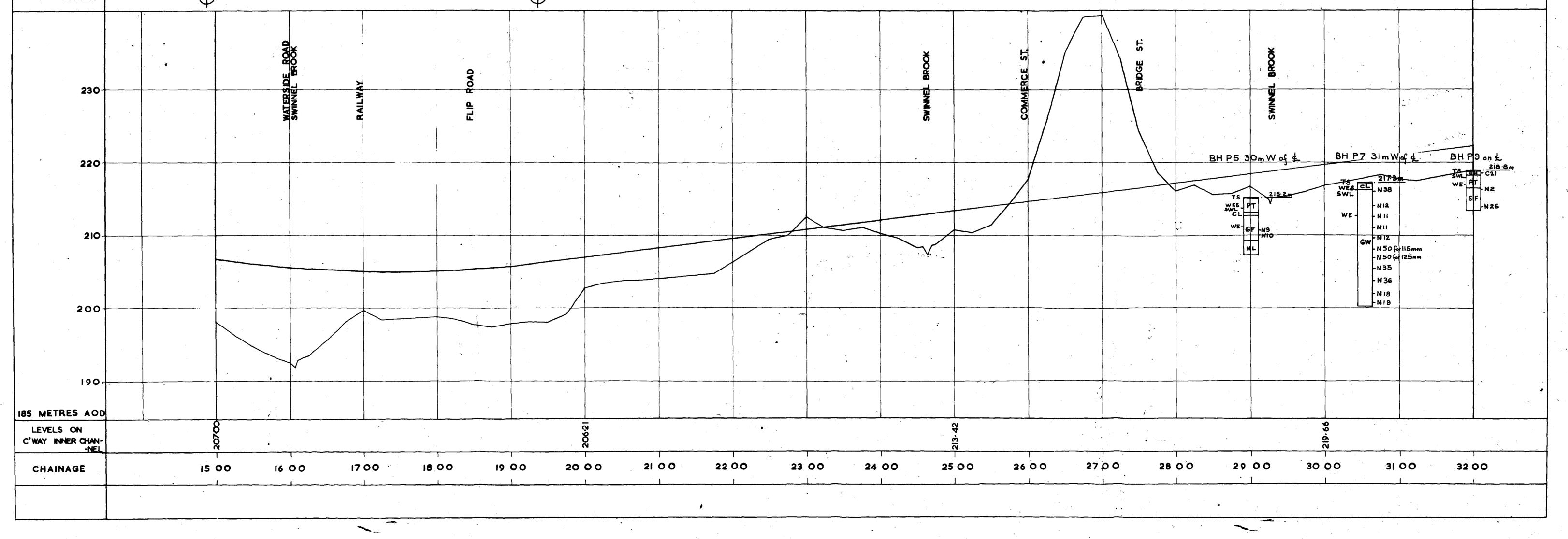
150mm Lean Concrete to Clause 807.

450mm Type 1 sub-base to Clause 803S.

Verge drains should be backfilled Type B drainstone, but, because of the preponderance of wet silt and fine sand, the pipe and filter media together should be completely wrapped in a proprietary non-woven filter fabric.







SHEET SUFFIX SCALES: DATE **AMENDMENTS** 1/2500 Metric LONGITUDINAL SECTION
HORIZONTAL 1/2
VERTICAL 1/2 1/2500 Metric 1/250 Metric

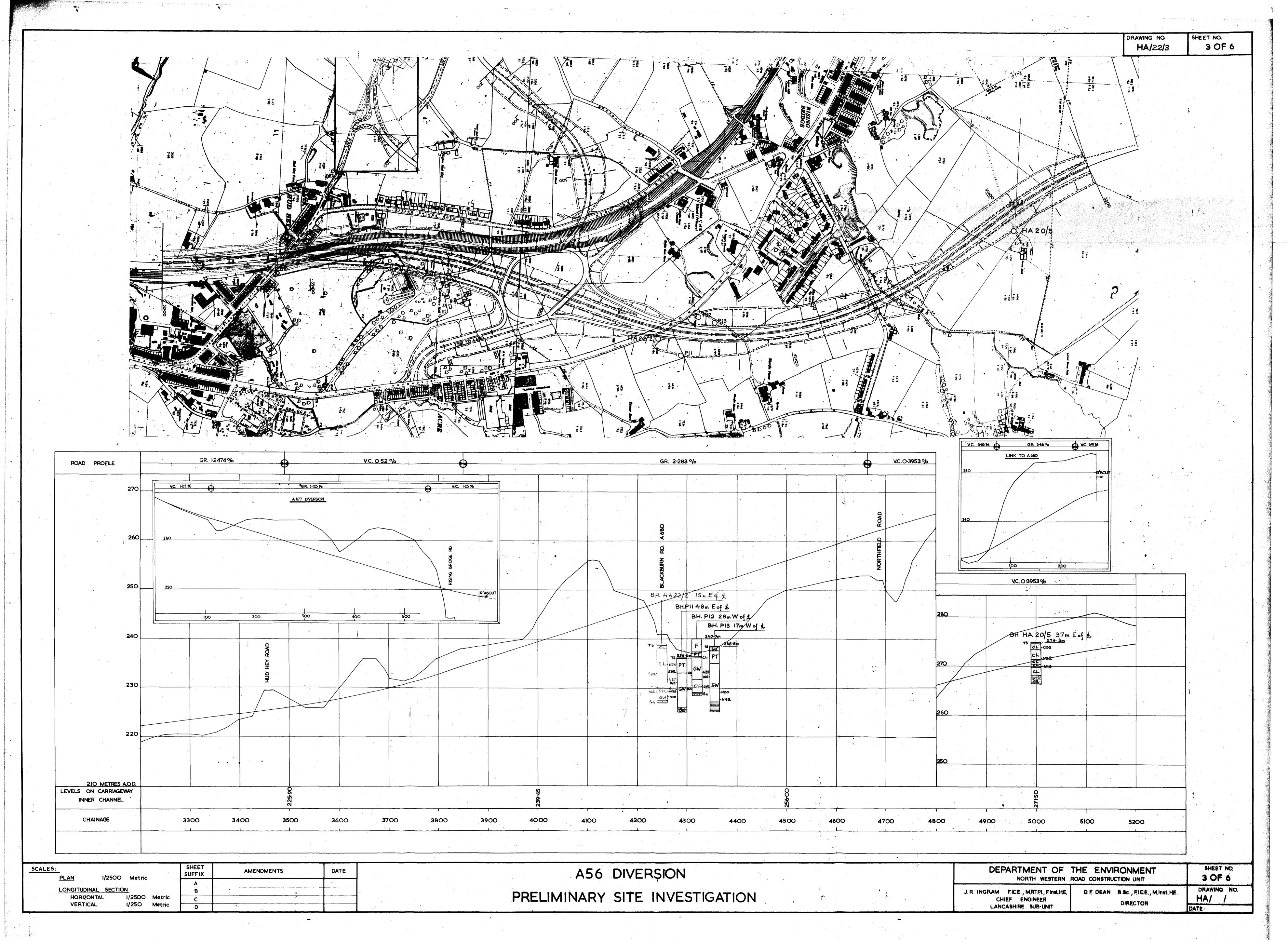
A56 DIVERSION PRELIMINARY SITE INVESTIGATION

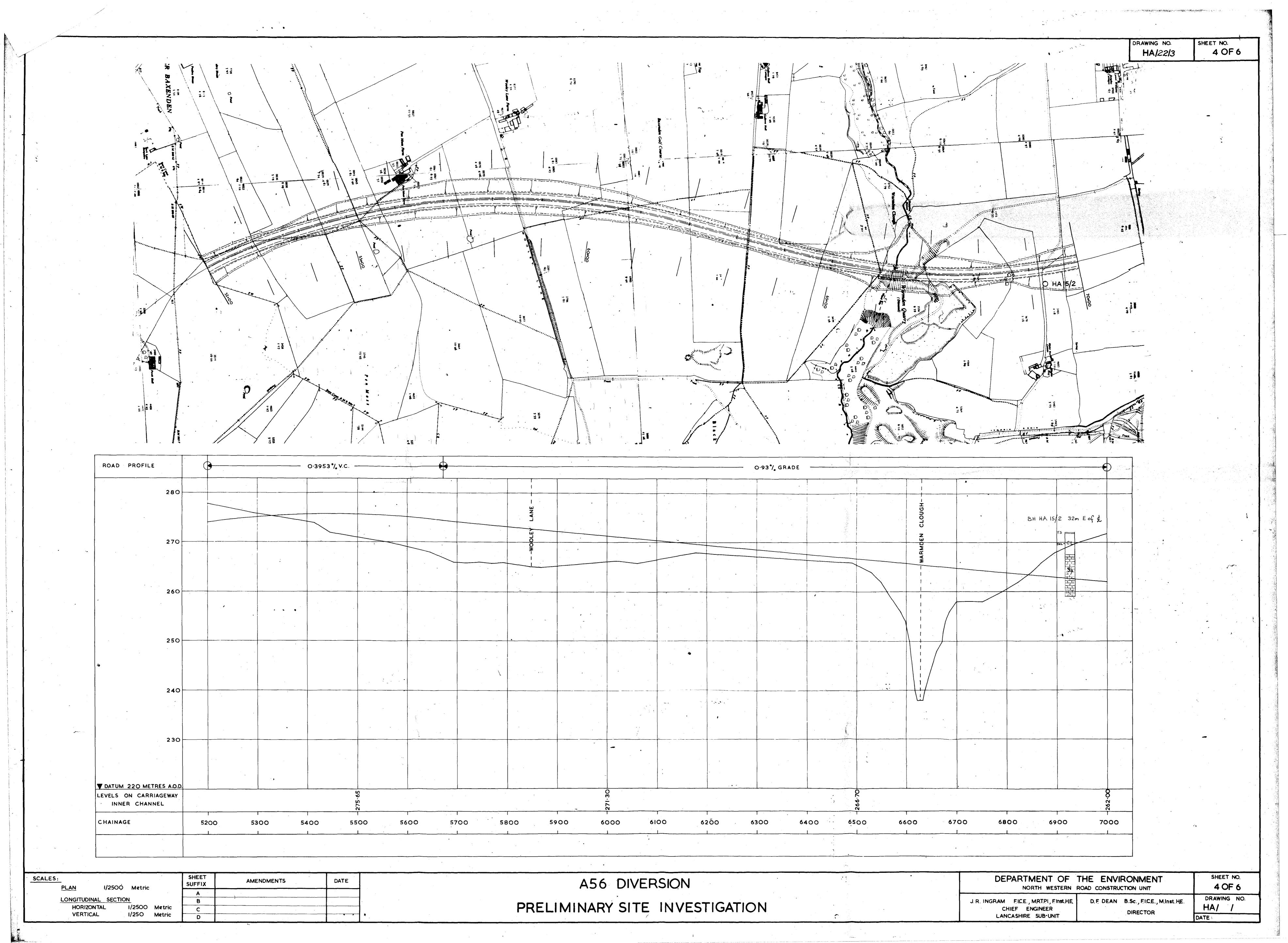
DEPARTMENT OF THE ENVIRONMENT NORTH WESTERN ROAD CONSTRUCTION UNIT J. R. INGRAM FICE., MRTPI., FINSLHE,
'CHIEF ENGINEER
LANCASHIRE SUB-UNIT D.F. DEAN B.Sc., F.ICE., M.Inst.HE.

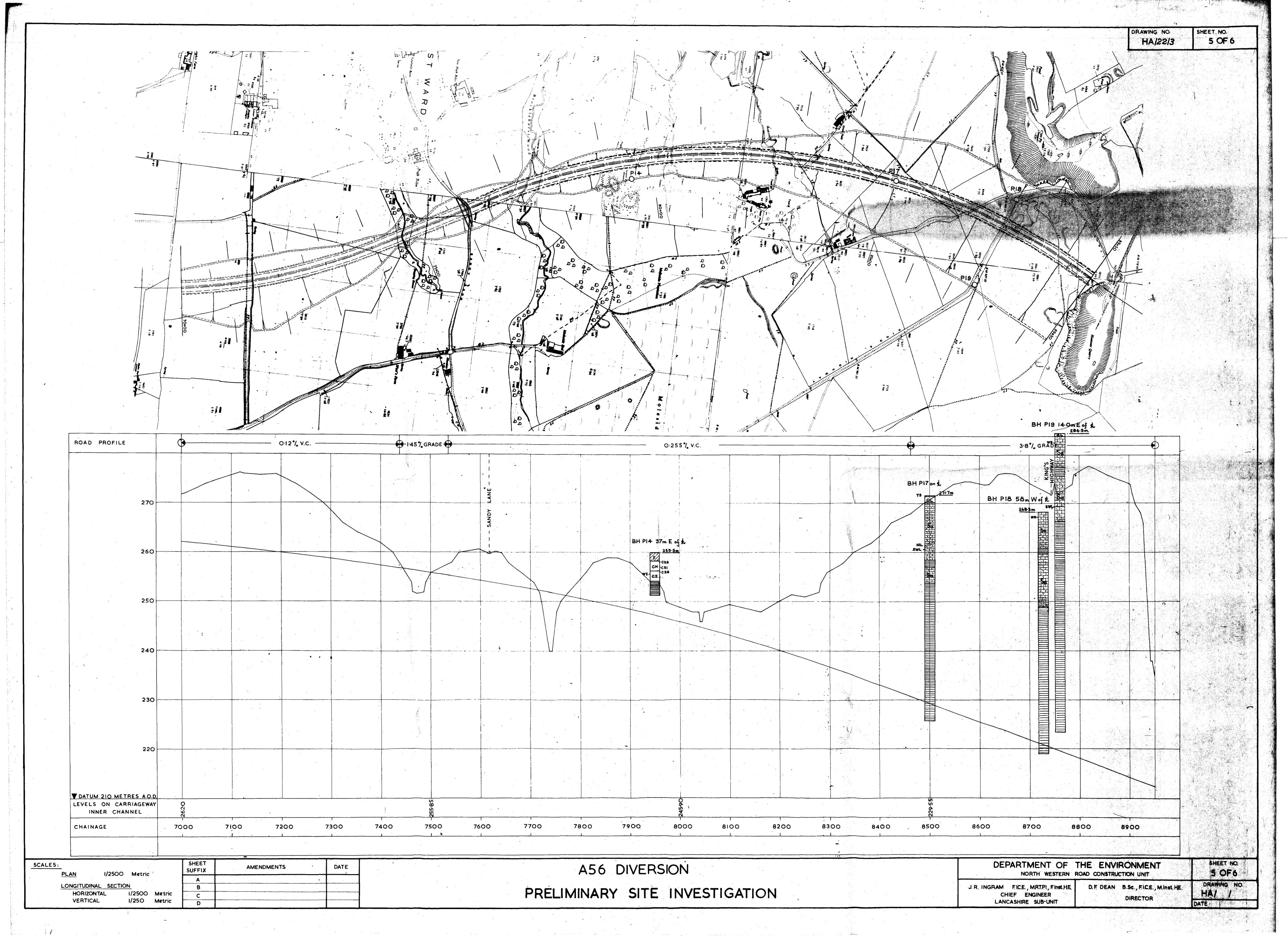
DIRECTOR

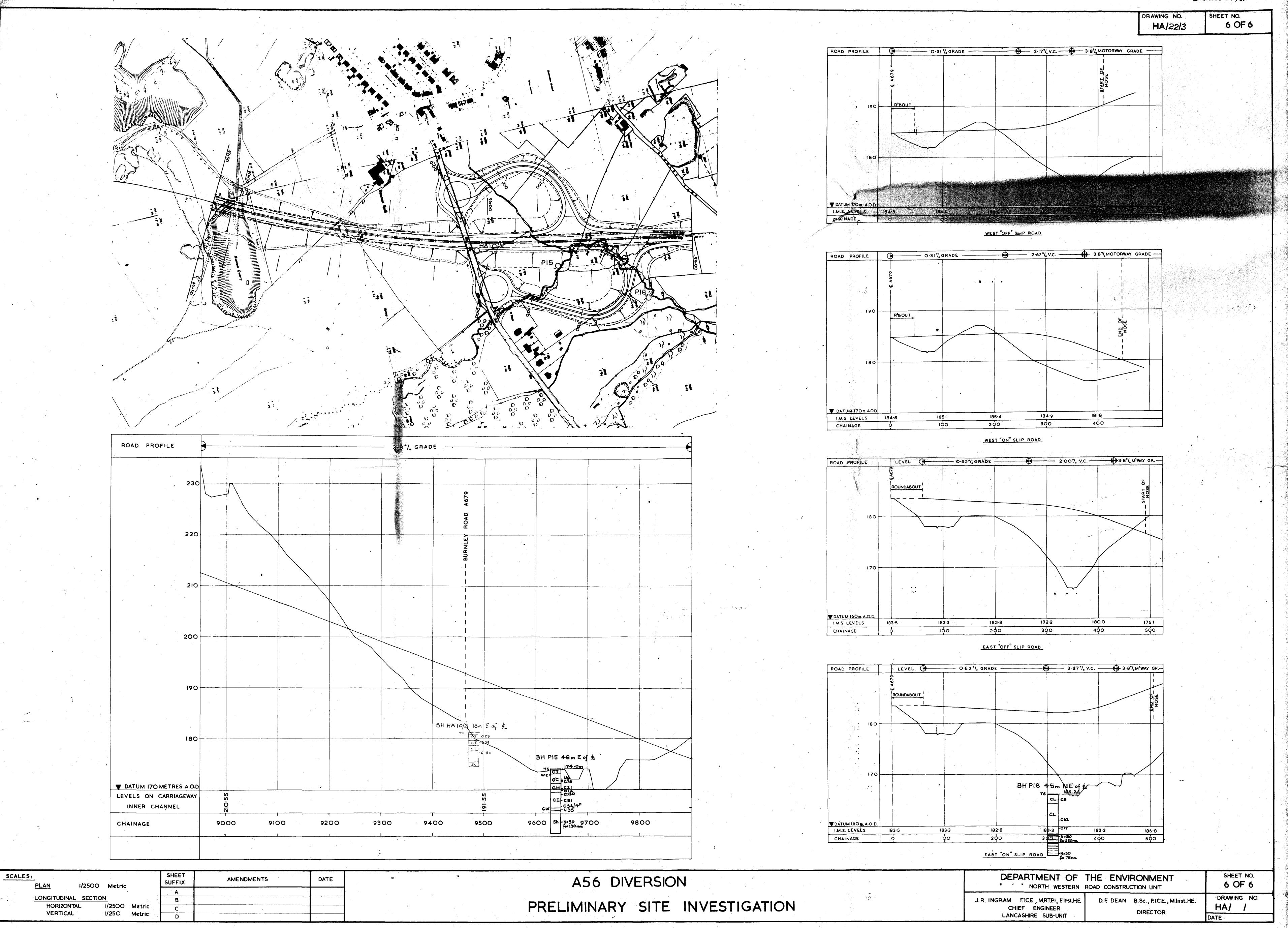
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2 OF 6 DRAWING NO. HA/ / DATE:









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BOREHOLE DATA SHEET No. .../... OF .../....

JOB No.

DEPTH

SCHEME ASG DIVERSION. HASLINGDEN TO ACCRINGTON

Depth Sample 123 Key M.C. LL/PL/PI Class'n N Value Wist & a START START CLAY. Depth 123 Key M.C. LL/PL/PI Class'n N Value Wist & a START START CLAY. O.8 U4 377 35.5 75/32/43 CH	
SOFT MOTTLED BROWN GREY SILTY CLAY. FIRM DARK BROWN 0.8 U4 377 KJ 35.5 15/32/43 CH	
·	
SILTY CLAY WITH GRAVEL. SOFT DARK GREY-BROWN VARVED SILTY CLAY WITH PARTINGS OF SILT SILTY CLAY KI 36.1 55/24/35 CH KI 34.6 29/11/18 CL	 -
AND SILTY FINE SAND AN INCLUSION OF BOULDER CLAY AT 2.5 m. U4 35.8 57/22/35 CH KS 32.1	
5.8 U4 27:1 calculated	
FIRM TO STIFF DARK GESY- BEOIVN SILTY CLAY WITH SOME PINE GRAVEL.	
(BOULDER CLAY)	
	
STRENGTH TEST RESULTS	

Depth of Sample	Bulk Dens'y (kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	Comp. Stress (kN/m²)	Cohesion (kN/m²)*	Ø	Remarks
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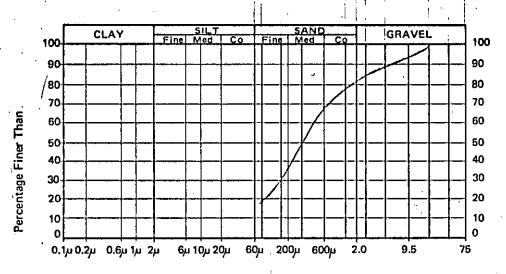
COMPACTION AND OTHER TEST RESULTS

Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	s.G.	Air Voids	C.B.R.	SO3 gm/litre	ρН	Remarks or other tests
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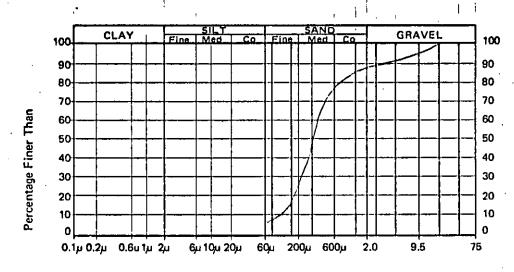
#### PARTICLE SIZE DISTRIBUTION



Description S.F.

JOB No. ...367

Particle Size in mm.

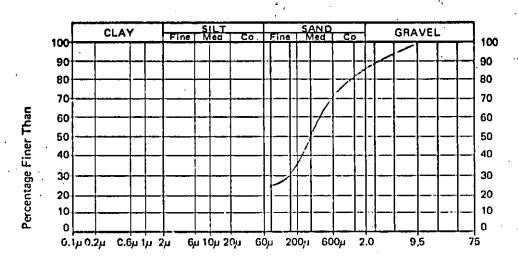


B.H. No. P2

Depth / 5 m

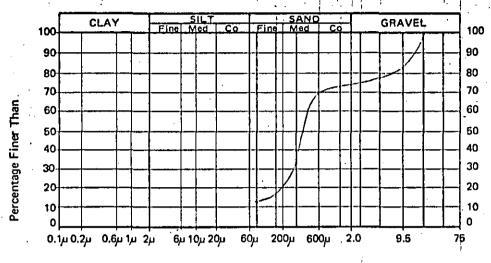
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Particle Size in mm.



Depth 2:5 m

### PARTICLE SIZE DISTRIBUTION

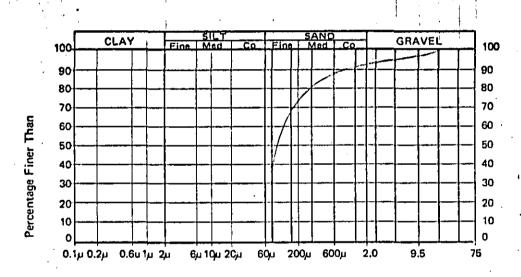


B.H. No. *P2*Depth *40 m* 

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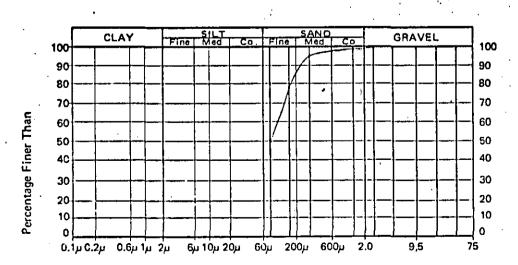
Description ...G.P.

Particle Size in mm.



Description..§:F....

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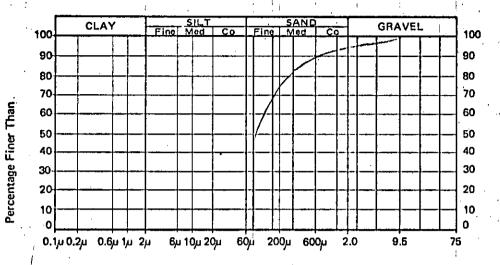


Description...S. F....

Particle Size in mm.

1.18 mm

PARTICLE SIZE DISTRIBUTION



Particle Size in mm.

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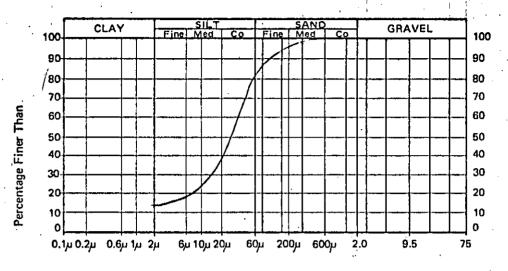
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Particle Size in mm.

SIEVE APERTURES USED 600 µm 9.50 mm 75.0 mm 300 µm 4.75 mm 37.5 mm 2,36 mm 150 µm 19.0 mm 1.18 mm 75 µm

B.H. No. ... Description.M.A.



B.H. No. P2

Depth /O O m

Description M.L.

Particle Size in mm.

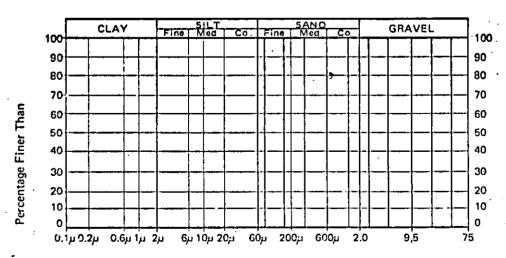
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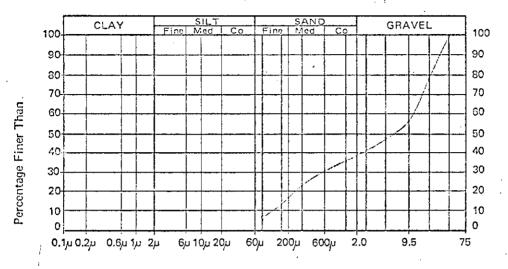
Depth ......

		LANCASHIRE COUNTY COUNCIL  BOREHOLE DATA SHEET No OF .2  SCHEME ASA DIVERSION HASLINGDEN - ASCRINGTON  LOCATION 1350m OFFSET 43m S.W									B.H. N DEPTI	o. 367 o. P3 1 13 4 m ND LEVEL 198:1 m
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-	VERY LOO	SE RLUE	- GREV		1	B .	23.3		•		6	
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6	VARIABLE	VERY S	SOFT - FIRE	6.0 M	(4.85)	U4 8.	30.8	ì			·	
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Des	cription of Strat	<b>ប</b> កា	Depth	Sa  1 2 3	implu Key	M.0		.L/PL/PI ore Rec'y	Class'	r. N Value	· · ·	a viet
UARIASLE	VERY	SOFT	•	i i	l e	32	। ভি			1	į	
TO FIRM	•				13						1	
BROWN		,			 							
SILTY		,			144	- 1.28	.2 			 	-	
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GREY BK							į			<b>\$</b>		
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-										į	; }	
STRENGTH	TEST RES	JLTS	<del></del>	!					<del></del>			
Depth of Sample	Bulk Dens'y kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	Co	mp. S kN/m	itress	Coh (kN/	esion (m2)	ø	,	Remark	(S
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11-25-11-70	1910	1490	28.2		36		1 8		- !	200 At 10 Y 100		
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COMPACTION	TO DNA NC	HER TEST	RESULT	S				<u></u>				
Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	1	G.,	Air Voids	C.B.R.	SO3 gm/litre	Нα	Ro	emarks of ot	her tests
		(Kg/ma/	(70)	<del>                                     </del>		4 O1:15		grante				
			<u> </u>	-	-							
				-		· · · · · ·						
GENERAL	REMARKS	<u> </u>	<u> </u>	<u> Т.,.</u>				<u> </u>				

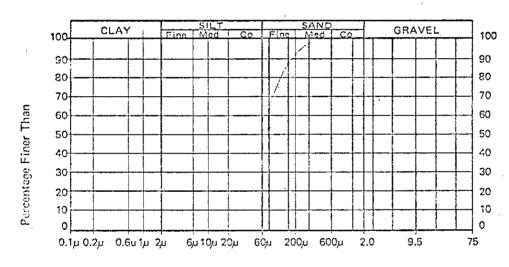
JOB No.

LANCASHIRE COUNTY COUNCIL



B.H. No
Depth/ 5 m
Description GC

Particle Size in mm.

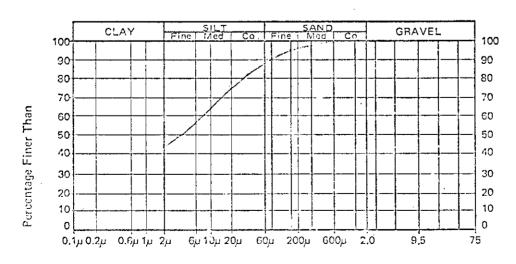


B.H. No. 73

Depth 3:3 m

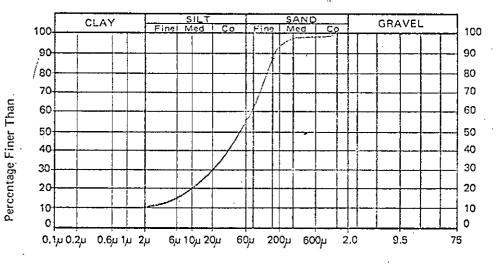
Description 5 F

Particle Size in mm.



B.H. No. 73. Depth 4:8.7

Particle Size in mm.



B.H. No. ....?3..... Depth ... 7.5 m... Description ......

Particle Size in mm.

	CLAY	SILT			SAND			AVEL
100	CLAT	Fine Med	Co	Fine	Med	Co	T	1 1 1
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20			٠.					╂┷╌╂╌┼
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Depth .....

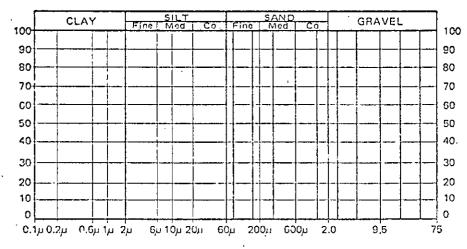
Description.....

B.H. No. .....

Depth .....

Description.....

Particle Size in mm.



Particle Size in mm.

SIEVE APERTURES USED

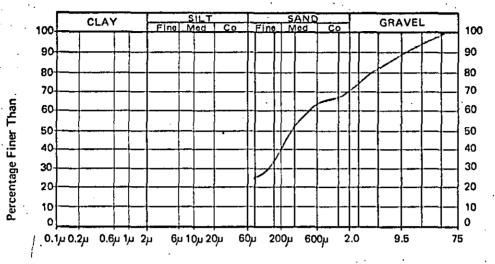
Percentage Finer Than

75,0 mm 37,5 mm 19 0.mm, 9.50 mm 4.75 mm 2.35 mm 1, 18, mm

600 µm 300 µm

150 µm

Metric		LANCAS	HIRE COU	NTY C	oui	NCIL							o36 <i>7</i>
٠. د		BOREHOL	E DATA SHE	ET No		OF	<i>!</i>					B.H. N	o
•	SCHEMEA.	56 DIKA	DC5λΩΛÌ	HAS	<i>\.</i> !./.	VG.DX	<u>لار</u>	<u>7.</u> α	Ace C	11.6.70	۸/		8:0 m
	LOCATION	29000	OFFSE7	7 30m	W							GROU	ND LEVEL 2/5.2 m
		cription of Strat				ample 3 Key	м.с	;.   c	LL/PL/PI Core Rec'y	Class	'n	1 Value	Water & Casing Details
	SOFT BROWN SF	NDY CLAY	FGRAVEL	0.3		0.4			<u> </u>				370270 12 20 71 72
						_B .	,00.					•	
	- PEAT	-	•		2	u4.	347	0			_		
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				_ , 。			ne.						50.1.5m
	V. SOFT BLUE SOHE ORGANII			7 4		U4.							
•	}					8	23.4						
	LOOSE BLE									-	_	<del> </del>	
	WITH BAN												
	SANDY SIA	r	· KE y		1	U4		G	RNDING	6 =		•	WE WO m
	$\Gamma$ $\Gamma$					В	12.4						
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0	[ <del>-</del>	:				C. P	9.0	- 6	MDING	S. ¥	_ _		
		•				S 7. 8			ME	sw	`` ,,	1	
				6.0.		B.	   						
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•	LOOSE		,		Ţ	<i>U</i> 4		SE	DIMEHT	Tion M			
1	LENSES C			. ]	4			,		_	_	<del> </del>	
	BROWN SIL		•		H	β.	23.9						
	MEDIUM	,				U.4.							28.9.72
				80								-	CASING 7.5m S.W.L. 1.5m O.W.
	•		'										J.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
	<u>[</u> -							_	•		$\dashv$		
•	F		•										,
•	ļ.		•						·		•		
$\bigcirc$	STRENGTH	TEST RESU	JLTS				<u> </u>	<del></del>			<del></del>		
_	Depth of Sample	Bulk Dens'y kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	C	omp. St (kN/m²	ress	Coh	nesion /m2)	Ø	Ċ		Remarks
	0.00-0.35		_	_	1	-			-	-	70	P3014	
	1.06-1.40	-	_	547		_					PER		
	2.00-2.40	, -	_	_		_	_		_	_			
,	350 - 3·95	-	_	-		_			-		GRA	DING	
	6.50 - 6.90	-	-	-		-			_	<u>.</u>			LE TO TEST
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					_	ì							
	COMPACTION	ON AND OT	HER TEST	RESUL'	TS	*		·			<del></del>		
	Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)		s.G. \	Air /oid:	C.B.R	SO3	pН		- <del>- R</del> e	marks or other tests
	7.50		4-136 17-201	1295			2.027		TEAC E	70	· w	(ATE	e sample
			·		_					-			· · · · · · · · · · · · · · · · · · ·
	·												,
	GENERAL F	REMARKS	CATURAT	- = 0	ß	EZOV	<del>¹</del>	1.5	m.		<del></del>	<del>"</del>	19



B.H. No. <u>75.</u> Depth <u>3.5 m</u>

Description .G. .F..

Particle Size in mm.

CLAY GRAVEL 100 100 90 90 80 80 70 70 Percentage Finer Than 60 60 50 50 40 30 20 10 10 60u ىر2 بر1 ن0.60 6µ 10µ 20µ 200µ 600µ 75

B.H. No. 75

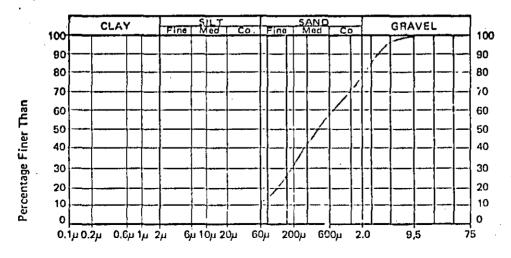
Depth 5:3 m

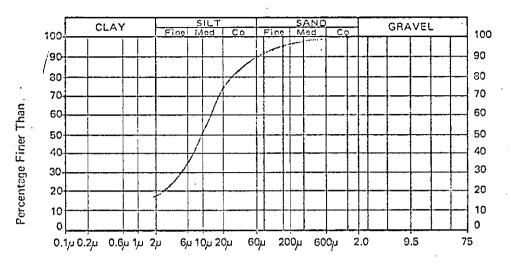
Description S. W.

B.H. No. . 725

Description...S.....

Particle Size in mm.





Description ... M. 4....

Particle Size in mm.

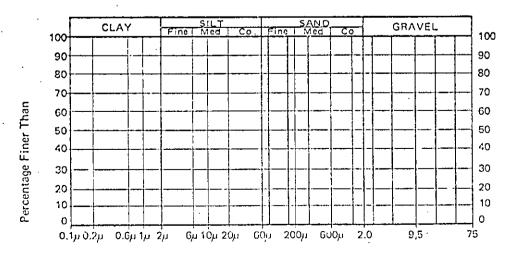
	CLAY 1		SILT Med			SANC		GF	RAVEL	
100	7 7 7	Finc	Mcd_	Co	Fire	Med	Co	<del>- 0</del>	7	_
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20	-			<u> </u>					-  -	+
10			_			_			-  -	
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0.103	0.2µ 0.6u 1µ	2u 6i	10ju 2	Ou G	0 ₀ u 200	Du 60	Ou 2.	.0	9.5	

B.H. No. .....

Depth .....

Description....

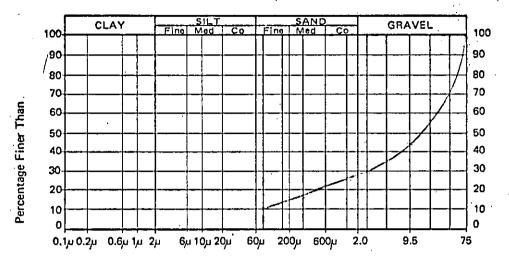
Particle Size in mm.



Description.....

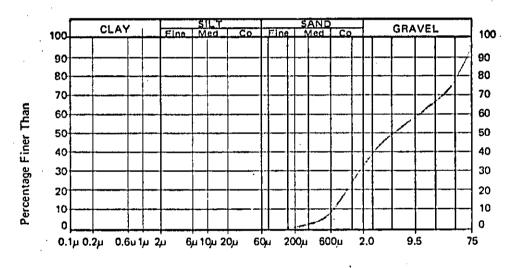
Metric	:		LANCAS	HIRE COUN	TY CO	וטכ	VCIL							367
		SCHEME		E DATA SHEE V.E.P.S./.O.A./					<u> </u>	<u> </u>	CHIMA	TO'DEPTH	ł	<i>P7</i> /7:0.m
		LOCATION	305400	OFFSET 3	5/m 1			,				GROU	ND LEVEL	217:3 m
		Desc	ription of Stratt	iw .	Depth	1 2 1 2	ample 31 Key	M.C	i.   c	LL/PL/PI Core Rec'y	Class'n	N Value		Casing Details
	,	TOP SOFT GREY SILTY SAN WITH SOM	DY CLAY		0.2	11	6 6	20	_ _		CL		W.E. I.	0 m
	æ	<i>/</i>		-		S 10 300	U4 W 8 CP		6	2NDING	G ₩.	38	Rose 70	
	3	MEDIUM	_				В							
		GRAVEL WITH.A.	DARK BA	rown .		# 1.5 m	Cre B		GR	ADING	GW	12.	So. 3	· 0 ~
		SAND N	CLAYEY.				CPB							sm (станон
	. د ا	SATURAT	ED BEL	.ow Im.		<b>图</b>	8							
	A .					12.00	CP 8		G	RADING	ew.	11		
	,								G	KADMG	5 w	12	·	
	ď						CP. 8							
	9		·			EZ .	CP.		G	ento ing	عد	N = 50 for 111mm	CASING	9.0°m SWL 1.5
$\sim$	H	STRENGTH	TEST RESU	JLTS			<del>                                     </del>	<del></del>					<u> </u>	
	)	Depth of Sample  0.00-0.20	Bulk Dens'y kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	С	omp. Sti (kN/m²	ress )	(kN	nesion I/m²)	Ø	Top5012	Remarks	
·		1.25		-	-		-			-	-	GRADING		
						-								
	•	COMPACTIC	N AND OT	HER TEST R	ECIII.	Te								
		Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C.	<u> </u>	s.G. (	Air 'oids	C.B.A	SO ₃	рН	Ro	emarks or oth	er tests
		150		(Kg/m3)	(%)	+	† <del>`</del>	010\$		Tarica (	<del>  </del> -		. US & S.A.V	
						+						· · · · · · · · ·	· · ·	
											-		<del></del>	
		GENERAL F	REMARKS											('3

	•	HIRE COUN E DATA SHEE								o
SCHEME A.S.		NA				\C.C.E.!	<u> </u>	,	DEPTH	۱ <i>!7</i> : ۵
LOCATION	3054m0	FFSET 3	5/m h						GROU	ND LEVEL 217:3
D esc	ription of Stratt	ım	Depth	Sample 123 Ke	e M.	ა. <mark>ბ</mark>	L/PL/PI ore Rec'y	Class'n	N Value	Water & Casing De
							,		}	
-	,	:	,	CP					30/107	
ı [-	,			НПв		<del> </del>				<u> </u>
	_			B						
MEDIUM							•			
GRAVEZ	AND	COBBLES		11 g	, . <del>│                                  </del>				35	
WITH A	DARK	BROWN		nII					ر	٠.
-SANO A				6.		G.E.	ADING	GW.	· .	26.9 72
ſ										27 9 72 SWL.
TIMES	•	•		CP	۱.				36	
+ SATURAT	ED.			B		<del>-  </del>		-		
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\$  <del></del>  -										
· .				C.P	В				18	
16					<u> </u>	$\dashv$		<del></del>		
		•		င့	<b>P</b>				19	27/9/22. CASING 16.5m
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†					·	+		<del> </del>	<u> </u>	
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			.]							
STRENGTH	TEST RESU	JLTS								
Depth of Sample	Bulk Dens'y kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	Comp.	Stress m2)	Cohi (kN/	esion (m2)	ø		, Remarks
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COMPACTIC	N AND OT	l <u> </u>	ECHI	<u> — — — — — — — — — — — — — — — — — — —</u>		[		1		
- COMI ACTIC	Compaction	Dry Dens'y	M.C.	S.G.	Air	C.B.R.	SO3 gm/litre	На	0.	amarks or other tores
Donth of Somete	-compaction	(kg/m3)	(%)	3.0.	Air Voids	C.B.H.	gm/litre	hα		emarks or other tests
Depth of Sample										
Depth of Sample				-		-	-			
Depth of Sample								•		



B.H. No.  $\mathcal{P}\mathcal{F}$ Depth 1:3mDescription G.W

Particle Size in mm.

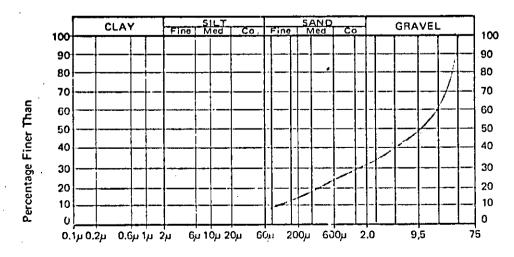


B.H. No. 77

Depth 35 m

Description G-W

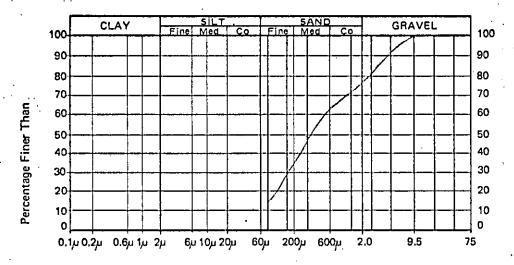
Particle Size in mm.



Depth 6:5 m.

Description 6 W.

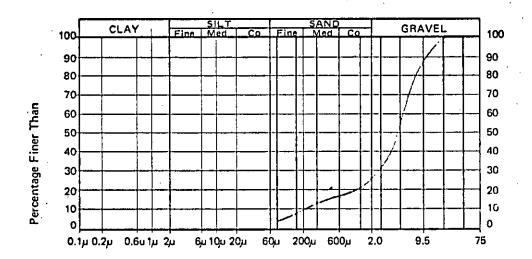
B.H. No. .... P.7.



B.H. No. 7.7 Depth .8:0 m.

Description ...S. W.....

Particle Size in mm.

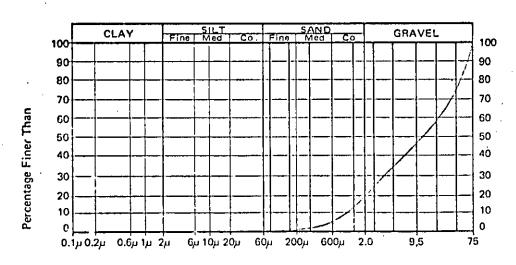


B.H. No. P.7

Depth 9.5 m.

Description 6.9

Particle Size in mm.



B.H. No. P7

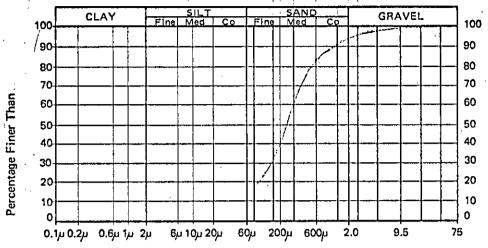
Depth /2 B.m.

Description G W

Metric		LANCAS	HIRE COU	NTY C	oui	VCIL					367
٤	SCHEME A.5.	_	E DATA SHEI					CINATION		DEPTH	o
	LOCATION	32002	£							GROU	ND LEVEL 218.3 m
		ription of Stratu		Depth	1 S	ample 3 Key	м.с.	LL/PL/PI Core Rec'y	Class'n	N Value	Water & Casing Details
·	TOPSO SOFT MOTE VERY SILTY			0.7	5	U4 B B	49.2	56/24/32	СН		STACICO 23.9 72
	PEA-	7".		:	-	W U4 B	661 6 46.0				VE AT ROM
	VEQU			_25	S3	S.P	71.4	GRADING	sw	3	
	VERY L VERY SI WITH S	SOME G	AND. RAVEL,		HC:	\$₽ 84 84					
	- COBBLES		ULD ERS, ICLUSION	vs							•
				· 5. 5		C P.				26.	23 9 72 CISING 5:571 SWL 1:011 0.4.C.
	-	· ·									
٠.	-										
	- -										
Ò	STRENGTH			M.C.		comp. St	ress	Cohesion		· = •••••	Domain .
	Depth of Sample	Bulk Dens'y kg/m3)	Dry Dens'y (kg/m3)	(%)	-	omp. Sti (kN/m²	1)	Cohesion (kN/m²)	0 7	6 mm × 38n	Remarks  THE DIA REMOULDS
	0.00 - 0.40	1735	1231	40 5 681.6	-	42		<i>21</i>			
	1.00 - 1.45. 3.00	•	-	,	-			_		rat 700 we	r to TEST
				-	_ -	<u></u> .					
•									-		
	<del></del>			· ·						· · · · · ·	· · · · · · · · · · · · · · · · · · ·
					_						
•	COMPACTIO	N AND OT	HER TEST	RESUL	TS				<del></del>		
	Depth of Sample	Compaction	Dry Dens'y (kg/m/3)	M.C. (%)		s.g.	Air oids C	B.R. SO3	рН	R	emarks or other tests
	1.0		1.187.1107	1,01				TKHCL		NATER	SAMPLE
					_ _					٠.	
,	CONTRACT				1						

lm.

### PARTICLE SIZE DISTRIBUTION



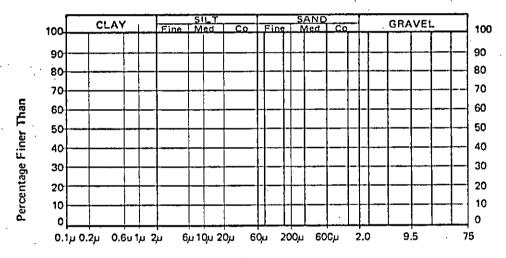
JOB No. ...

B.H. No. ... 729

Depth .... R.B. 271...

Description ..S..W...

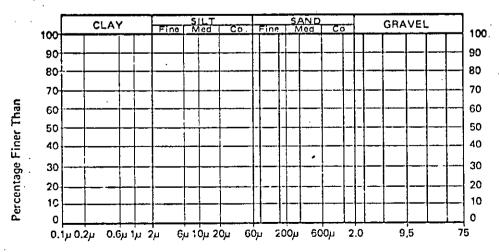
Particle Size in mm.



Depth .....

Description.....

Particle Size in mm.

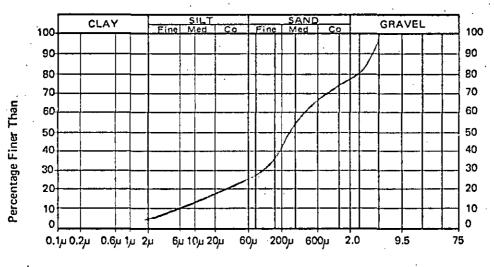


B.H. No
Depth
Description

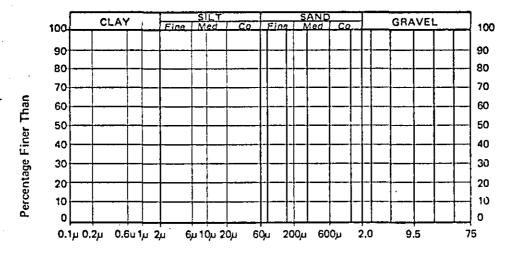
	art.		HIRE COUN									s. <u>36.7.</u>
i			E DATA SHEE								B.H. No	o
	SCHEME A.S.						T.O	s.6.	??!\.G.7.?	ρM.	DEPTH	
	LOCATION	4290m	OFFSET		<del></del>		·	<del></del>			GROUI	ND LEVEL 236:2
1	Desc	ription of Stratu	m	Depth	San 112131	nple Key	M.C.	Col	./PL/PI re Rec'y	Class'r	N Value	Water & Casing Do
ŀ	- 170F	2501L ·		0 15								MARIEL 26 4 -
ŀ	. •				$H \coprod$		190.0		•			
	PEAT	WITH	SOME		211	Ц4 к5	270 -8	<u> </u>				
ŀ	COBBLES	AT TA	1 <del>E</del>	1.		,				İ	1	
Ī	BASE			· ·								
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ŀ	A CLA	YEY SA	NZY									15 mms.
ŀ						CP					ನಿವ್ಯ	
F	SILTY	MATRI	Х.									
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F						5 P.					75/11542	1
Ì	STRENGTH	TEST RESU	JLTS				<u> </u>	<del></del>				
ţ	Depth of Sample	Bulk Dens'y kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	Cor	np. St cN/m²	ess	Cohe:	sion .	ø		Remarks
ŀ			(kg/m3)			(N/m²	,		ne)		·:	
	0.50.0.90	<i>3</i> - <del></del>		890.0			-	٠,٠			P <u>eat</u> Test on c	LAYEY MATEIN.
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		Compaction	Dry Dens'y (kg/m3)	M.C. (%)	S.C	3. \	Air oids C	.B.R.	SO3 gm/litra	Нд	R	marks or other tests
	Depth of Sample				1	- 1	!		ابري هيء ترا	55-69	WATE	C SAMPLE
	Depth of Sample					_			1 01 02	१० ०५		
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SCHEME A.S.	borehol G. <i>Dive</i> ks		ET No CRING	? OF.? ፖርሲል	2	YASLING.	DEN	B.H. N DEPTH	o. 367 o. 211 1
	ription of Stratu		Depth	T = :	M.C.	LL/PL/PI Core Rec'y	Class'n	N Value	Water & Casing Deta
VERY FIN			- 10.3					· · ·	
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STRENGTH									
Depth of Sample	Bulk Dens'y kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	Comp. (kN/	Stress m2)	Cohesion (kN/m²)	Ø		Remarks
						÷			·
COMPACTIO	ON AND OT			ΓS				•	
Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	S.G.	Air Voids	C.B.R. SO3 gm/litre	рН	R	emarks or other tests
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## PARTICLE SIZE DISTRIBUTION



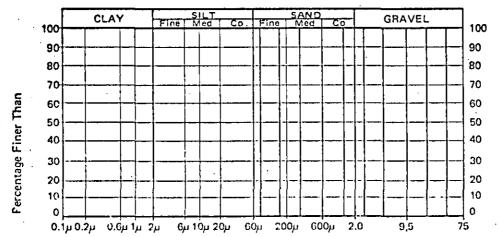
Particle Size in mm.



B.H. No.

Description.....

Particle Size in mm.



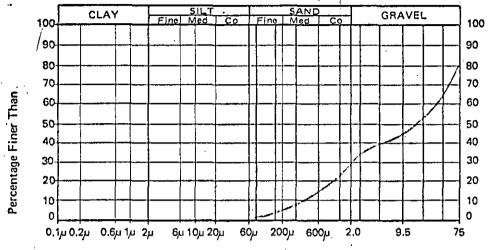
Description.....

B.H. No. .....

Depth ......

	LANCASI	HIRE COU	ITY C	OUN	ICIL	/						o 36	
		E DATA SHE									B.H. N	o	· · · · · · · · · · · · · · · · · · ·
SCHEME .A.T.	6 DILLES	<u> </u>	::::::::::::::::::::::::::::::::::::::	ልስ፤	M	.Ζ <u>ი</u>	લાદદ	R101.	.Z.∩.¢			·//	
LOCATION 4	4519 m.	OFFS	<u> </u>	9 >	ri h/	<u> </u>					GROU	ND LEVEL 2.1.2	.:. <u>O</u> m
Desc	ription of Stratu	m	Dopth	1 S	ample 3 Key	M.C		LL/PL/ Care Re		Class'	n N Value	l	
		· · · · · · · · · · · · · · · · · · ·										STARTED A	1.10.72
FIRM M				8	U4								
BROWN.					K1	21	6			<u> </u>		<u> </u>	<u>.</u>
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FIRM TO	STIFF.	FREY -			U4	10.	l.						
BROWN SA					kī,		<b>P</b>					;	
WITH GRA	AVEL AND	SOME										410 72 B/N 3 EASING 9.0 m 510 72 5 W L	κυ 7
- Codeses.(1	BOULDER	CLAY)								<u> </u>		510 72 5WL	r u m.
STRENGTH	TEST RESL	JLTS											
Depth of Sample	Bulk Dens'y kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	C	omp. S (kN/m	tress 2)	Co (kN	hesion (/m²)		Ø		Remarks	
0.50-0.95	-	-		]			3.	٠.			VANE TES	<del> </del>	
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8.50 - 8.95	<u> 7327</u>	\$110	10.3	<del></del>	150	<u> </u>	.75	<u> </u>			From + UDS	DIA	
10.00-10.50	2110		<u>;-</u>	_ _	156		78	<u> </u>	_	•	178 mm . 100	PAIN DIA	
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COMPACTIC	N AND OT				,								<del></del> .
Depth of Samole	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	s	.g.'	Air Voids	C.B.F	3. gm/l	03 litre	рН		amarks or other tes	5
7 00								TRAC	c <i>E</i> 7	o-7·5	WATES	2 SAMPLE	
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			HIRE COU							JOB No	s34.7
	,		E DATA SHE					<b>a</b>		B.H. No	o
		56 DIVERS	•				ICC.K	CIMEZA	<u> </u>	DEPTH	1
L(	<del></del>	4319m						LL/PL/PI	Class'n	T	Water & Casing Details
o Elb		cription of Stratu		Depth	11 213 K		C	Core Rec'y	Ciass n	N Value	S.O. 10.0 ~
- A	skown s	SA-NDY S	ILTY CHÁ	y	U4  -   KJ	1	او				
COB		AVEL AN BOULDER				"					
\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	RY FIN	E GRAIN.	<u> </u>	<del></del> //-/		P				50/10mm	5/10/42 Change 10.5m
	CTY SA CBROCK	1ND5.TO	NE .	11.5		•   `				50/10 00	chaine 10.5m
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ST	RENGTH	TEST RESU	JLTS						<del></del>		4
	th of Sample	Bulk Dens'y kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	Comp.	. Stress /m2)	Col	hesion, 1/m2)	Ø		Remarks
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C(	)ΜΡΔΟΤΙΟ	ON AND OT	HEB TECT I	3 E C I II 7	.c						
	21VII 770   10		Dry Dens'v	M.C.	3.G.	Air	C.B.R	SO ₃	рН		marks or other tests
	th of Samole	Compartion	(kg/m3)	(%)	J.G.	Voids	U.O.R	' gm/litra	μι,	nc	THE RESULT OF THE LESTS
	th of Sample	Compaction	(Kg/iii3)			Ì			l		•
	th of Sample	l	(Kg/ins/			ļ				· · · · · · · · · · · · · · · · · · ·	
	th of Sample	l	(Kg/m3/	,					,		



B.H. No. ... P.12.... Depth ....6.: 5 m...

Description GW....

Particle Size in mm.

GRAVEL CLAY 100 100 90 90 80 80 70 70 Percentage Finer Than 60 60 50 50 40 40 30 30 20 20 10 10 0 6µ 10µ 20µ 200ju 600µ 9.5 0.1μ 0.2μ 0.6υ 1μ 2μ 60ju 75

B.H. No. ...... Depth..... Description.....

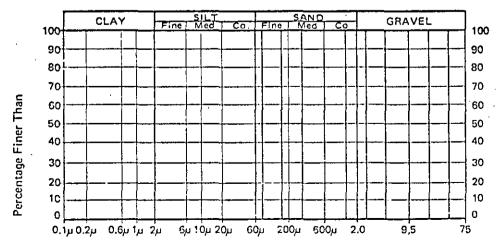
B.H. No. .....

Depth .....

Description.....

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Particle Size in mm.

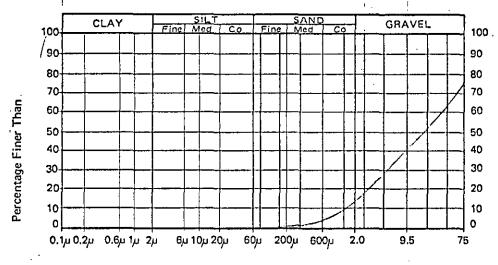


Metric	<i>,</i> ,	LANCAS	HIRE COUN	ITY CO	וטכ	VCIL							367
		•	E DATA SHEE										o
-	SCHEME .A.S	_				•	ΤΩ!	1 <i>CCR</i>		ንልፈ			/ <i>3.4</i> m
	LOCATION	4354 m	OFFSE					γ				ROU	ND LEVEL AREISm
•	Desc	ription of Stratt	ım	Depth	112	ampie 3 Key	м.с	5. C	L/PL/PI ore Rec'y	Class	'n N	√alue	Water & Casing Details
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	MEDIUM ?	TO COAR	rse sand	0.8	n						-		
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•	<u> </u>					K.J.	22 10				_		,
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	CARVEL	WITH	CARRLE	5									, ,
$\circ$	GRAVEL AND A SANDY		000077	-			-			-			
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	SANDY	SILTY	MATRIX			W	.		•				WE AT 60 m
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•	<u> </u>		•										3.10.72 5.WL 3.5
	<u> </u>	•		94									
				7 7		e CP.		GK	AD/NG	GN	' 19.		
					J.	J	<u> </u>						
$\bigcirc$	STRENGTH		Dry Dens'y	M.C.	Τ.	omp. S	*****	Cab	esion.		-		
	Depth of Sample	Bulk Dens'y kg/m3)	(kg/m3)	(%)		(kN/m	12)	(kN	esion. /m2)	Ø	T-71	5	Remarks
	050-0.95	<u> </u>	-	-	_	-				٠.	10- 2	PFAT	•
•	2.00-2.45			_	_		-			•	PFA-		
	3.50-3.95	1930	1550	25 5						<del></del>	CLAY	EY	GRAVEL
	5.00 - 5.4.5	<b>ႏ</b> န်စ	1950	13 5							,,		<u> </u>
	6.50	-	-	•				_		-	No	RES	COVERY
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	COMPACTION	N AND OT	HER TEST O	RESILI	- <u> </u>	<del></del>					<u> </u>		
	Depth of Sample	Compaction	Dry Dens'y	M.C.		s.G.	Air	C.B.R	SO ₃	рН	····	He	emarks or other tests
*	·		(kg/m3)	[!] (%)	+		Voios		gni/itti	<del></del>	1000	-	
	6.00				+		·		NIL	6.5	WA	TE	C 3-11-17-1. 2
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	GENERAL	EMARKS		<i>!</i>	<u> </u>	<u>, l</u>	ı	<u> </u>			<u> . ;                                   </u>		
	GENERAL	TEWANKS		1							;		27

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Metric	LANCASHIRE COUNTY COUNCIL  BOREHOLE DATA SHEET No. 2. OF 2  SCHEME ASS. THE STAN MESSIAL TO SCIENCE TOWN LOCATION 4364 NOFFSET 17NW								JOB No. 367  B.H. No. <i>P/3</i> DEPTH /3-4 m  GROUND LEVEL 238.5 m	
•		ription of Stratu	· · · · · · · · · · · · · · · · · · ·		Sample 123 Key	м.с.	LL/PL/PI Core Rec'	Class'r	T	Water & Casing Details
10	WELL	GRADE			1123 Key		GEODINI		42	
\$1	STIFF WEATHE	•	1UDSTONE	1	14 14 14 14	11.9				
i3	SILTY	MUDST	ONE	13.4	C 72				50/10mm	3/10/72 CASING 128 M
		; ;	•							
	-									
	<u>-</u>	•				-				
			: :							
$\bigcirc$	STRENGTH		Dry Dens'y (kg/m3)	M.C.	Comp. S	tress	Cohesion (kN/m²)			0
•	Depth of Sample 12.00 -12.45	Bulk Dens'y kg/m3)		M.C. (%)	Comp. Stress (kN/m²)		(kN/m²),	0	200 нм х /	Remarks
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	0011010								<del></del>	
•	COMPACTION Depth of Sample	ON AND OT  Compaction	Dry Dens'y (kg/m3)	M.C. (%)	8.0	Air Voicis	C.B.R. SO ₃	рН	Re	marks or other tests
٠.		,	(Ky/113)	(% <u>)</u>		v uius	gnunti	в		
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, •	GENERAL F	REMARKS	,		<u></u>			<del></del>		,

# PARTICLE SIZE DISTRIBUTION

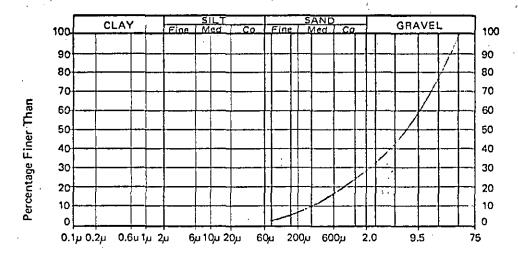


B.H. No. P13

Depth 9-5 m

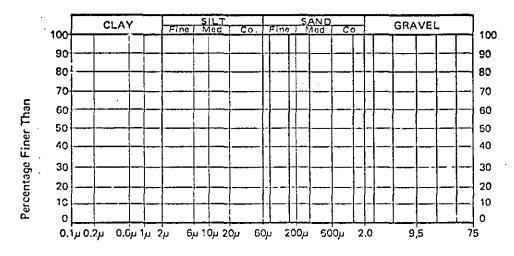
Description G V

Particle Size in mm.



Description. G. W.....

Particle Size in mm.



B.H. No.

Description.....

Particle Size in mm.

75.0 mm

	LANCAS		o. 367. o. <i>P14</i>								
SCHEME A.S.	6D(V.E.K.)		1A.S.L.	.l.t.\.	G.D.	EN 77	ÖΔ.	CCRIMO	?. <u>7.</u> 0^	DEPTH	1 <i>§. 3</i> ND LEVEL <i>259 . 5</i>
	ription of Stratu	•			Sample 23 Ke		c.	LL/PL/PI			Water & Casing De
PARTIALL	V BUG	20/7			l u.	10.		00.0	•		STALLETS 3 10 45
WELL 6	,		2/			, 3	3. □				,
WASTE.		CORETE	7		u	7.4.	<u>,</u>				
FILL.					$\  \omega \ $	ه و ا	ے		•		
SOFT			1.8		U.	4 23.	ا م.	13/23/40	O CH		
	REY BRO	ow~			ll u	"					
-GRAVEL .	ABUNDA	ANT PIEC	<i>L</i> S		ll u	4 19	9.2				-
OF MICA	COUS .	SHALE.			B	ا ا	ا د.				
TOWARDS	1. HE E	ASE	<del></del>  3.7					16/21/2	5 67	: <u>•</u>	
11047	GHT GREY			Ĭ	U4    B	14	- 1	70,000			
- WEATHE	,	MUDSTON	J.=								WE AT 45m
	T.					10.	٥				
WITH CZA	Y FILLE	D JOINT	- 5.8		ş.7			. ·		41	
	_			H	B.	<del></del>	-		1		
LIGHT	MUDSTONE				B C.R	,				Jolieyma	
MUD					8.						5/10/72
					B	.					CASING 6.0 m
-DARK	GREY.		ع ح	3 📗	CP					- / 45	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
Į.	DSTON	£	·			- [				50/85 m-	4/10/7.2 G.OM
	<del></del>		\ 8.≤	' :							CASING 6.07
•	•										
STRENGTH	TEST RESU	JLTS	·						·		
Depth of Sample	Bulk Dens'y kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)		Comp. (kN/i	Stress m2)	Cc (k	hesion N/m2)	Ø		Remarks
0.00-0.45	-	-	10.8	,			<u> </u>	<u> </u>	<u> </u>	BURNT C	OLLIERY SHALE
0.50 -0.95			/3.3			<del></del>	<u> </u>	<del>-</del>	_	,,	WITH BOTTO
1.00-1.45	<b>-</b> ,		8.2		· <u> </u>		· <u>-</u>	-	-	80 - U	IRURNT SHALF
1.50-1.95.	2040	1660	23.0		_24	<u>/</u>	<u> </u>	12	-	170mm =	100 mm 21A.
2.00			25 8	<u>s</u>		·	-			Cray & &	FAVEL FILL
2.25		-		_		<u> </u>	├		<u>'-</u>	•	<u>,                                     </u>
2.75 -3.20	2346	1550	19.2		<u> </u>		3	1_1	-	200 4141 4	100 A.M. DIA
3.75-4.20	2440	3185	11 . (	=	<u> 5 a</u>	L.	3	٠	-	300 MM >	100mm BIN
COMPACTIO	COMPACTION AND OTHER TEST			 _TS			<u></u>		1	<u></u>	<del></del>
Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)		s.G.	Air Voids	С.В.	R. SO3	рН	Pi	emarks or other tests
4.5	· · · · · · · · · · · · · · · · · · ·							TRACE	1	WATER	2 SAMPLE
		l	!		:						<u></u>
	·**		<del> </del>			<u> </u>	┷-		<del>-</del>		

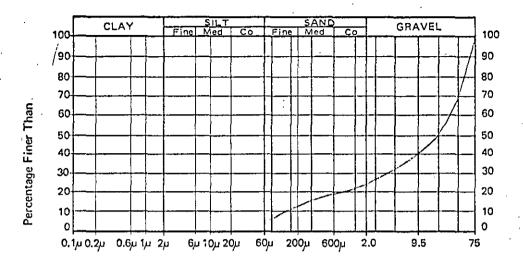
C	LANCASHIRE COUNTY COUNCIL										JOB No	367	
		BOREHOL	E DATA SHEE	T No	l	of1.					B.H. No	), <i>P15</i>	· • • • • • • • • • • • • • • • • • • •
i	SCHEMEA.	56 DIYER	2510N1 111	154.466	S/P	<u> </u>	166.	PIN	<u>670 //</u>	*****	DEPTH	12:	.5 m }
	LOCATION	9638m	OCESET.	4.6 m	Æ						GROU	ND LEVEL 1.7.4.	.2m
	Desc	cription of Stratu	ım	Depth		ample 3 Key	M.C		L/PL/PI ore Rec'y	Class	n N Value	Water & Casing	
	TOP SOFT MOT	501-	EV / BROWN	r 0.25	4	(14-						TIMENLE & 15 9	· - 1
	SILTY CLA	y WITH	GRAVEL, AND COAL			.	ļ			CI			- 1
-		WELL (		- 0.9	<u>1</u>	以在	نتد	<u>-</u>			-	we AT 1.3	
	LOOSE SAND A		PAVEL			ll./t B	16.7	. 32	2/13/9	c1.		WE AT 1.3	1
	WITH A					U4-	13.1	1 -	SADING	GC			,
	GREY - B	,			H					_		·	. )
	MATRIX.					SP.B	17:4 16 3.	.			6	,	
	-VERY SO	ET TO	FIRM	- 2 8	Ħ	8	19 4	i	1,9/53	CI		30 AT 3.00	<u>m</u>
	GREY - BR	OWN SIL	TY CLAY	1		• (	1	,	/25/3G	CH		5 10 . 7 3 14/21 CASINO B. COM 6 10 . 72 5.W 4	⊅4У 1•25 m i
	WITH GA	PAVEL. S	INDIER		Ħ	KJ. W	10.4	69	1/25/44	CH		3.0	
	111 121127	S, AND	WITH	ļ		В				<del></del>	<del> </del>		· .
	INCLUSIO,	ARVED SILTY CLAY YCLUSIONS, (BOULDER CLAY) IRM TO STIFF DARK					14.8	·			12		
							16.2	,					
	GREY-B			Ħ	KJ KJ	17.4					•	-	
						15.8							
l	SOME	NITH GRAVEL. IE SMALL LENSES				·							
		COARSE RED SAND				lu4.	14.	2 4	2/17/2	s CI		1	
		75 M. INC	'		K2 K2	15			٠.				
	OF VAEVE			,	n		16.9	<del>- </del>		_			-
	CBOULDE	C CLAY	BASE .	7.5		U4	29.	2				6.10 72	,
	DENSE" W	iell Gra	DED	7 / 3		C P. B			ADING	G. W.	35	CASING 7.0 m	•
	SANOY	GRAVEL	·	8.0	Ï	B SP B.	20.7			<del>  -</del>	50/330 =	7.10.72 R/HOE	×
	WEATH	ERED		4.		Sr 6.					′		
		BONACA	E A C C		Н	l B B	25 4 17 9					71072 841	
I	•		- ,	1								8 10.72 BN	
		SHALE		!		U4				1			•
	STRENGTH	TEST RESU	II TS	<u>l</u>	1/4		<u> </u>					<u>-</u>	
	Depth of Sample	Bulk Dens'y kg/m3)	Dry Dens'y	M.C. (%)	C	omp. Str	ess	Coh	esion /m2)*	ø	-	Remarks	
	<del></del>	Kg/mai	(kg/m3)	1%)	+	(kN/m²	-	(KIN	/m²/			F TOPSOIL	
	0.00-0.45				-							/ CORBLES + 4	ANYĒL
	0.75				-				-	-			<del></del>
	1.00	<del></del>		<u>ه ه د</u>	+					-	700 5051	· A SANDY	
	1.75-2.05	-		13 · ·					-	-	***************************************	WFT, GRANING	<del></del>
	2.75	1999	1712	16.6	_	156		78			75mm + 35	mm DIA PEMO	عرباد
	3.00-3.30	2360	21/5	11 6	4	<i>u</i> 2		۵,			SECMA Y IC	ma DIA	
	4.50-4.95	2410	<del>-</del>			260		/3 .			152 mm x 10	020 200	
	600-640	3455	3/00	14.5		,,,,		₹,,			2000 m x	DOMM DIA	
	4.00-2.115	-4.45 (4) 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		39.3		_		.34		11.0	***	DIA TRIAKIA	
	COMPACTIO	ON AND OT	HER TEST R		TS								
	Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)			Air oids	C.B.R	SO3 gm/litre	рΗ	Re	marks or other tests	
	కోవ్ర								37741CY	₩3.	WATER	2 SAMPLE	
									1				
	GENERAL F	REMARKS	<u> </u>	<del></del>	<u>- بادون</u>	<del></del>	<u>l</u>		<u></u>				, The state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the
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Metric		LANCAS	HIRE COUN	1TY CO	OUNC	CIL				•	JOB No	367
•			E DATA SHEE					o			B.H. No	0
.(	SCHEME MA						ሳር.G.ƙ	S.MAT.C	3.M	••••		1 /2.5 m ND LEVEL / 74 : 0 m
		ription of Strati		Depth	il Sar	mple Key	M.C.	LL/PL Core R	L/PI łec'y	Class'n	Y	Water & Casing Details
,	WEATHER	(ED				5.P 8	70		·		50/152-	
		ONA CEO	US.			8					<del> </del>	
	<u> </u>	SHALE				50			`			
i	12				<u> </u>	5P. 8	11 2 12 7 0 1		<del></del>	<u>                                     </u>	50/11300	}
		<u>.                                    </u>		12.5		S P.	9 1				50/8040	9/10/72 CASING 10:5m.
ı	<b>13</b> -									<del>                                     </del>	-	
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	<b>.</b>	,										
,.	STRENGTH	TEST פבפי	JI TS					<u> </u>		<u> </u>		
$\bigcirc$	Depth of Sample	Bulk Dens'y kg/m3)	Dry Dens'y (kg/m³)	M.C. (%)	Cor	mp. Str kN/m²	ess	Cohesion (kN/m²)	١, ١	Ø		Remarks
	9.50- 9.90			.,,,,,				, 9, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1,	_	w		ELF TO TEST
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				·	-	<del></del>			_			
·					-		_			<del>-</del>		,
				<del></del>	+-	<del></del>	-	<del></del>				
	COMPACTION Depth of Sample	· · · · · · · · · · · · · · · · · · ·		M.C.	TS s.c	-	Air I	, p   S	O ₃			imarke or other
	Depth of Sample	Compaction	Dry Dens'y (kg/m3)	(%)		<u> </u>	Air oids C	C.B.R. gm/	O3 /litre	рН	. Re	emarks or other tests
•												
*	GENERAL F	REMARKS										
	GENERAL	JEINIAUV2										74)

#### LANCASHIRE COUNTY COUNCIL

# JOB No. 367

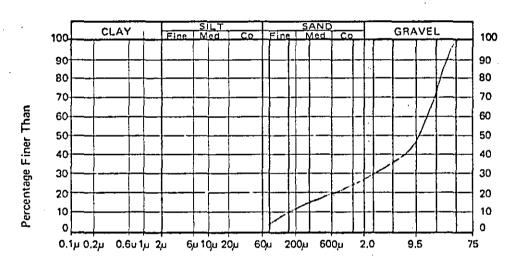
#### PARTICLE SIZE DISTRIBUTION



B.H. No. .. *P.15*..... Depth 1.82

Description ..G. S......

Particle Size in mm.

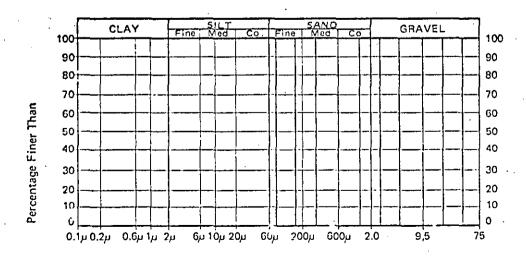


B.H. No. __*P.15*_____ Depth 7:5 m Description G.W.

B.H. No. .....

Description.....

Particle Size in mm.



Particle Size in mm.

SIEVE AFERTURES USED

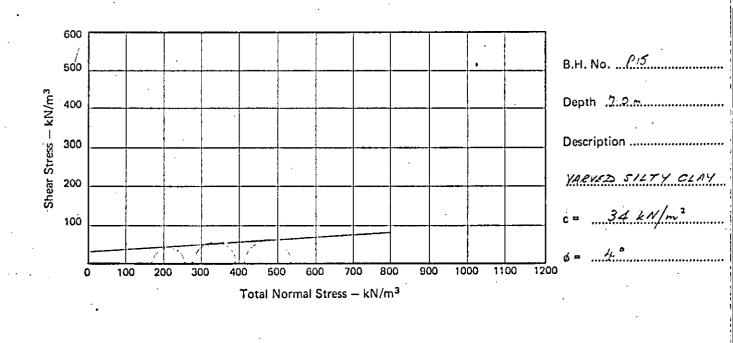
75.0 mm

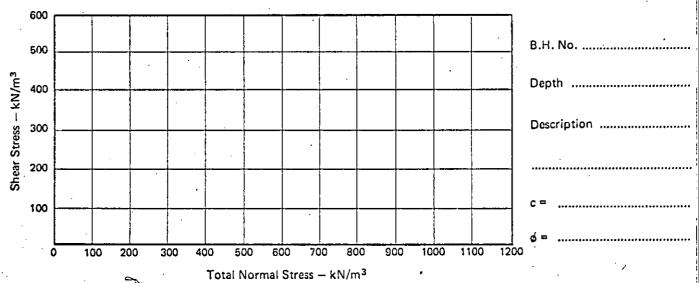
600 µm

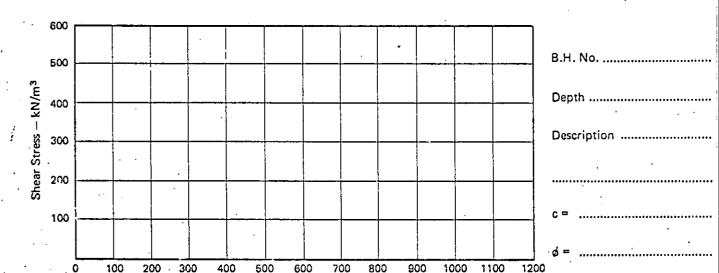
4.75 mm

300 jim

## TRIAXIAL COMPRESSION TESTS (MOHR'S CIRCLES)







Metric		LANCAS	HIRE COUN	ITY CC	UN	ICIL					JOB No	<u>.</u>	2
			E DATA SHEE									o	
Ė	SCHEME A		5/0//					sA.	SS&./A	(GTON	DEPTH		2:0.m
Ĺ	LOCATION O										GROU	ND LEVEL	2.2.m
	Desc	cription of Stratt	ım	Depth	S:	ample 3 Kcv	M.C.		L/PL/PI ore Rec'y	Class'r	N Value	Water & Casing	·
	SOFT TO			- 108		04	4014					STARTED 10	3.15.72
	YELLOW/B					K J	39.3						
	BROWN SI	LTY CLA SATION.	YW ITH SOME		e e	U4	18.7		5/16/19	ے۔	<del>.  </del>		
	SOFTER			s		K1	]	1 3.	1/13/9	د د		,	
				-18		NA.	23.4, 15.3	'	, -,			10.10.72 8	
	[					1						NO CASINO	4. 1.8 m
	,					K.S	17.6	و د	1.11.2	CL.			
	- SOFT	TO FIRM	GREY-	<u>.</u> [					· / .	<del></del>			
•	Brown	_			21		  -:				·		•
	BROWN	SILTY	CLAY			U4 +3.	11-1					ļ <u></u>	
	WITH	GRAVEL			$\left  - \right  \left  \right $	Kī	172	;					
	†												
$O^{-}$	- (BOULD	ER CLA	y) .			1)4	16.6			1	-		<del></del>
	<u> </u>	•				KJ.	16.						
	<u>.</u>  -					KI	/9:	3				·	
	ţ	•					1					ŧ Į	
-4.		٠.		İ		U4	14.9	- 1					•
	<u> </u>	•			<b>2</b>	KJ .	18.0		****				
			•										
	_			7.8		U4	7.4			7			
	WEATHE	-0=N G		ļ		KŢ	9.6	<b>`</b>				11.10.72 R.H.	"aey
	ŀ		~ACK			SP. 8	9.6	•			50/250mm	11.10.72 B.H. CASING 8 12.10.72 B.H.	Poey
	CARBON	ACEOUS											
	MUDSTO	ONE			1	8	9.4	<b>-</b> .					
$\cap$	STRENGTH	TEST RESU	JLTS	<del></del> =	1.3/		<del></del>					·	<del></del>
$\cup$	Depth of Sample	Bulk Dens'y kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	Co	omp. St (kN/m²	ress	Coh (kN/	esion, /m2)	Ø	<del></del>	Remarks	
	0.00-0.40		_	404					_		FOP SONN	TOPSOIL	
•	0.75-1.15	1	1455	30.9		16		5			200mm x	100 mm DIA	
,	1.50 - 1.80		-	28 4				_		_	TEO SHORT	70 7531	
·	3.50 - 3.90	İ	<u> </u>	11 - 1			·		_		TOO SOFT	4 Sponery To To	:
	5.00 - 5.45		1858	16 8		124		6:	2	,	12 max 38 m	4 DIA REMOUL	<u>১</u> .১
•	650-6.95	2225	1435	14 9		34		17				EAZ AUDST	
	7.75-28-15	-		7.1	<u> </u>				-			1815 NUDST 1818 TO TE	
• •	:												
							<u> </u>						=7.1-
٠.	COMPACTIO	TO DNA NO	<del></del>		S						,		
	Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	s	.G. \	Air oids	.в.ก.	SO3 gm/litro	ρН	Re	marks or other test	s
	<u> </u>	<u> </u>		,									
•					_			<u> </u>				<u> </u>	
	GENERAL	REMARKS	,										 びジ

SCHEME .A.S.	G TOWERS		S.K.I.M.C	9. <i>7</i> 2/	ΞM		<u> </u>	Civie	To~	DEPTH	o <i>P16</i>
LOCATION C			Depth			M.C	L	L/PL/PI	Class'n		VD LEVEL !!!:
<del></del>	ription of Strate	<del></del>	Depth	112	ample 31 Key 1 S 7 6	.l	, Çc	re Rec'y	Ciass u	50/175m	
WEATHER	CFD 6	BLACK									,
CARBONA	1CEOUS										
MUDST	ONE										
	•			31	S.P	76		*		50/75mm	12.10.72 CASING 8 B.H. DZY" 0
  -	· · · · · · · · · · · · · · · · · · ·		12.0							}	B.H. DRY" 0
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STRENGTH	TEST DESI	II TO								<u></u>	
Depth of Sample	Bulk Dens'y kg/m3)	Dry Dens'y (kg/m3)	M.C.	C	omp. St (kN/m	ress	Coh	esion, m2)	<i>o</i>		Remarks
	<u>kg/m31</u>	(kg/m²)	(%)	+-	(KN/m	2)	(KN/	mz)		···········	
	<del> </del>			+							
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1 COMPACTIO		HER TEST	RESUL M.C.		S.G. ,	Air	C.B.R.	SO3 gm/litrd			amarke prosber as
1	Commission	I DIA DGIPA					U.D.M.	أمحما الحجما	pН	, n	emarks or other tests
Depth of Sample	Compaction	Dry Dens'y (kg/m3)	(%)	- -	3.0.	Voids		9/11/11/18			

Metric	:		LANCAS BOREHOL	,		o. 567-							
		1	56 ° DIVEK	<u> </u>					AC	C.R.M.B	TON'	DEPTH	1 // 6 · 0
•	•	LOCATION			<del></del>	55	mole	<del>Т</del>		_/PL/PI		T	
	0		ription of Strate	ım	Depth	12	mple Key			re Rec'y	Class'n	N Value	STAPIETS ALIMINA
		TOP501			0.3		U4-						B/H UNCASED.
		FIRM MI	SAMON	YELLOW	<u> </u>		KJ.						1
		_BROWN S (SUBSOIL	~)	CLAY.	- 1.5								
•	٠	HARD BRE	OKEN G	CEY -	- / / - \$					,			
•		GREEN T	THINLY	CROSS			,						
		BEDDED	HIME G	KAINED					1.5	- 4-2			
,	3	(040)		F Rock)					- / <u>-</u>	P/0 Ki	4'7	,	,
		JO1NTING AT 7/M	TOINIT	y VARTICAL	- 3								
	7	BEDDING	NAMOS7	- HOKIZENI	7 14.								
$\bigcirc$	اے	MARKED	AND 6	SEDDING									
<u> </u>	•	PLANES	WENK	77//=									
	6	-7 5M	· MAD						11:2	- 7.	2 772		
	ا ط	A VERTIC	AL 5M	M WIDE					50	1/0 KI	· 'Y		
•		CLAY FI										ļ .	
	7	BETWEE	N 7.51	and 7.8M.								-	
•		SILTY BA	ands be	TWEEN	•								·
		9.3 AND											
	2	-				WEX.							
				•		1							
	9	• 				1		<b> </b>		- 10		<del> </del>	
		•							10	0°/01	(4,5,4)		,
•											ļ		
$\bigcirc$	/3	STRENGTH	TEST RESU	II TS			<del>!</del>						
$\cup$		Depth of Sample	Bulk Dens'y (kg/m ³ )	Dry Dens'y	M.C.	Co	mp. S	tress	Cohe (kN/r	sion	ø		Remarks
			(kg/m3)	(kg/m3)	279		kN/m	2)	(KN/I	m21	-		T dan a constant
		200-0.40			<del>2 7 7</del>				······			10100	
		<u> </u>	,			-							
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'.		COMPACTIC	TO DNA NC	HER TEST R	ESUL	гs			<del></del>	<del></del>			
. '		Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)		G.	Air Voids	C.B.R.	SO3	рН	A.	emarks or other tests
	; ;		<del></del>	Gigitio)	1707	1		- UIU3		31.7.11110		ı	
	•	,	<del></del>						<del></del>				
				·		-	.		-				
		GENERAL F	REMARKS	ESTARY.	AIK	<del>سسا۔</del> نذسمہ		4.		<u> </u>			C87A 16272 TayPig

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BOREHOLE DATA SHEET No OF				HIRE COUN								5. 367
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TO MEDIUM SRAINED. SANDSTONE  THE MEDIUM SRAINED. SANDSTONE  HARD BROKEN CREY-GREEN  FINE GRINNED SANDSTONE  TO SOME CAIDATION ON THE HORIZONTIA GEDDING PLANES.  TO SEE SHEET 3  MUDSTONE DIECES IN A  THE SIDUAL CLAY MITRIX  CITYLEIN  THE STRENGTH TEST RESULTS  Depth of Sample Bulk Darky Dry Densy (%)  COMPACTION AND OTHER TEST RESULTS  COMPACTION AND OTHER TEST RESULTS  DOUBLE SEED SON OF THE SEED SON OF THE SEED SON OF THE SEED SON OF THE SEED SON OF THE SEED SON OF THE SEED SON OF THE SEED SON OF THE SEED SON OF THE SEED SON OF THE SEED SON OF THE SEED SON OF THE SEED SON OF THE SEED SON OF THE SEED SON OF THE SEED SON OF THE SEED SON OF THE SEED SON OF THE SEED SON OF THE SEED SON OF THE SEED SON OF THE SEED SON OF THE SEED SON OF THE SEED SON OF THE SEED SON OF THE SEED SON OF THE SEED SON OF THE SEED SON OF THE SEED SON OF THE SEED SEED SON OF THE SEED SON OF THE SEED SON OF THE SEED SEED SON OF THE SEED SON OF THE SEED SEED SON OF THE SEED SON OF THE SEED SEED SON OF THE SEED SEED SON OF THE SEED SEED SON OF THE SEED SEED SON OF THE SEED SEED SON OF THE SEED SEED SON OF THE SEED SEED SON OF THE SEED SEED SON OF THE SEED SEED SON OF THE SEED SEED SON OF THE SEED SEED SON OF THE SEED SEED SON OF THE SEED SEED SON OF THE SEED SEED SON OF THE SEED SEED SON OF THE SEED SEED SON OF THE SEED SEED SON OF THE SEED SEED SON OF THE SEED SEED SON OF THE SEED SEED SON OF THE SEED SEED SON OF THE SEED SEED SON OF THE SEED SEED SON OF THE SEED SEED SON OF THE SEED SEED SON OF THE SEED SEED SON OF THE SEED SEED SON OF THE SEED SEED SON OF THE SEED SEED SON OF THE SEED SEED SON OF THE SEED SEED SON OF THE SEED SEED SON OF THE SEED SEED SON OF THE SEED SEED SON OF THE SEED SEED SON OF THE SEED SEED SON OF THE SEED SEED SON OF THE SEED SEED SON OF THE SEED SEED SON OF THE SEED SEED SON OF THE SEED SEED SON OF THE SEED SEED SON OF THE SEED SEED SON OF THE SEED SEED SEED SON OF THE SEED SEED SEED SON OF THE SEED SEED SEED SON OF THE SEED SEED SEED SEED SEED SON OF THE SEED SEED SEED SEED SEED SEED SEED SE	,	VERY SOFT	RED - BR	OWN FINE	. 15.6							
TO MEDIUM SAMES SANDSTANE  HARD BROKEN GRY-GEFFN  FINE GRINED SANDSTONE  FINE GRINED SANDSTONE  FINE GRINED SANDSTONE  FOR CXIDATION ON THE HORIZONTIL GEDDING PLANES  17 7  BY  SEE SHEET 3  MUDSTONE DIECES IN A  IF Y AND RECOM  STRENGTH TEST RESULTS  Depth of Sample Bulk Densy (kg/m3) (%) (%) (kN/m2) (kN/m2)   COMPACTION AND OTHER TEST RESULTS  Depth of Sample Companies Dry Densy M.C. (S.G. Air C. B.B. SO3 BH Beauth of Other sents	16	VERV HINKE	RED - BA	ZOWN FINE			-		<del></del> -	<u> </u>	-	
FINE GRINED SANDSTONE  TO SOME CXIDATION ON THE HORIZONTIL GEDDING PLANES  177  18-  SEE SHEET 3.  MUDSTONE DIECES IN A)  RESIDUAL CLAY MATRIX  CITWELM  17.7 AND R2.0 m  STRENGTH TEST RESULTS  Depth of Sample Bulk Dens'Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m3] Y [kg/m	. =	TO MEDIUM	1 GRAINES	D_SANDSTEA	1/63		{					
SOME CXIDATION ON THE HORIZONTIV. CEDDING PANNES.  177  18  SEE SHEET 3  MUDSTONE DIECES IN A) PEGIDUAL CANY MATRIX CITWELL  17-7 AND 22-2 m  20  STRENGTH TEST RESULTS  Depth of Sample (kg/m3)   M.C. (comp. Stress (cahesion (kN/m2))   0					1							
HORIZONTIL CEDDING PLINES  18  SEE SHEET 3.  AUDSTONE DIECES IN A  PERIOD CARY MITRIX  CITWELM  17.7 AND 22.0 M  STRENGTH TEST RESULTS  Depth of Sample Bulk Dens'y Dry Dens'y (kg/m3) (%) (kN/m2) (kN/m2).   COMPACTION AND OTHER TEST RESULTS  Denth of Sample Comparing Dry Dens'y M.C. S.G. Aif C. 8.B. SO3 BH Bemoths of Other sents.	17		•				-	12	<u> </u>	15 6 7	<del> </del>	·
SEE SHEET 3.  MUDSTONE DIECES IN A  PECIDUAL CARY MITRIX  CITWELM  17.7 AND 22.0 M  STRENGTH TEST RESULTS  Depth of Sample Bulk Dens'y (kg/m3)  Depth of Sample (kg/m3)  COMPACTION AND OTHER TEST RESULTS  Depth of Sample Compaction Dry Dens'y M.C. S.G. Air C. 8.B. SO3 BH Benerits of Other series  Depth of Sample Compaction Dry Dens'y M.C. S.G. Air C. 8.B. SO3 BH Benerits of Other series	۱ 'ا				Ì	1 8		90	70 KB	4.7		
SEE SHEET 3  MUDSTONE DIECES IN A  AESIDUNA CANY MITRIX  CITWELM  17-7 AND 22.0 m  STRENGTH TEST RESULTS  Depth of Sample (kg/m3) Dry Dens'y M.C. (kN/m2) (kN/m2).   (kg/m3) Remarks  COMPACTION AND OTHER TEST RESULTS  Depth of Sample Compagning Dry Dens'y M.C. S.G. Air C. R.R. SO3 AH Remarks of Albertes 15.	,					3						
SEE SHEET 3  MUDSTONE DIECES IN A  AESIDUNA CANY MITRIX  CITWELM  17-7 AND 22.0 m  STRENGTH TEST RESULTS  Depth of Sample (kg/m3) Dry Dens'y M.C. (kN/m2) (kN/m2).   (kg/m3) Remarks  COMPACTION AND OTHER TEST RESULTS  Depth of Sample Compagning Dry Dens'y M.C. S.G. Air C. R.R. SO3 AH Remarks of Albertes 15.	18	<u></u>					ļ	<del>-   -</del>	············	_		
MUDSTONE DIECES IN A  MESIDUAL CANY MITRIX  CITWELM  17.7 MAND 22.0 m  STRENGTH TEST RESULTS  Depth of Sample Bulk Dens'Y (kg/m3) (%) (%) (kn/m2) (kn/m2).   © Remarks  COMPACTION AND OTHER TEST RESULTS  Depth of Sample Compaction Dry Dens'Y M.C. (S.G. Air C.a.B. SO3 and Beauty of other less to		L	eet 3	· ·								0.//
STRENGTH TEST RESULTS  Depth of Sample   Sulk Dens'y   Dry Dens'y   M.C.   Comp. Stress   Cohesion   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m		<u> </u>		CATE IN E	,							24/11/72
STRENGTH TEST RESULTS  Depth of Sample   Sulk Dens'y   Dry Dens'y   M.C.   Comp. Stress   Cohesion   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m	19	MUDSTON		4 4 1 to 27 27 2 4 1 4	<b>'</b>	181	<b>}</b>				<del> </del>	
STRENGTH TEST RESULTS  Depth of Sample   Builk Dens'y   Dry Dens'y   M.C.   Comp. Stress   Cohesion   (kN/m2)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/	İ	PRETONETIA	CANY	MAIN INTO								
STRENGTH TEST RESULTS  Depth of Sample   Bulk Dens'y   Dry Dens'y   M.C.   Comp. Stress   Cahesian   (kN/m²).   Ø   Remarks    COMPACTION AND OTHER TEST RESULTS  Depth of Sample   Compaction   Dry Dens'y   M.C.   S.G.   Air   C.R.R.   SO3   RH   Remarks of other sects.	ļ		. ANTO 2	2.0 m								
Depth of Sample Bulk Dens'y (kg/m3) Dry Dens'y (kg/m3) M.C. (%). Comp. Stress (kN/m2) Cohesion (kN/m2).   Remarks  COMPACTION AND OTHER TEST RESULTS  Depth of Sample Compaction Dry Dens'y M.C. S.G. Air C.B.B. SO3 OH Bemarks of other tests.	20					11:11					<u> </u>	
COMPACTION AND OTHER TEST RESULTS  People of Sample Compaction Dry Dens'y M.C. S.G. Air C.S.R. SO3 and Remarks of other tests.		STRENGTH	~	<del>,</del>		<del></del>				<del></del>	<del></del>	
Depth of Sample Compaction Dry Dens'y M.C. S.G. Air C. R.B. SO3 pH Remarks or other tests		Depth of Sample	Bulk Dens'y (kg/m3)		M.C. (%)	Comp.S	tress 2)	Cohe (kN/i	m2)	Ø		Remarks
Depth of Sample Compaction Dry Dens'y M.C. S.G. Air C. R.B. SO3 pH Remarks or other tests	)											
Depth of Sample Compaction Dry Dens'y M.C. S.G. Air C. R.B. SO3 pH Remarks or other tests												
Depth of Sample Compaction Dry Dens'y M.C. S.G. Air C. R.B. SO3 pH Remarks or other tests						<del> </del>					<del></del>	
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Depth of Sample Compaction Dry Dens'y M.C. S.G. Air C. R.B. SO3 pH Remarks or other tests			·			<del> </del>	·					
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		COMPACTIO	TO DNA NO	<del>,,</del>		<u> </u>			· · · · · · · · · · · · · · · · · · ·			****
	•	Depth of Sample	Compaction			s G.	Air Voida	C.B.R.		pН	R	emarks or other tests
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	<b>,</b>			1		1	i		, ,			
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Metric	LANCASHIRE COU	NTY CO	OUNCIL					o. 367
•	BOREHOLE DATA SHE	ET No	3., of5	· ·				o. P17
	SCHEME ASS DIVERSION A	MSAIM	(SDEM	Zo.	NCCRIME.	70//	DEPTH	1/6:0 m
	LOCATION 8500 m &	•					GROU	ND LEVEL 211.5
,	Description of Stratum	Depth	Sample 123 Key	M.C.	LL/PL/PI Core Rec'y	Class'n	Ņ Value	Water & Casing Details
20	110.67							
	HARD BROKEN DARK GREY HASSIVE SPHEROIDA						•	
21	1				15 G - 21 1 GO 10 CZ	<u> </u>		
	[ MUDSTONE. [ MUDSTONE)				6070 22	7		_
•	TACCRIMETON MIDESTONE)					,		
22	JOINTING MAINLY VERTICA	1		1	<del> </del>			
•	BEDDING ALMOST.							
21	HORIZONITAL				313 -211 50 0 KK	ـــدد کي		
20	SOME OXIDATION OF				50 0 KI	- }		}
	JOINTS AND BEDDING	·						<i>;</i>
24	PANNES THOS BEDDING		.	- <del></del> -		-		
	PENNES						ļ	
25								
· ·		}						
							1	
26	NUDSTONE DIECES IN			-	50% REC	<u> </u>	1	
	MUDSTONE PIECES IN A RESIDUAL CLAY MATE BETWEEN	7X						
	EETWEEN 26 0 AND 276 m.							
	JOINTS OF 80° AND 60°							27/11/72 SWE 11-1m
26								7, 7,-
	<u>;</u>							
	ļ.				276 -30	~		
29	) <del> -</del>  -				80% REC			
•				}				
30			] [ ]	1	<u> </u>		<u> </u>	
$\bigcirc$	STRENGTH TEST RESULTS		T = ====					
	Depth of Sample Bulk Dens'y Dry Dens'y (kg/m3) (kg/m3)	M.C. (%)	Comp. S (kN/m	tress (2)	Cohesion (kN/m²)	Ø		Remarks
<b>.</b>			_		· .			
2.			ļ				•	
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	;							
								•
	COMPACTION AND OTHER TEST	RESUL	ΓS	<u></u>		•		
	Depth of Sample Compaction Dry Dens'y (kg/m3)	M.C. (%)	s G	Air Voids	C.B.R. SO3	рН	90	emarks or other tests
•			1		3.5.00		<del></del>	····
						<del></del>	<del></del>	
-			+ +	-	<del>  </del>	-		· · · · · · · · · · · · · · · · · · ·
	GENERAL REMARKS	<u></u>		<u>_</u>	<u> </u>			CB7A L6272 TayPic
	7	•					•	<u> </u>

· Metric	e ^r		HIRE COUNT								0.7
		BOREHOL	E DATA SHEET	No4	/ _F OF	) *******	,,,,,,,,,	Λ.,			o. <i>P.</i> 1.7
•				. <i>k</i> .k.k.k.	ÆIMIÐ.	<i>DEGL</i>	/	} <i>[.::::::::::::::::::::::::::::::::</i>	337676		1/  6
	LOCATION		<u> </u>	J	Sample	М.		LL/PL/PI	Class'n	N Value	· · · · · · · · · · · · · · · · · · ·
. 30	Desc	ription of Stratu	m 	Depth	1 2 3 Ke	У М.С		ore Rec'y	Class n	N Value	Water & Casing Details
	HAKD	-			7.				<u> </u>		SWL 14.7m AFTER 51
31	DARK G			•		·	_		-		14.2m 10-
	SPHEROIT									1	
	CACCRING	TON M	UDSTON:	}	300		90	) 6 - 5	5.7an		
32	701275	MAINLY	VERTICA.		[취     왕		1	4040 1	179		
	SEDDING	ALMOST	110121-								
33	-20~7771							· <u>-</u>	ļ		
•	SOME										
	IND BE	OX LOFT.	PLANES.								SWL 16.2m AFTER 5 HIN
34	L 1			,		.					16.0m " 10 " 15.8m " 15 n
	JOINT OF	= ,60° A	TSSYN								,
35	MUDST	ستر ر ر ط	PIECES				2.5	₹7 <u>-3</u> 70%/2	68.71 66 V		
	IN A								'		,
	L						_				
16	BETWER		i	ļ							
i ·	30.0	* '	7004								SWL 18.4 m AFTER 511
17	[ 30.0	7410 230	110	'		.		<del></del>			172, 15
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36	_							5.5 - 11			
							;	30°/5 kis	サン		
		•	•		a						
39	-										and the second second
	<u> </u>		•			'		•			SWL 20-6 MAFTER SHI 19-44 10 -
40	TOLAT AF	7.0 117	42.22	<u> </u>	<u>Ш</u>			•			17.8m - 15-
	STRENGTH				T -		1				
	Depth of Sample	Bulk Dens'y (kg/m3)	Dry Dens'v {kg/m3}	M.C. (%)	Comp. (kN/	Stress n2)	Col	nesion I/m2)	0		Remarks
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	·	<del></del>					<del>-</del>	<del></del>	····	<del></del>	
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•	COMPACTIO		HER TEST RE		.c		<u> </u>				
,	Depth of Sample	Compaction	Dry Dens'y	M.C.	5 s.g.	Air	C.B.A	SO ₃	рН	p.	emarks or other tests
	= thurst damping		(kg/m3)	(%)	<del> </del>	Voids	J.B.n	s. gm/litre		n	CHILDING OF OURSE COACS
			<u> </u>	:	11.	· • • • • • • • • • • • • • • • • • • •	<del> </del>			<del>.</del>	
					1		-	+			
r'. L	GENERAL F	REMARKS					<del>)</del>				CB7A 16272 TayPi
<del>;</del> •			•		I 4 1					i 1	8.10

Metri	;	Ser Control		HIRE COUN									367
				E DATA SHEE									oP.1.7
		SCHEME 🔼	56 7211	¥X3270V7		どをひ	<u>MG</u>	[];[]	V. 77	<u> </u>	CEING		1 460 m
	ĺ	LOCATION	£5000	: Je							.,	GROUI	ND LEVEL AZZZZZ
		Desc	ription of Stratu	ım	Depth	Sam 1 2 3	ple Key	M.C		./PL/PI re Rec'y	Class'n	N Value	Water & Casing Details
	40	HARD BR	ORAN	LAREK SOULKOUDIN	,								·
		HODSTON		۱۱ <i>۱۵۲ تا ۱۹۳۲</i>	1				,				
	4/	-(ACCRING	TON M	DSTONE)				-	-40	0 - 43 % RE	i hom		
		JOINTING	MAINLY	VERTICA.	4					70			
•	ļ	BEDDINE	FLANAST	HOKIZON	116								,
		BONIE OX							_				
	ŀ	JOINTS .	AND BE	かいいの									
•	ſ	THE MARS			İ								SWL 14-0 m AFTER 5M
•		TONTS O											12.4m " 15
	ł	BETWEEN			· ·								
	44	MODSTON			,				115	0 - 116 8/0 x 16	077		
,		IN A R	?だら/ひいハ ^/**・	Y CHAY					190	YO KI	2.17		
	ļ	MATRIX											
$\bigcirc$	45	40.0	AND 43										
	ł	45.0	MNDHO	מור הינ									
;	ار ا	•		<i>:</i>	46.0								SWL 20.6m AFTER SIL 19:6m - 10:
	46				40.0								1
,													27/11/72
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$\bigcirc$		STRENGTH				,		<del></del>		····			
7.	Ì	Depth of Sample	Bulk Dens'y (kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	Com (ki	p. Str V/m2)	ess	Cohe (kN/r	sion n2	Ø	·····	Remarks
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		0011010000	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	1.50 ====================================		<u> </u>				<u> </u>			
•				HER TEST R	ESULT M.c.	1		Air		SO ₃	ı	,	
•		Depth of Sample	Compaction	(kg/m3)	(%)	S.G	·   v	oids	C.B.R.	gm/litre	pH	Ro	omarks or other tests
•					<u> </u>	.						· · ·	
		<del></del>				<u> </u>	_						·
	٠					1.	<u> </u>			<u> </u>			
		GENERALF	REMARKS		<u> </u>								C87A L6272 TayPt

Metric		LANCAS	HIRE COUN	TY CC	UNCIL						o. <i>516.</i> 7
•		BOREHOL	E DATA SHEET	No	./ of≨	- 				B.H. N	o. P.18
	SCHEME		SIDAL				S.P.W.	G.T.:0.0.	<i>!</i>	DEPTH	1.41.9 · 44
			OFFSE							GROU	ND LEVEL 263.3m
		ription of Stratu			Sample 1 2 3 Key		LL	/PL/PI e Rec'y	Class'n	N Value	Water & Casing Details
C	LOOSE MU	~ ~~~ ~	AL ALTS	<del>                                     </del>	1123 Key	┧		e rica y			STARTLD GIRTIN
•	SANDSTON					İ					12.5 m
	SANASTON	, , , , , , , , , , , , , , , , , , , ,	<b>-</b> ,								
1		,									
		· · · · · · · · · · · · · · · · · · ·		15							
. 2	HARD.	FINITHY B	EDDED			<u> </u>					
•	FINE GAL	รสาย การ เกาสารา	รกกระของตั								
٠	COLD LA	WRXNEL MANULY	"   K'OGK".) EEK'DOKS				1.5	- 400			
. 3	TOINT OF	77/10/29 = 45° 197	ี ถึงจีผ				30	-4:0 0/0 RI	d y		
	BREDINE	SINAM	ST NEEL-					•			
,	乏のハウバム、							_			CASING JSM
4	MARKED	OXIT	17704								7/12/72 5W41 0W
•	OF JOI	NTS A	N'D			1	'			ļ	///2///
<u> </u>	「なんのロノル	G. PLAI	VITS.								
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. b		,					4:0	-7.01 0/0 AL	M		
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·										1	S.W L I SM AFTER SM
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•	HARD B.					`					
. 6	OKITATIO						200	10 RE	-1/		
	MORIFON	アンドル どんじょ	1116/11/15	55							
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· .	<b>,</b>	,									SNE 3 SMATTER SWIT
. 10	-			<u> </u>			<u> </u>				1 2 Rg. 1 16 1.
	STRENGTH	TEST RESU	JLTS	<del> </del>				·			
<u> </u>	Depth of Sample	Bulk Dens'y (kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	Comp. S	tress 2)	Cohes (kN/n		0		Remarks
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	COMPACTION	TO DNA NC	HER TEST R	ESUL	rs	<del></del>		<del></del>		<del> </del>	
	Depth of Sample	Compaction	Dry Dens'y	M.C.	5.0	Air	C.B.R.	SO3 gm/litre	ρН	P	emarks or other tests
		== - ==================================	(kg/m3)	(%)	1	Voids		gm/litre	-		
•	-				11.	-			<del></del>	····	<del></del>
				·····						<del></del>	<u> </u>
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,	GENERAL	REMARKS	だのデコベソ	م إند - م	أيمرسختر نستيرا	دری این ماری ایس	1				C87A L6272 TayP

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Metric	.		LANCAS	HIRE COUN	ITY CC	UNCIL		•	,	JOB N	0.347
•		•'		E DATA SHEE			_			B.H. N	o. P.18
•		SCHEME A	56 DIVE	RSION F	111521	NGDEZ	VZo	ACCEIN	GION	DEPTH	1 .149 .14 m
	1	LOCATION (							•	GROU	ND LEVEL 2.4.5
	ŀ		cription of Stratu			Sample		LL/PL/PI		1	Water & Casing Details
10	٠	MINIL ON	•		-	1123 Key	<u> </u>	Core Rec'	<del>'  </del>		
	1	Carana M. C.	NELY "	17 7 20 To	}						
		FINE ERA						10.0			•
. 1	" <del> </del>	JOINTS M BEDDING	PLANES	DIPAT 10	0			30% RE	<u> د برست</u>		
	٠,	MARKED	OXIDAT	TON OF							,
	ŀ	TOINTS PLANES.	MOD C	STEDWAY G							
ľ	12 F	CROSS B.	ころわだめ	CENVELEN							
		10.0 AA				Number		-			
	ŀ		·		13.0						SWL 2900 AFTATE
,	13	HARD BRO	OKEN GR	IV - GREE							" 2 %0 " 15.
	-	THINKY C	ROSS RET	びしたて		4					,, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
		FINE OF	ベバハ バラン	SMAJUSTER	.11		<u> </u>	130 -16	-: \$ m	ļ	
•	**	(CNE 24	R MEETHCK	ROCKE)				25% KE	٠٤ ١	ļ	
		JOINTS 1									
$\sim$ 1	إر	JOINT OF	45°AT	14.5 M			ļ				
$\bigcirc$ .	- 1	BEDDING			18 1			•			
	ŀ										
- <b>-</b>	16	_BANDS .					-				
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	ł	NEEDWINE .	16.3 A	ND 19 11 m	•				İ		SWL 3. OM AMERSH
. 1	17			•				<u> </u>		<u> </u>	8/12/72 S.WL 2 SOM
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	'카	<del>-</del> · .						,			SWL 16 JOH AFTIREM
	·			ı	19 4						12 Dom " 15"
2	إم	-			<u> </u>	<u> </u>				<u> </u>	75 55M 71 74
$\bigcirc$		STRENGTH	TEST RESU	JLTS							
	Ì	Depth of Sample	Buik Dens'y (kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	Comp. S	tress	Cohesion (kN/m²)	Ø		Remarks
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	ł	•	,		**	1			<u> </u>	· .	· • · · · · · · · · · · · · · · · · · ·
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• .		COMPACTION		HER TEST F	SEC111 7	- <u> </u>	1	1	<u> </u>	· · · · · · · · · · · · · · · · · · ·	
		Depth of Sample	Compaction	Dry Dens y	M.C.	3.G.	Air	C.B.R. SO3	рН	a	emarks or other tests
•		Dopur or paintple	Compaction	(kg/m3)	(%)	3.0.	Voids	C.B.R. gm/litr	g P''	n	CHAIRD OF OTHER LOSS
				I					-		
	ļ				**	<u> </u>			<u> </u>		<u> </u>
									<u> </u>	<u> </u>	
•		GENERAL	REMARKS			į		_ <del></del>	<del></del> -		C87A L6272 TayPig
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Metr	ic		LANCAS	HIRE COUN	TY CC	UNCI	L		,			o. 3.6 <del>7</del>
•		, ,	BOREHOL	E DATA SHEE	No. آ	5 of:	5					o. P.18
		SCHEME/)	5A JULLA	<u> </u>	///SA./	NEDL	λ <i>J</i>	<u>کل. دی ت</u>	CEUN	STOW	DEPTH	1 <u>49 41</u> m
		LOCATION	SYNCHM M	Cr 91 7 5 5	\s/						GROU	ND LEVEL之总统选m
			ription of Strate			Sampl 123 Ke	е м.		L/PL/PI pre Rec'y	Class'n	N Value	Water & Casing Details
	20					11831 K	<u> </u>	-	JIC INCC Y			,
,		HARD				4						
		GREY M	ASSIVE"	SPHEROIDHI	<u>'</u>			19 4	4 - 224	27		
		- MUDS TO							OREC.			
		(MCCRINGT				1 2			•			
	22	JOINTINIE	S MAININ	Y VEXTICAL	i						,	
	-	BETWEEN	r 28.4	13 1 1 1 m	,		'		,			S.W.L. 11-60M AFTER 5M
		VINTICAL										11 810m 1.101
	23	TO ENCH	OTHER	· · · · · · · · · · · · · · · · · · ·				<u>.                                       </u>				
		DXIDATION	ON SOME	STAIRE			1	:				
- ,		MAZ BED	DING PL	MAKS.			ļ		_	_		
	24	MUDSTON	E PIECE	-2 IN					4 -2.			
		A RESIDU							. , , •	ĺ		
		ARE FOU	ND BE	ブルヂエヘ! ー								
$\bigcirc$	25	- 22.4					·			1		
			•			+++						5N x /4 /5m AFTERSM
			N B	***								11 13.10 " 15
	26								,			•
	27	<u>-</u>		•			<u> </u>	25_	11 - 28. 10% RE	11 m.		
•								·   5	070~	9		
٠			•					<b>'</b>  .				
	28	[ <del>_</del>				424	-					1 1-5
		<b>†</b> <b>†</b>		,								8/10/72 5.WL 18.00 AFTER SM
	,	·	•						7.			1, 17.60m 11 10 1, 16:40 11 15
•	29	- -						2	4 -31 09/0 NE	c y		9/4/72 541-57
		<u>.</u>								ļ		
	· 5.							1				
_	3º	STRENGTH	TEST RESU	JLTS		<del> </del>		<del>-</del>		<u> </u>		
$\bigcirc$		Depth of Sample	Bulk Dens'y (kg/m3)	Dry Dens'y	M.C. (%)	Comp.	Stress	Cohe (kN/	esion	ø		Remarks ·
			(Kg/məi	(kg/m3)	(%)	(kN/	m21	(KIN/	M41			
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•		Depth of Sample	Compaction	Dry Dens'y	M.C.	S.G.	Air	C.B.R.	SO ₃	рН	0	emarks or other tests
		2.7	p===11011	(kg/m3)	(%)	+	Voids	<u> </u>	gm/litre	Pr. 1	, 111	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
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		GENERAL F	REMARKS	•		. 1				•	-	C87A L6272 TayPig
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•	İ		BOREHOL	E DATA SHEE	T No	<i>∤_{f::.}</i> OF .	5				в.н. N	. P16
		SCHEME AS		191011 111				1100	RIII	7001.	DEPTH	1
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	Ì		cription of Strate			Samp 123 K		c. L	L/PL/PI	Class'n	N Value	Water & Casing Details
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		GREY M	KUKKN ASSIVE	SPHEROIDA	41/2							
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$\bigcirc$		STRENGTH			A4.0	T 6	Charac	0-5-	!	<del></del>		
		Depth of Sample	Bulk Dens'y (kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	(kN/	Stress m2)	(kN/	sion m²)	0		Remarks
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		Depth of Sample	Compaction	(kg, m3)	(%)	S.G.	VÇids	C.B.R.	gm/litra	pН	Re	emarks or other tests
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		GENERAL F	REMARKS					•		,		C87A 16272 TayPig

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$\bigcirc$		STRENGTH	TEST RESU	JLTS								
		Depth of Sample	Bulk Dens'y (kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	Comp (k)	o, Stress I/m2)	Cohe (kN/		Ø		Remarks *
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. · ·		Depth of Sample	Compaction	HER TEST R	M.C.	S .	Air	C.S.R.	SO ₃	Hq	r	omarks or other tarts
		Deput of Sample	Compaction	(kg/m3)	(%)	3.0.	Voids	U.U.M.	gm/litre	PIT .	, R	emarks or other tests
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,	· ·		E DATA SHEE							в.н. N	<u>. P19</u>	······
	SCHEME	G DINLES	VOVY - 13372	A.M.G.	<i>M.</i>	.o1	.S.G.6	ZX.e.X.S	37/3		1 .61.9	
	LOCATION	S748	OFFSE				<del>,</del> -	<del></del>		GROU	ND LEVEL 25/4::2	m
		cription of Strati			Sample 123 Ke	<u>)</u> м.с	c. c	L/PL/PI ore Rec'y	Class'n	N Value	Water & Casing Det	
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0	STRENGTH		<del>,,,,,,,,,,</del>					, ,			·	
_	Depth of Sample	Bulk Dens'y (kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	Comp. (kN/i	Stress n2)	Coh (kN	esion /m21	Ø	<u>.</u>	Remarks	
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•	Depth of Saniple	Compaction	(kg/m3)	(%)	S.G.	Voids	C.E.R	gm/titre	pН	· Re	emarks or other tests	
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	LOCATION	874B4	OFFSE	7- 12	10 m	E.				GROU	ND LEVEL Q.S.M.J.Qm -
10		ription of Stratu			Sample 123 Ke		. Cor	/PL/Pl o Rec'y	Class'n	N Value	Water & Casing Details
	THIRD BK	<i>ಜರ</i> ಽ೪ ರೆಸ್	DD E.D								
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20	STRENGTH	TEST RESI	ILTS	<u></u>		<del>l</del>		·:/:	<del></del>	<u> </u>	
	Depth of Sample	Bulk Dens'y (kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	Comp. (kN/r	Stress m2)	Cohes (kN/n	ion n2)	Ø		Remarks
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	COMPACTIC		WED TEST D	EQIII T	<u> </u>						
1	Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	S.G.	Air Voids	C.B.R.	SO3 gm/litre	ьH	· R	emarks or other tests
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	GENERALF	REMARKS			<u> </u>		=			,	C87A 16272 TayPig

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			BOREHOLI	E DATA SHEE	۲ No. 🍜	OF :/			0.010	TOU		. (219 1 (21 0) m
		SCHEME AC						<i>K.i.</i> ss		·Y·83/0		ND LEVEL TIMESm
		LOCATION	ription of Stratu			Sample 1 2 3  Key			L/PL/PI	Class'n	1	,
	20				Берлі	123 Key	, ,,,,,	Co	re Rec'y			
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	21	-CIDAL.	HUDSTO	NE				P.J. C	. رراز <u> </u>	/ nt ·		BW L POSM AFTER SMIN
		CACCRINGT	ON HUZS	STONE).				100	/3 KAC		İ	1) 20.0m " /5 "
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$\bigcirc$		STRENGTH		Dry Dens'y	M.C.	Comp. S	Stress	Cohe	sion			
_		Depth of Sample	Bulk Dens'y (kg/m3)	(kg/m3)	(%)	Comp. S (kN/n	n2)	Cohe (kN/	m21	0		Remarks
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		Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	s.G.	Air Voids	C.B.R.	SO ₅ gm/litre	ρΗ	26	emarks or other tests
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	•	GENERAL F	EMARKS					<u> </u>			<del></del>	C87A L6272 TayPig
			CINALING								=	15.4

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				E DATA SHEET								o. P.19
		SCHEME A	56 Thire K	15/0N 11	154.77	L.D.A.	! <del></del>	.CCv.	METO	<i>i</i> V		4 m
		LOCATION	8748 m	OFFSET	1110	Om E				<del></del>	GROU	ND LEVEL 21/1.2.m
•		Desc	cription of Stratu	, mu	Depth	Sampl			L/PL/PI ore Rec'y	Class'n	N Value	Water & Casing Details
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,		PLANES.			}					·		
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A.S. 6.0 M  SONG HELY  BY THINLY REDDED  DIUM TO COARSE  AINED MICACEOUS  NDSTONE  NATS MAINLY VERTICAL  SDING ALMOST HICKIZONIV.  CK WEATHERING DEPOSITS  SOME BEDD ING PLANES.  T.S. 10.5 M  ST 96 KEC.  TO -2.5 M  O -2.5 M  O -2.5 M  DY Dens'Y (Kg/m3)  MAC. Comp. Stress Cohesion (KN/m2)  O -3.5 M  O -2.5 M  O -2.5 M  DY Dens'Y (Kg/m3)  MAC. S.G. Air C.B.R. SO3  DY DENS'Y (Kg/m3)  MPACTION AND OTHER TEST RESULTS  OF Sample Compaction Dry Dens'Y (Kg/m3)  MPACTION AND OTHER TEST RESULTS  OF Sample Compaction Dry Dens'Y (Kg/m3)  MPACTION AND OTHER TEST RESULTS  OF Sample Compaction Dry Dens'Y (Kg/m3)  MPACTION AND OTHER TEST RESULTS  OF Sample Compaction Dry Dens'Y (Kg/m3)  MPACTION AND OTHER TEST RESULTS  OF Sample Compaction Dry Dens'Y (Kg/m3)  MPACTION AND OTHER TEST RESULTS  OF Sample Compaction Dry Dens'Y (Kg/m3)  O -2.5 M  O -2.5 M  O -3.5 M  O -3.5 M  O -4.5 M  O -4.5 M  O -4.5 M  O -4.5 M  O -4.5 M  O -4.5 M  O -4.5 M  O -4.5 M  O -4.5 M  O -4.5 M  O -4.5 M  O -4.5 M  O -4.5 M  O -4.5 M  O -4.5 M  O -4.5 M  O -4.5 M  O -4.5 M  O -4.5 M  O -4.5 M  O -4.5 M  O -4.5 M  O -4.5 M  O -4.5 M  O -4.5 M  O -4.5 M  O -4.5 M  O -4.5 M  O -4.5 M  O -4.5 M  O -4.5 M  O -4.5 M  O -4.5 M  O -4.5 M  O -4.5 M  O -4.5 M  O -4.5 M  O -4.5 M  O -4.5 M  O -4.5 M  O -4.5 M  O -4.5 M  O -4.5 M  O -4.5 M  O -4.5 M  O -4.5 M  O -4.5 M  O -4.5 M  O -4.5 M  O -4.5 M  O -4.5 M  O -4.5 M  O -4.5 M  O -4.5 M  O -4.5 M  O -4.5 M  O -4.5 M  O -4.5 M  O -4.5 M  O -4.5 M  O -4.5 M  O -4.5 M  O -4.5 M  O -4.5 M  O -4.5 M  O -4.5 M  O -4.5 M  O -4.5 M  O -4.5 M  O -4.5 M  O -4.5 M  O -4.5 M  O -4.5 M  O -4.5 M  O -4.5 M  O -4.5 M  O -4.5 M  O -4.5 M  O -4.5 M  O -4.5 M  O -4.5 M  O -4.5 M  O -4.5 M  O -4.5 M  O -4.5 M  O -4.5 M  O -4.5 M  O -4.5 M  O -4.5 M  O -4.5 M  O -4.5 M  O -4.5 M  O -4.5 M  O -4.5 M  O -4.5 M  O -4.5 M  O -4.5 M  O -4.5 M  O -4.5 M  O -4.5 M  O -4.5 M  O -4.5 M  O -4.5 M  O -4.5 M  O -4.5 M  O -4.5 M  O -4.5 M  O -4.5 M  O -4.5 M  O -4.5 M  O -4.5 M  O -4.5 M  O -4.5 M  O -4.	THE DAKE GREY  OUN SIATY CLAY  THE GRIVEL  ALSO-6.0M  SOSONERY  WHY REDDED  DIDH TO COMPSE  AIMED MICACEOUS  NDSTONE  INTS MAINLY VERTICAL  BING ALMOST MCRIZONITS  SOME BEDDING PLINES  OF SOME BEDDING PLINES  TOSSING (Kg/m3)  PLINES  TOSSING (Kg/m3)  PLINES  TOSSING (Kg/m3)  PLINES  TOSSING (Kg/m3)  PLINES  TOSSING (Kg/m3)  PLINES  TOSSING (Kg/m3)  PLINES  TOSSING (Kg/m3)  PLINES  TOSSING (Kg/m3)  PLINES  TOSSING (Kg/m3)  PLINES  TOSSING (Kg/m3)  PLINES  TOSSING (Kg/m3)  PLINES  TOSSING (Kg/m3)  PLINES  TOSSING (Kg/m3)  PLINES  TOSSING (Kg/m3)  PLINES  TOSSING (Kg/m3)  PLINES  TOSSING (Kg/m3)  PLINES  TOSSING (Kg/m3)  PLINES  TOSSING (Kg/m3)  PLINES  TOSSING (Kg/m3)  PLINES  TOSSING (Kg/m3)  PLINES  TOSSING (Kg/m3)  PLINES  TOSSING (Kg/m3)  PLINES  TOSSING (Kg/m3)  PLINES  TOSSING (Kg/m3)  PLINES  TOSSING (Kg/m3)  PLINES  TOSSING (Kg/m3)  PLINES  TOSSING (Kg/m3)  PLINES  TOSSING (Kg/m3)  PLINES  TOSSING (Kg/m3)  PLINES  TOSSING (Kg/m3)  PLINES  TOSSING (Kg/m3)  PLINES  TOSSING (Kg/m3)  PLINES  TOSSING (Kg/m3)  PLINES  TOSSING (Kg/m3)  PLINES  TOSSING (Kg/m3)  PLINES  TOSSING (Kg/m3)  PLINES  TOSSING (Kg/m3)  PLINES  TOSSING (Kg/m3)  PLINES  TOSSING (Kg/m3)  PLINES  TOSSING (Kg/m3)  PLINES  TOSSING (Kg/m3)  PLINES  TOSSING (Kg/m3)  PLINES  TOSSING (Kg/m3)  PLINES  TOSSING (Kg/m3)  PLINES  TOSSING (Kg/m3)  PLINES  TOSSING (Kg/m3)  PLINES  TOSSING (Kg/m3)  PLINES  TOSSING (Kg/m3)  PLINES  TOSSING (Kg/m3)  PLINES  TOSSING (Kg/m3)  PLINES  TOSSING (Kg/m3)  PLINES  TOSSING (Kg/m3)  PLINES  TOSSING (Kg/m3)  PLINES  TOSSING (Kg/m3)  PLINES  TOSSING (Kg/m3)  PLINES  TOSSING (Kg/m3)  PLINES  TOSSING (Kg/m3)  PLINES  TOSSING (Kg/m3)  PLINES  TOSSING (Kg/m3)  PLINES  TOSSING (Kg/m3)  PLINES  TOSSING (Kg/m3)  PLINES  TOSSING (Kg/m3)  PLINES  TOSSING (Kg/m3)  PLINES  TOSSING (Kg/m3)  PLINES  TOSSING (Kg/m3)  PLINES  TOSSING (Kg/m3)  PLINES  TOSSING (Kg/m3)  PLINES  TOSSING (Kg/m3)  PLINES  TOSSING (Kg/m3)  PLINES  TOSSING (Kg/m3)  PLINES  TOSSING (Kg/m3)  PLINES  TOSSING (Kg/m3)  PLINES  TOSSING (Kg/m3)  PLINES  TOSSING (Kg/	THE DAKE GREY  THE GRIVEL  ARD BROKEN MEDION  EY THINLY REDDED  DIUM TO COMPSE.  AINED HICACEOUS  VDSTONE  WAS SOME BEDD ING PANNES  SOME BEDD ING PANNES  RENGTHEETING DEPOSITS  SOME BEDD ING PANNES  RENGTHEST RESULTS  OF Sample Bulk Dery Dry Darry (KN/m2)  RENGTH TEST RESULTS  OF Sample Bulk Dery Dry Darry (KN/m2)  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL  TOPSOLL

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	AT 25			1	$\mathbb{H}$		.				İ		
	WEATHERE	D CARB	ONACLOUS	3.5		S P. 6	3 /3	•/	,			32.	
	SHALE W	177-1 A	ERY SOFT	7		18				····			
	DARK BRI SHALE STIFF B	8001DE	(1)	14.4									
	STIFF &	BROWN S	ILTY CLAY				İ						·
$\bigcirc$	WITH GR		· · · · · · · · · · · · · · · · · · ·	50		5.7.	6 /	3.0				19	
<b>O</b> .	SOFT I	PARK GR	EY - BROWA	4		u 4	'						
			ITH SOME		4	~ 7	į						2. 6. 70. 4
•	-SAND &	ENSES.				B	-	•		· <u></u>		<u> </u>	30.9 70 8/2 DEV
	-			}	-	-							2.10.72 6/H DAY
				-6.8	13								
	VERY V	VEATHE	ア F D			44					1		
	<b>7</b> .												
	MEDIUM												
	-SANDST	ONE.				CP						50/64mm	2.10.72
				8.5		CP	-					50%	CASING 7.0m
												3/	B/N TRY OWC.
	ŀ												
	F		· ·			1							
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$\bigcirc$	STRENGTH	<del>,</del>	<del></del>					1					
$\mathbf{O}$	Depth of Sample	Bulk Dens'y kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	(	omp. S (kN/m	tress (2)		Cohesio (kN/m2	),	Ø	·	Remarks
	0.00-0.35					_					·	OP 229 m Empiribel	M TOPSOIL SOFT SANTY CHAN
	0.75-1.15	2315	1905	18 6		119			59				
	1.45-2.20			11 5		<del></del>			-		_		0.000 m = 1.000 m = 1.000 m = 1.000 m
	5.25-5.70	-		· · · · ·	_			+			17	DO MUCH	GRANDLAR HATLEIPL TO TES
						•		+			- ^	O RECOV	(ET)
	6.75	<b>b</b>				<del></del>		-			<u>-</u>  ,	VEATHERE SANDS FO	N HET GRAINFY
								<u> </u>					
								Γ					,
	COMPACTIO	TO DNA NC	HER TEST R	ESH	TS	•	· · · · · · · · · · · · · · · · · · ·						
•	Depth of Sample	Compaction	Dry Dens'y	M.C.		s G.	Air	10		SO ₃	рН		emarks or other tests
	Depart of Bumple		(kg/m,3)	(%)			Voida	\ <u>\</u>	an an	n/litre	F	*11	The state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the s
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	GENERAL	REMARKS											2001

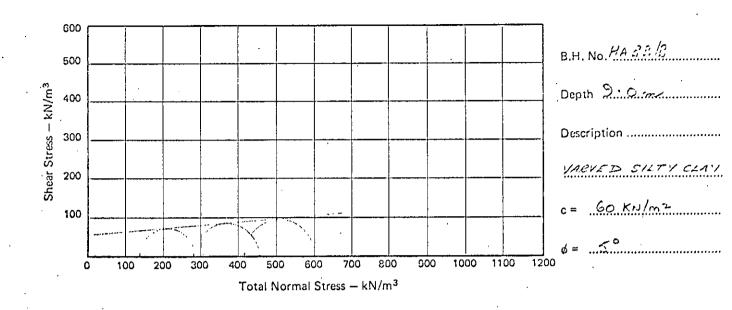
"LANCASHIRE COUNTY COUNCIL B.H. No. 411.22/2 BOREHOLE DATA SHEET No. ...... OF ...... SCHEME ASS THVERSION HUSLINGDEN TO MCCRIMSTON ET GROUND LEVEL 232.9.m 15m E LOCATION 4849 & OFFSET. LL/PL/PI Sample N Value Water & Casing Details Description of Stratum Depth M.C. Class'n Core Rec'y STORTED 2/792. TOPSOIL 0.3 FIRM TO STIFF GREY-GROWN SILTY CLAY WITH GRAVEL AND SOME COGGLES 以4 10 30/75m m в. FIRM TO STIFF GREY-BROWN SILTY CLAY WITH 37. 57 9.7 GRAVEL AND COBBLES. в THE GRAVEL IS. STRATIFIED IN PLACES SP 24 SOFTER PONES AT B 1.50m, 6:0m TAND 19.5mm 98 5P43 В ; 14.0 12.9 27 9 72 SH DRY CASING 7-07 28-9 72 CH DRY 92 В. 14 6 23/11/12 C L 11.1 **以**4 kЈ CL. د واز 32/12/20 8.8 FIRM. DARK-SOFT 770 14 32.5 BROWN VARVED. GREV κт 55/23/32 32 9 SILTY W.E.AT 9.8m CLAV 99 STRENGTH TEST RESULTS Bulk Dens'y kg/m3) Dry Dens'y (kg/m3) Comp. Stress (kN/m²) Cohesion (kN/m²) Depth of Sample Remarks HOTTLED SI-TY, CARY - ARUNDANT 0.56=0.50 8-00-8-45 2/75 1900 14.1 386 193 76 mm x 38 mm dia. REMOULDS 9.00:-9.30 1910 14.1 92 16 76mm x 38mm dia REMOULDS 2210 1385 32 5 60 9.00-9.30 1850 76mm x 38mm DIA REMOULD TRIAYIA COMPACTION AND OTHER TEST RESULTS Dry Dens'y Air Voids SO3 m/litre M.C. Depth of Sample S.G. C.B.R. Compaction Remarks or other tests (kg/rr-3) (%) 9.75 MACE 70-75 NATEU SAMPLE GENERAL REMARKS

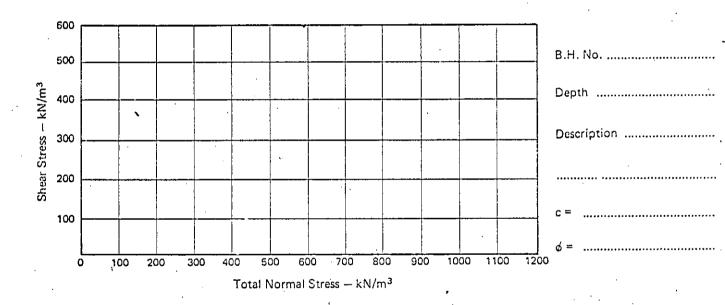
LANCASHIRE COU						JOB No	367
BOREHOLE DATA SHE						B.H. No	o. 111 -22/2
SCHEME A.S.C. ZYWZZŚZOAZ		MEDEN.	133/	O.C.E.M.R.T.C.	<u>^</u>	DEPTH	1
LOCATION AZUS OFFSET		Sample	T	LL/PL/PI	<del></del>	1	Water & Casing Details
Description of Stratum	Depth	Sample 123 Key	M.C.	Core Rec'y	Class'n	1	water & Casing Details
MEDIUM DENSITY.		CP				28	
WELL GRADED GRAVEL							
/	ĺ				<del> </del>		
FINE GRAINED SILTY	- 115	B C P.		GEADING	GP	N = 50 for 60mm	28.9.72 B.H. "LRY CASING 11.5 m 29.9.72 S.W.L. 60
SANDSTONE.	12-0	B.CP				N = 50 for 10mm	29.9.72 BM 122
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STRENGTH TEST RESULTS			<u> </u>		<u> </u>		
Depth of Sample Bulk Dens'y Dry Dens'y (kg/m3)	M.C.	Comp. Sti	ress	Cohesion			CI
kg/m3) (kg/m3)	(%)	(kN/m²	)	Cohesion (kN/m²)	Ø		Remarks
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COMPACTION AND OTHER TEST	RECIH T	<u>i</u> -c			<u> </u>		
Depth of Sample Comparing Dry Dens'y	M.C.	6.0	Air C	B.R. SO3	рН	R ₀	marks or other tests
(kg/m3)	(%)	3.G. V	oids C.	gm/litre	P		
		<del> </del> -		-		<u>.</u>	
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GENERAL REMARKS	<u> </u>	<u> </u>		<u>l</u>			<del></del>

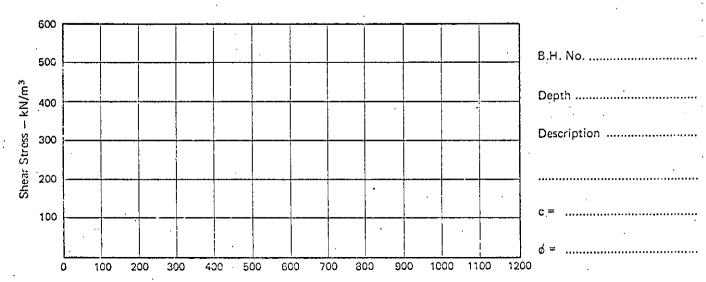
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# LANCASHIRE COUNTY COUNCIL

## TRIAXIAL COMPRESSION TESTS (MOHR'S CIRCLES)





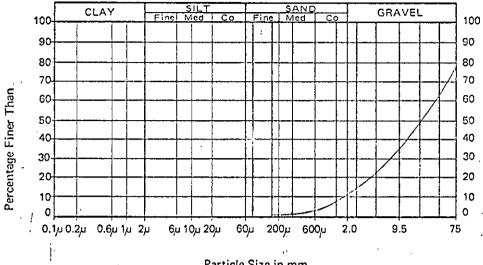


Total Normal Stress - kN/m3

#### LANCASHIRE COUNTY COUNCIL

JOB No. ...34.7.

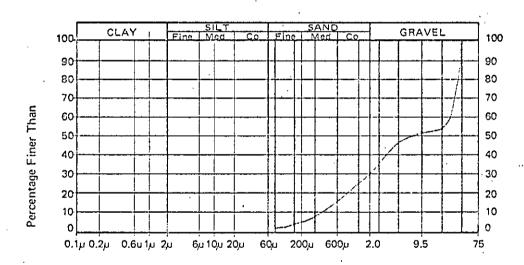
#### PARTICLE SIZE DISTRIBUTION



В.Н. No. *НА 22* Depth 10.0 m

Description G W

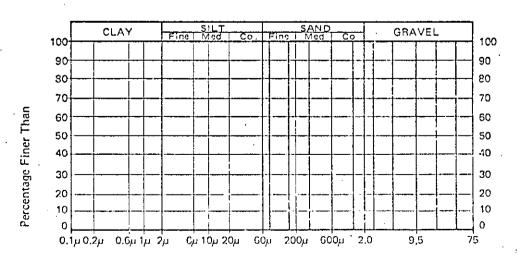
Particle Size in mm.



B.H. No. HA 22/2... Depth 11:5.7

Description. G. P.

Particle Size in mm.



Description.....

Particle Size in mm.

Metric	,	LANCAS	HIRE COU	 JNTY CC	UNCI	_			•	JOB No	o
j			E DATA SHE								о 47Н
*	SCHEME	TROPUTA AR A	ON HARLING!	ודת דר גרכם	THOTOM						1.9 m
	LOCATION		2m OFFSET 44			,	,				ND LEVEL194.9. m
,		criptical of Strate	urn	Depth	Sample	M.	c. L	L/PL/PI	Class'n		Water & Casing Details
0		TOPSOTU		0.1	1 2 3  Ke	У	C	ore Rec'y	-		Started 16.7.75
	Very soft	•				ļ					5021 100 10,7,7,7
	brown		-	ļ		ļ			Pt		
1	psaudo-fibrou	s PEAT	•								
	_Saturated			4 ,,							
	Light gray S	AND and GRA	7EL	1.7					S'#		16.7.75 BH 'Dry'
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	CIDENCIU	TEGT DEGI	U.T.C						<u> </u>		
	STRENGTH			MC	Comp	Street	Cob	esion	<del></del> -		
	Depth of Sample	Bulk Dens'γ (kg/m ³ )	Dry Dens'y (kg/m³)	M.C. (%)	Comp.: (kN/r	n2)	(kN/	esion m2)	Ø		Remarks
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franklika a territoria			<u> </u>	ļ							
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THE CHILDRETTY HAMESHITZ TOTAL CTI		<u> </u>		<u> </u>	<u> </u>	<del></del>	<u> </u>			· · · · · · · · · · · · · · · · · · ·	
*.ä	COMPACTION	<del></del>			7	<u> </u>		T-60i-			
1	Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	S.G.	Air Voids	C.B.R.	SO ₃ gm/litre	pH	Rei	marks or other tests
4:									T		
1											
	GENERAL	REMARKS	<u> </u>	<del></del>			·	<u> </u>	<del></del>		C87A L6272 TayP
				Hand	l Auger	Hole				-	

SCHEME A.56 DIVERSION - HASLINGDEN TO ACCRIMGTON DEPTH C.4  LOCATION CHAINAGE 1570m OFFSET 43m EAST GROUND LEVEL 193.4			HIRE COUN									)367
COMPACTION AND OTHER TEST RESULTS  COMPACTION AND OTHER TEST RESULTS  COMPACTION AND OTHER TEST RESULTS  COMPACTION AND OTHER TEST RESULTS  COMPACTION AND OTHER TEST RESULTS  COMPACTION AND OTHER TEST RESULTS  COMPACTION AND OTHER TEST RESULTS  COMPACTION AND OTHER TEST RESULTS  COMPACTION AND OTHER TEST RESULTS  COMPACTION AND OTHER TEST RESULTS  COMPACTION AND OTHER TEST RESULTS  COMPACTION AND OTHER TEST RESULTS  COMPACTION AND OTHER TEST RESULTS  COMPACTION AND OTHER TEST RESULTS  COMPACTION AND OTHER TEST RESULTS  COMPACTION AND OTHER TEST RESULTS  COMPACTION AND OTHER TEST RESULTS  COMPACTION AND OTHER TEST RESULTS  COMPACTION AND OTHER TEST RESULTS  COMPACTION AND OTHER TEST RESULTS  COMPACTION AND OTHER TEST RESULTS  COMPACTION AND OTHER TEST RESULTS  COMPACTION AND OTHER TEST RESULTS  COMPACTION AND OTHER TEST RESULTS  COMPACTION AND OTHER TEST RESULTS  COMPACTION AND OTHER TEST RESULTS  COMPACTION AND OTHER TEST RESULTS	•	BOREHOLE DATA SHEET No										
Description of Stream  Depth Sample (M.C. LL/F/M) Close No. N. Volum Water & Casing Description of Sample (M.C. LL/F/M) Close Recv (M.C. LL/F/M) Str. Str. Str. Str. Str. Str. Str. Str.	SCHEME		ON = HASLINIDEN	TO ACCR	INGTON							
Grey Crown of Eph Cylindry (1977)  Light grey SAIS and Fire GRAYST  Light grey SAIS and Fire GRAYST  STRENGTH TEST RESULTS  STRENGTH TEST RESULTS  Depth of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of	LOCATION	CHAINAGE 157	Om OFFSET 43m	EAST	, <del></del> -						GROU	ND LEVEL193.4
Grey Crown of Eph Cylindry (1977)  Light grey SAIS and Fire GRAYST  Light grey SAIS and Fire GRAYST  STRENGTH TEST RESULTS  STRENGTH TEST RESULTS  Depth of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of Sample  Out of				Depth	Sampl 1 23 K 6	e M	.c.	Cor	/PL/PI c Rec'y	Class'n	N Value	Water & Casing Deta
STRENGTH TEST RESULTS  Depth of Sample   Sundample   Dup Depth   M.C.   Comp. Stress   Cohesian   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California   California	Grey-brown sl	TOPSUIL ightly peaty	SAND	0.1								Started 16.7.75
STRENGTH TEST RESULTS  Depth of Sample   Dut Dearly   Dry Dearly   M.C.   Comp. Street   Cohesion   Quit Dearly   Compaction   Comp. Street   Cohesion   Quit Dearly   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compact	Light	grey SAND and	d fine GRAVEL	₹ ŏ.4		j				SW		W.E. C. 3m 16.7.75 S.W.L. C. 3c
STRENGTH TEST RESULTS  Depth of Sample   Dulk Depth   Dry Densy   M.C.   Corposition   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College   College	_		-			_						
STRENGTH TEST RESULTS  Depth of Sample   State Day's   Dry Danty   M.C.   Corpo. Stress   Cohesion   (RN/m2)   0   Remarks						;				İ		
STRENGTH TEST RESULTS  Depth of Sample   Bulk Dens'y   Dry Dens'y   (kg/m3)   (kg/m3)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)		•		-						ł		·
STRENGTH TEST RESULTS  Depth of Sample   Bulk Dens'y   Dry Dens'y   (kg/m3)   (kg/m3)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)	_											!
STRENGTH TEST RESULTS  Depth of Sample   Bulk Dens'y   Dry Dens'y   (kg/m3)   (kg/m3)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)				<b>\</b>						ļ		• ···
STRENGTH TEST RESULTS  Depth of Sample   Bulk Dens'y   Dry Dens'y   (kg/m3)   (kg/m3)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)				}								
STRENGTH TEST RESULTS  Depth of Sample   Bulk Dens'y   Dry Dens'y   (kg/m3)   (kg/m3)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)	_			1		-						
STRENGTH TEST RESULTS  Depth of Sample   Bulk Dens'y   Dry Dens'y   (kg/m3)   (kg/m3)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)							1					
STRENGTH TEST RESULTS  Depth of Sample   Bulk Dens'y   Dry Dens'y   (kg/m3)   (kg/m3)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)							į					
STRENGTH TEST RESULTS  Depth of Sample   Bulk Dens'y   Dry Dens'y   (kg/m3)   (kg/m3)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)   (kg/m2)	_						-					
STRENGTH TEST RESULTS  Depth of Sample   Bulk Dens'y   Dry Dens'y   (kg/m3)   (kkl/m2)   Comp. Stress   Cohesion   (kN/m2)   (km/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (				1			,					
STRENGTH TEST RESULTS  Depth of Sample   Bulk Dens'y   Dry Dens'y   (kg/m3)   (kkl/m2)   Comp. Stress   Cohesion   (kN/m2)   (km/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (				} .								
STRENGTH TEST RESULTS  Depth of Sample   Bulk Dens'y   Dry Dens'y   (kg/m3)   (kkl/m2)   Comp. Stress   Cohesion   (kN/m2)   (km/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (	_					-		_				
STRENGTH TEST RESULTS  Depth of Sample   Bulk Dens'y   Dry Dens'y   (kg/m3)   (kkl/m2)   Comp. Stress   Cohesion   (kN/m2)   (km/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (				1						Ì		
STRENGTH TEST RESULTS  Depth of Sample   Bulk Dens'y   Dry Dens'y   (kg/m3)   (kkl/m2)   Comp. Stress   Cohesion   (kN/m2)   (km/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (				Ì		-			·		•	
STRENGTH TEST RESULTS  Depth of Sample   Bulk Dens'y   Dry Dens'y   (kg/m3)   (kkl/m2)   Comp. Stress   Cohesion   (kN/m2)   (km/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (kN/m2)   (	_		•							ĺ		
STRENGTH TEST RESULTS  Depth of Sample   Bulk Dens'v (kg/m3)   Dry Dens'v (kg/m3)   M.C. (kN/m2)   Comp. Stress (kN/m2)   Ø Remarks				1.		* -   *	: I					
STRENGTH TEST RESULTS  Depth of Sample   Bulk Dens'v (kg/m3)   Dry Dens'v (kg/m3)   M.C. (kN/m2)   Comp. Stress (kN/m2)   Ø Remarks	_											
STRENGTH TEST RESULTS  Depth of Sample   Bulk Dens'v (kg/m3)   Dry Dens'v (kg/m3)   M.C. (kN/m2)   Comp. Stress (kN/m2)   Ø Remarks				1	lill		i					
STRENGTH TEST RESULTS  Depth of Sample   Bulk Dens'v (kg/m3)   Dry Dens'v (kg/m3)   M.C. (kN/m2)   Comp. Stress (kN/m2)   Ø Remarks							į					
STRENGTH TEST RESULTS  Depth of Sample   Bulk Dens'v (kg/m3)   Dry Dens'v (kg/m3)   M.C. (kN/m2)   Comp. Stress (kN/m2)   Ø Remarks	_									-		
STRENGTH TEST RESULTS  Depth of Sample   Bulk Dens'v (kg/m3)   Dry Dens'v (kg/m3)   M.C. (kN/m2)   Comp. Stress (kN/m2)   Ø Remarks						İ	į					
STRENGTH TEST RESULTS  Depth of Sample   Bulk Dens'v (kg/m3)   Dry Dens'v (kg/m3)   M.C. (kN/m2)   Comp. Stress (kN/m2)   Ø Remarks				<b>\</b>		ļ	ļ					
STRENGTH TEST RESULTS  Depth of Sample   Bulk Dens'v (kg/m3)   Dry Dens'v (kg/m3)   M.C. (kN/m2)   Comp. Stress (kN/m2)   Ø Remarks	<del></del>					$\vdash$						
STRENGTH TEST RESULTS  Depth of Sample   Bulk Dens'v (kg/m3)   Dry Dens'v (kg/m3)   M.C. (kN/m2)   Comp. Stress (kN/m2)   Ø Remarks	•			1								•
Depth of Sample Bulk Dens'y (kg/m3) Dry Dens'y (kg/m3) M.C (kN/m2) Comp. Stress (kN/m2)												
Depth of Sample Bulk Dens'y (kg/m3) Dry Dens'y (kg/m3) M.C (kN/m2) Comp. Stress (kN/m2)	STRENGTH	TEST RESI	II TS	<u></u>	<u> </u>				<del></del>		<u></u>	
COMPACTION AND OTHER TEST RESULTS  Depth of Sample   Compaction   Dry Dens'y (kg/m:3)   M.C. (%)   S.G.   Voids   C.B.R.   SO3 gm/litre   pH   Remarks or other tests				M.C	Comp.	Stress	1	Cohes	ion			
COMPACTION AIND OTHER TEST RESULTS  Depth of Sample Compaction Dry Dens'y (kg/n:3) M.C. (%) S.G. Air Voids C.B.R. gm/litre pH Remarks or other tests	Depth of Sample	(kg/m3)	(kg/m3)	(%)	(kŇ/	m2)	+-(	kN/m	:2)	- <del>V</del>		Hemarks
COMPACTION AIND OTHER TEST RESULTS  Depth of Sample Compaction Dry Dens'y (kg/n:3) M.C. (%) S.G. Air Voids C.B.R. gm/litre pH Remarks or other tests					ļ		╬.					
COMPACTION AIND OTHER TEST RESULTS  Depth of Sample Compaction Dry Dens'y (kg/n:3) M.C. (%) S.G. Air Voids C.B.R. gm/litre pH Remarks or other tests							<u> </u>					
COMPACTION AND OTHER TEST RESULTS  Depth of Sample   Compaction   Dry Dens'y (kg/m;3)   M.C. (%)   S.G.   Air Voids   C.B.R.   SO3 gm/litre   pH   Remarks or other tests							<u> </u>		<u> </u>			
COMPACTION AND OTHER TEST RESULTS  Depth of Sample   Compaction   Dry Dens'y (kg/m;3)   M.C. (%)   S.G.   Air Voids   C.B.R.   SO3 gm/litre   pH   Remarks or other tests		-										<u></u>
COMPACTION AND OTHER TEST RESULTS  Depth of Sample   Compaction   Dry Dens'y (kg/m;3)   M.C. (%)   S.G.   Air Voids   C.B.R.   SO3 gm/litre   pH   Remarks or other tests				<u> </u>							-	
COMPACTION AND OTHER TEST RESULTS  Depth of Sample   Compaction   Dry Dens'y (kg/m;3)   M.C. (%)   S.G.   Air Voids   C.B.R.   SO3 gm/litre   pH   Remarks or other tests				<u>-</u>	<u> </u>							
COMPACTION AND OTHER TEST RESULTS  Depth of Sample   Compaction   Dry Dens'y (kg/m;3)   M.C. (%)   S.G.   Air Voids   C.B.R.   SO3 gm/litre   pH   Remarks or other tests						مرسوم راد و	<del>_</del>				<del> </del>	<del></del>
COMPACTION AND OTHER TEST RESULTS  Depth of Sample   Compaction   Dry Dens'y (kg/m;3)   M.C. (%)   S.G.   Air Voids   C.B.R.   SO3 gm/litre   pH   Remarks or other tests	<del></del>		<del> </del>	<del></del>	<del> </del>		+				<del></del>	
COMPACTION AND OTHER TEST RESULTS  Depth of Sample   Compaction   Dry Dens'y (kg/m;3)   M.C. (%)   S.G.   Air Voids   C.B.R.   SO3 gm/litre   pH   Remarks or other tests			<u> </u>		<del>                                     </del>		+-					
Depth of Sample Compaction Dry Dens'y (kg/m:3) M.C. (%) S.G. Air Voids C.B.R. gm/litra pH Remarks or other tests		<u> </u>	<u> </u>		<u></u>		<u> </u>					
(kg/m:3) (%) 3.3. Voids c.m. gm/litre pri	COMPACTIO	TO DNA NC			S		<del></del>			· · · · · · · · · · · · · · · · · · ·		
	Depth of Sample	Compaction	Dry Dens'y (kg/m:3)	M.C. (%)	S.G.	Air Voids	C.F	3.R.	SO3 m/litre	рН	Re	marks or other tests
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			1		<del>                                     </del>		1					·

LOCATION	CULTUION 41	668m OFFSET 34	m Figh						GROU	ND LEVEL193
	escription of Strat		Depth	Samr	ole M	.c.	LL/PL/PI	Class'n	N Value	Water & Casin
	TOPSOIL	<u>-</u>	0.1	123 K	Cey		Core Rec'y	<del> </del>	<u> </u>	Started 15.7.7
	organic very s	indy CLAY	0.4					OL		Star 15, /. /
Soft brown		<u>.</u>				,		Pt		
pseudo fibr	ous PEAT		1.2				<del></del>	SW		W.E. 1.2m
Light grey	gravelly SANI	<del>-</del>	1.2							16.7.75 S.W.L.
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	H TEST RES	Dry Dens'y	M.C.	Comr	. Stress	Col	hesion			
Depth of Samp	le Buik Dens'y (kg/m3)	(kg/m3)	(%)	(kľ	. Stress /m²)	(kN	I/m2)	Ø		Remarks
		<del> </del>		-	<del></del>	<u> </u>				
			<del></del> .	<u> </u>		<u> </u>				
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		<b></b>		-		<u> </u>				
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				<u> </u>		<u> </u>				··· [
COMPACT	O DNA NO			TS	1					
Depth of Samp	le Compaction	Dry Dens'y (kg/m3)	N.C. (%)	s.c.	Air Voids	C.B.F	SO3 gm/litre	рН	Re	marks or other test
						$\perp$	<u> </u>			
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	•		H <mark>IRE COUN</mark> E DATA SHEET							JOB N	o
	SCHEME	A.56 DIVERS	ION - HASLINGDE	NO N TO AC	CRINGTON	•••••				B.H. N DEPTH	o
	LOCATION		91m OFFSET 33m			••••••	,		•••••		ND LEVEL 192.8
	Descr	iption of Stratu	m	Depth	Sample 1231 Key	M.C	Co	L/PL/PI re Rec'y	Class'n	N Value	Water & Casing Detail
)	Dark grey-brow Soft mottled g silty CLAY	rey/orange-br	dy CLAY cwn	0.1					CF CF		Started 16.7.75
-  -	-			0.7					101	i 	10° 1° 12 BU -DLÀ.
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	STRENGTH			<u></u>	<u> </u>	<u> </u>					<u> </u>
-	Depth of Sample	Bulk Dens'y (kg/m ³⁾	Dry Dens'y (kg/m3)	M.C. (%)	Comp. St (kN/m²	) ()	Cohe (kN/i	sion m2)	Ø		Remarks
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-					<u> </u>						
									-		
-											
			·								
.	COMPACTIO	N AND OT	HER TEST BI	ESHI T	<u> </u>					=-	
-	Depth of Sample	Compection	Dry Dens'y (kg/m3)	M.C. (%)	S.C.	Air /oids	C.B.R.	SO3 gm/litre	рН	Re	marks or other tests
-										<u> </u>	
- 1				<del></del>	-			<del>  </del>			

Sec. 25.

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SCHEMEA			ast		·				· · · · · · · · · · · · · · · · · · ·	ND LEVEL .192
	ription of Stratu	ım	Depth	Sampl	le ey M.	c. c	L/PL/PI ore Rec'y	Classin	N Value	Water & Casi
TOPSOIL  Brown slightl			0.2					CL +Pt		Started 16.7.
friable sandy Grey slightly	CLAY		0.7		j					
Soft brown sl:			1.0			$- \dotplus$		M£:		<u> </u>
Brown clayey			1.4					CL +Pt SC		16.7.75 BS 'D
. 22044 022,03	5.0.02.0		1.5			ļ			 	
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<u> </u>				!						
STRENGTH	TEST RESU	JLTS		<del></del>					<u> </u>	
Depth of Sample	Bulk Dens'y (kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	Comp.	Stress m2)	Cohe (kN/	esion	0		Remarks
			(107							
			-	1						
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									<u> </u>	
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COMPACTIC	N AND OT	HER TEST	RESULT	<del></del> S		<del></del>	<del></del>			<del></del>
I COMI ACTIC	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	s.G.	Air Voids	C.B.R.	SO ₃ gm/litre	pH	Re	marks or other te
Depth of Saniple		i ikaktivat i						<del></del>		
		/ (Kg/II/G)				Ì	1			

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me		LANCAS	HIRE COU	VTY CO	UNCIL					JOB No	367
		BOREHOL	E DATA SHE	ET No!	! OF	?					o <u>/</u> s <u>48</u>
	SCHEME	= 4.56 DIVER	SION - HASLING	DEN TO ACC	CRINGTON					DEPTH	13,5 m
	LOCATION	CHAINAGE 1	672m OFFSET 1	2m West			,			GROUI	ND LEVEL 202.1 m
_	Des	cription of Strat	nm	Ðepth	Sample 123 Key	M.C.	Co	L/PL/Pi ire Rec'y	Class'n	N Value	Water & Casing Details
0					SP	(10.7			GC	N = 14	Started 11.9.73
	FILL		ŕ			i I					
1	Medium dense		-		В	(12.3	3)	··	<del></del>		
	slightly clay	· -		1 . [				-			
	with gravel	size stones.			SP	12.6				N = 13	
2	- Some firm san	ndy clay.			<b>2</b>		<del> </del>		<del>                                     </del>		
	A little ash	and clinker.				1	İ				
2	Occasional co	obbles.			B SP	11,2					
3	F			1	SP	12.2				N = 4	
	-						j				
. 4	_			1 1					-	<u> </u>	
	<u>.</u>				В	9,5	1				
					B SP	13,1				N = 14	
5	-		•	İ			-				
					В	9.6	Gra	ading	GW		
6	Ł			i 1				*.07.162			
					SP	10, 1				N = 17	
•				~							
7	_			] ]	P	(16, 1	<u> </u> 	ndina.	GC	<u> </u>	
	-					1(10. )	) Gr	rorug	GC		
	ļ				SP B	-	į			N = 50 for 110mm	
8	-				В	(13.5	<del>} </del>				W.E. 8.2m
	-		•		m III	13.9	l t			N = 27	Standing
9	-			9.0	원	1,00,7	<u> </u>			11 = 21	-
,	. Very dense - fine to media	OD43799		"	B	-	Gre	ading	GW .		
	L	silty CLAY	binder.	1 1	SP. B	18.8				N = 50	11.9.73 S.W.L. 9.2m Casing 9.5: 12.9.73 S.W.L. 8.7m
10	)	<del></del>	<del> </del>	10.0	<u> </u>	<u> </u>	<u> </u>	<del></del>			12.9.73 S.W.L. 8.7m
	STRENGTH		JLIS Dry Dens'y	МС	Comp C		Cohe	sion			
	Depth of Sample	Bulk Dens'y (kg/m3)	(kg/m3)	M.C (%)	Comp. St (kN/m	2)	(kN/r	n2)	0		Remarks
	2.50 - 2.80	2050	1845	11.2	46		23		<u>-                                     </u>	39 U.C.T.	(R) (?)
						]					
								_			
	COMPACTION	TO QUA NC	HER TEST I	RESULT	<del></del> S	<del></del>	_,, <del>,</del>	<u>-</u>			
	Depth of Sample	Compaction	Dry Dens'y	M.C.		Air Voids C	.R.R.	SO ₃	рН	Rei	marks or other tests
	c.75	D4,5 CBR	(kg/m3) 2029	12.3		voias	4%	gm/litre		<del>-</del>	sandy gravelly clay
	8.00	D4.5 CBR	1934	13.5	<del>                                     </del>		78				sandy gravelly clay
		J., J Cuit		1,74,7	<del>  -</del>	-	1.5	<del>  </del>	-	C. P. II.	was transits eral
	CENEDAL	DEMARKS.	<u> </u>		<u> </u>			<u> </u>			
	GENERAL	n civiAKKS									CETA L6277 TayPt

Metric	•	LANCAS	HIRE COU	NTY C	OUN	CIL			·		JOB M	o. 367
	•	BOREHUL	E DATA SHE	ET No	.2 (	OF	2				B.H. N	o48
j	SCHEME	A.56 DIVERSIO	M - HASLINGDEN	TO ACCR	INGTO	N						վ <b></b>
	LOCATION	CHAINAGE 1672	m OFFSET 12m	VEST							GROU	ND LEVEL 202.1 m
10	Desc	cription of Strate	ım.	Depth	Sa  1 2 3	mple Key	- M.C.	LI Co	L/PL/PI re Rec'y	Ciass'n	N Value	Water & Casing Details
10	-	,		10.0		SP	22.0	T			N = 15	WE. 10.0m (Slight)
	Soft to firm											
11	dark grey-bro		-						<del></del> -	-	!	
İ	varved silty					КJ	26.7	!		CH/MF		
	Occasional le SAND and SILT					B		1	20/17	CI		
12		•			71H   1824	В	30.5	Gra	ding	Сн		<del> </del>
,	-											
	_			-	H	KJ	35.1					
13	•	•	:		Tether.	<b>U</b> 4	29.6					12.9.73
				13.5			į				ļ	Casing 13.0m SWL, 6,6m OWC.
14	<u>-</u>						<u> </u>			<del>                                     </del>		
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		•			$\{   $							
	STRENGTH	TEST RESU	JLTS									
	Depth of Sample	Buik Dens'y (kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	Co	mp. Si kN/m	ress 2)	Cohe (kN/r	sion n2}	Ø		Remarks
	11.75 - 12.00	1960	1590	26.4		62		31	Ì	_	38 U.C.T.	(R) (2)
-	12,00 - 12,50	1840	1410	30.5		74		37		_	38 E C.T.	
	13,00 - 13,45		-	29.6		_		26 -	28	_	L.V.T. (2)	
							<del> </del>					
					<del>                                     </del>				<del></del>			
					+						<del></del>	
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											·	
		<u> </u>	<u> </u>	D C C I I '	<del>. i</del>						<del></del>	
İ	COMPACTION OF COMPACTION	T	Dry Dens'y	M.C.			Air la	D C	SO ₃	- Lu	-	an alle an act of the second
	Depth of Sample	Compaction	(kg/m3)	(%)	3.	G. ,	Air Zoids C	.b.H.	SO3 gm/litra	рН		emarks or other tests
					-				 			
					-	+			<del></del>			
		ļ ————————			<u></u>			<del></del> -	<u> </u>			
	GENERAL	REMARKS								•		C87A 16272 TayPtg

ic		LANCAS	HIRE COU	NTY (	CO	UN	CIL							o <b>367</b>
	<del>-</del>		E DATA SHE											o51
S	CHEMEA	.56 DIVERSION	- HASLINGDEN	TO ACCR	I NG	TON	•••••					••••		i5.0 π
L	OCATION C	HAINAGE 1767m	OFFSET 22m	WEST.						·			GROU	ND LEVEL 199.9
0		cription of Strate	um	Dep		Sa 1 2 3	mple Key	- M.C	:	LL/PL/ Core Re	PI c'y	Ciass'n	N Value	Water & Casing Details
•	ry soft to fi			0.1		HES	Ū4	51.	3					Started 7.9.73
	tried orango).	light grey/mic	ı grey				KJ	<u> </u>						
000	all pockets of casional grave I cobbles.	f SAND. el size stone:	s			11.5	U4	16.	1			CI		 
2 -	•						KJ							
3		<u> </u>		3.0		- SANGE	SP	-					N = 38	WE, 3.0m
mot	m to stiff tled mid greatly CLAY.	y/dark grey/bi	rown .			<b>4</b>	KJ					CI		•
	ch gravel size	e stone. and o	cobbles.				   va						<del></del>	
000	asional vein	s or sand.				23163	SP KJ	-					N = 44	7.9.73
				5.0						•				Casing 5.0m SWL. 3.0m OWC.
-					}			-	-	·				<u> </u>
-														
-			÷						1					~
-  -  -									- -		<del></del>			
			•											
	TRENGTH	TEST RESU												
De	pth of Sample	Bulk Dens'y (kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)		Co:	mp. St kN/m	irest 2)	Çc (ki	hesion N/m²)		ŋ		Remarks
G. L	0.30			31.	3		_			_	-		Copsoil	
1.5	0 - 1.85	2135	1840	16.1	<u>.                                    </u>	 	104			52	-	:	38 U.C.T.	(R) (2)
-						-	<del></del>						-	
											$\pm$			
С	OMPACTIO	TO GNA NO			_	S						, , , , ,		
De	pth of Saniple	Compaction	Diy Dens'y (kg/m3)	M.C. (%)		S.C	G.	Air <u>Zoids</u>	C.3.	R. SO; gm/lit	tre	pH	Re	marks or other tests
											+			
G	ENERAL F	REMARKS	U4 at 3.0m	No reco	ver	<u> </u>	bould	le, <del>r</del>		<u></u> _			<del></del>	C87A L62°2 TayPt

LC	OCATION	CHAINAGE 190	3m OFFSET 8m V		<del></del> -	,	,			GROU	ND LEVEL199
	Desc	ription of Strate	ım	Depth	Sample 123 Key	М.С.	LL/PI Core R	/PI ec'y	C!ass'r	N. Value	Water & Casing
F	ILL .										
B7	lack ash		_		В	24.5					
77,	and to	noft mottled o	range/mid brow	1.0	∏   kJ	26.7	-			1	<del></del>
	-		w gravel size	^m	U4	35.1			CI		
	tones.	·		1.8		33,9	•				W.E. 1.8m S.W.L. 1.6m Aft
	ery loose ark grey-broa	<b>7</b> 11			ПП	1232			<u> </u>		
-	layey very si				SP	-	,			N = 2	
w	ith a few gra	wel size stor	es.			ļ	C-33-		sc	<u> </u>	5.0. 3.4m
	Saturated			3.4	B KJ	15.4	Gradin	#S	GP ⁺		3,0,1,44
ŀ					B KJ U4	27.4					
- F	irm to stiff					i		_	+		
1	ark grey-brow				-     kJ	10.5					
<b>-</b>	ilty sandy ( ith gravel si			;						,	3.9.73 EH 'Dry
1					T U4	27.4	53/28/	/26	CH		Casing 5,0m 10,9,73 BH 'Dr
	casional ler										
_					∐   кл	15.2	29/15/	/14	CIT.	_	-
ļ.	•									İ	
1					U4	14.0					
-							<del>- </del>		<del> </del>		
ŀ			•		-     KJ	23.2	33/17/	/16	Cr.		,
}											
F					U4	-					
F					KJ	22.2	i i		İ		
									_	<del></del>	
F					D4	18.5					·
F		•			KJ	13.0					
0 <u></u> S1	FRENGTH	TEST RESU	JLTS	<del>'</del>	<del> </del>	<del></del>					
Dep	oth of Sample	Bulk Dens'γ (kg/m3)	Dry Dens'γ (kg/m³)	M.C. (%)	Comp. S	ress 2)	Cohesion (kN/m²)		Ø		Remarks
1.20	- 1.55	1905	1400	36.1	10		5	1		100 U.C.T.	(H = 190)
3,50	- 3.95	1915	1500	27.4	130		65			38 U.C.1.	(R) (2)
	- 5.45	1915	1505	27.4	120		60			38 U.C.T.	
	- 6.95.	2270	1990	14.0	80		40			100 U.C.T.	
	- 9:45	2195	1855	18.5	78		39			100 U.C.T.	
7,00	- 74 17	*,	,05,1	10.7	10			<del>-  </del> -		100 0.0.1.	
					<del>                                     </del>			-+			
-				<u></u>	-	$\dashv$		┤,		······	<del>,</del>
-								$\dashv$			•
	OMPACTIC	NI AND OT	HER TEST I	RECI!! T	 rs	1.					·
	oth of Sample	Compaction	Dry Dens'y	M.C.	C (	Air	C.B.R. SO	O3	рН	DA	emarks or other tests
	o. compre	- Jonipution	(kg/m3)	<u>(%)</u>		√oids \	gm/	litre			
		i .			1 1	1		- 1			

letric			HIRE COU									o <u>%7</u>
-	SCHEME	BOREHOL	E DATA SHEE	ET No N TO ACC	2 P.I.	OF	2			,		0
	LOCATION		3m Offset 8m				*******			•••••		ND LETEL 138.5 m
10	Desc	cription of Strate	ım	Depti	h	Sample 23 Key	М.0	C. C	L/PL/PI ore Rec'y	Class'n	N, Value	Water & Casing Details
	See Sheet	нэ. 1	-		-	U4	-		_			
11	Medium dense			11.1	767	KJ U4	23. 26.	l l	aling	MI		WE. 11.1m (Slight)
. 12	dark grey-brown			12.0				·				10.9.73 Casing 11.0m
									•			SWL. 4.2m OVC.
	<u>-</u>						<u> </u>			<u> </u>	ļ	
-												 
	· ·											
	<u>-</u>								<del> </del>		<u> </u>	
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	-						-					
	<u>-</u>			•						ļ		
:	 -							-				
٠	-  -								<del></del>		-	
	<u>.</u>	•						ļ				
,	<u>,</u> -											
	- - -											
	STRENGTH				<u> </u>	<u> </u>	<u></u>					1
	Depth of Sample	Bulk Dens'y (kg/m ³ ) 1955	Dry Dens'y (kg/m ³ )	M.C. (%) 26.8		Comp. St (kN/m ² 39	ress 2)	Cohe (kN/ 19		<i>φ</i>	100 U.C.T.	Remarks
_	11.35 = 11.75	.,,,,	,,,,,	20.0							100 0,0,1,	
•					_							
				<del></del>	-	<del></del>			-			
					1							
			İ		$\dashv$		-	<del></del> .				
<b>.</b>												
	COMPACTION Depth of Sample	Compaction	HER TEST F Dry Dens'y (kg/m3)	M.C.	ET.		Air	C B B	SO3	На		marks or other tests
			(kg/m3)	(%)	$\dashv$	0.0.	/oids	0.0	gm/litre			
	GENERAL I	REMARKS	<u> </u>					<u></u>			<del></del>	C87A L6272 TayFir
	I OFFINERY	1 - M. 7111/9										COLM PARKE INCH.

letric	•	LANCAS	HIRE COL	דאנ	Y CC	UNC	L					JOB N	o	67
	•	BOREHOL	E DATA SH	EET	No!	OF	2	•••						53
	SCHEME	a.56 divers	ION - HASLIN	GDEN	TO ACC	RINGTO	·					DEPTH	i	11.0 m
7	LOCATION	CHAITINGE 19	30m Offset	16n	EAST							GROU	ND LEVEL	199.0 m
_	Desc	cription of Stratu	រភា		Depth	Samp 123 K	le ev	M.C.	L	L/PL/PI ore Rec'y	/ Class'	n N Value	Water &	Casing Details
0	FILL.					ğ   U4		31.9					Started 7	7.9.73
						H K		20.9						
1	Loose		<del></del>			[]]["			ļ					·
	. dark red and Ash.	black			Ì		İ						W.E. 1.4m	(Slight)
	Some clayey s	and and				Si	,					N = 6		1 . 0.0
2	cobbles.	ziid and				ווו			<del> </del>		+		Not scale	d OII
3							İ							
	<del>-</del>					В		18.1						,
4	_								_					
						i								
			· <del>· · · · · · · ·</del>		4.7								W.E. 4.7m	ı ı after 15min
5	Loose					SI	⋰┟	16.8	-			N = 9	T	
	well graded					31		10.8				K = 9	Not sealc	3 011.
	dark grey-bro	wn										i		
6	coarse SAND	•				В	•	8.4						
	with gravel s	ize stones.	•								İ			,
7	· ·								1				-	
Ì									.					
					1		ŀ							
8	<u> </u>				  -	В	-	10.0	Gr	ading	SW			<del>.</del>
İ	•				ŀ									
9	•													
	<del>-</del> -													
		<del></del>	<del> </del>		9.6	-  - 		12.4						
10	See Sheet No.	<del></del>		<del></del>								<u> </u>	<u> </u>	
	STRENGTH			1		1 -							ii.	
	Depth of Sample	Buik Dens'y (kg/m3)	Drv Dens'y (kg/m3)		M.C. (%)	Comp (kN	. Stre /m²)	>S	Cohe (kN/i	m2)	Ø		Remarks	
	G.L 0.45	-	4.5	_	31.9	-			-		-	Ash fill		
	9,80 - 10,25	2150	1980	_	11,1	16	9		85		<u> </u>	38 U.C.T.	(P) (2)	
											<u>.                                    </u>			
								ļ						
		· -												
				1			•							
				+		<del>                                     </del>								
				+	<del></del>	<del>                                     </del>			<del></del>			<del></del>		
		-	<del> </del>	+				-		<del></del> -	<del>                                     </del>			
. i* **	COMPACTION	NI AND OT	LED TEST		20111.7	-c					<u></u>		<del></del>	
	Depth of Sample	Compaction	Dry Dens'y	nt	M.C.	S.G.	A	Air C	.B.R.	SO ₃	an l		marks or oth	or tosts
	3.6		(kg/m3)		(%)	-	Vo	oids C		gm/litre	рН 7 <b>.</b> 0/7 <b>.</b> 5	Water Sam	· · · · · · · · · · · · · · · · · · ·	E1 '63f2
	, , , , , , , , , , , , , , , , , , ,	-		+		<u> </u>	╁	-		trace	7.07/.02	-4401 GR/II		•
				1		<del> </del>	-							
		<u></u>		1			<u> </u>		·····	<u> </u>				
	GENERAL	REMARKS	Chicallin											C87A L6272 Tay

Metric		LANCAS	HIRE COL	INTY CO	OUNCI	L			_		o
			E DATA SH								o 53
	SCHEME				HINGTON.						11.0 m
	LOCATION	CHAINACT 1930		<del></del>	- CI			L/PL/PI	<del>- [::</del>		ND LEVEL 198.8. m
10		cription of Stratu		Depth	DIZIKI KA	еу	<u> </u>	ore Rec'y	Class'n	N Value	Water & Casing Details
ļ	Firm to stiff, silty CLAY w			11.0	D U				CL		
	cobbles and les		<del>-</del>		y v					-	7.9.73
11				11.0		·   ····		<del></del>	<del> </del>		Casing 10.5m
		•									SWL 1.7m OWC.
٠	· .								<u> </u>		
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	<u>,                                     </u>										
		,									
		-									
	STRENGTH	TEST RESU	ILTS								
	Depth of Sample	Bulk Dans'γ (kg/m3)	Dry Dens'y (kg/m,3)	M.C. (%)	Comp. (kN/	Stress m2)	Cohi (kN/	esion m2)	Ø	.=	Remarks
	10.50 - 10.95	2295	2040	12.4	192	2	94	5	-	100 U.С.Т.	
							ļ	'			
			<u> </u>	<u> </u>							
				<u> </u>							
							<u> </u>				
•	COMPACTION	ITC DNA NC		-,	S						
	Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	S.G.	Air Voids	C.B.R.	SO3 gm/litre	ρН	Re	marks or other tests
	GENERALI	REMARKS									C87A L62/2 la;Ptg

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Metric			HIRE COU									367
	SCHEME	BOREHOL .56 DIVERSION	E DATA SHE - HASLINGDEN								DEPTH	5
·.	LOCATION C	HAINAGL 1998m	OFFSET 25m	VEST	<u> </u>					<del></del>	GROUN	ND LEVEL202.5m
_	Desc	cription of Strate	in:	Depth	122	mple Key	_ м.с	;   ₍	LL/PL/P! Core Rec'y	Class'n	N Value	Water & Casing Details
. 0	FILL Loose	TOPSOIL	-	0.05	1.55.174	SP	41.				N = 2	Started 11.9.73
1	_ dark grey and ash,cinders,gl				NO STEPHEN	SP	40.	2			N = 7	
2	Some soft clay	·.			wichal Warra horage	Б	38.	2				
2					E STATE	SP	38.	3			N = 6	
3	<u>-</u>				E CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE CONTRACTOR DE	В	40.	0				
		•			ener energy	SP	32.	- 1			N = 3	
4				4.1		КJ	25,	8				
_	Very soft to s  mottled mid gr  silty sandy 0	ey/dark gre <b>y-</b>	рьони		्राष्ट्र-स्टर् _र	U4	(30.	6)	Grading	GC		W.E. 4.8m (Slight)
•	an abundance o					KJ	15.					
6	Mid brown silt			5.8	1	U4	12.	9		SC		
	Dense gravel a	*****		6.3	) Jacobson	SP	(11.	(3		_	N = 50 for 260mm	W.E. 6.3m rose to 5.3m in 15min
7	very soft :ilt	y sandy			3	В	(17.	ļ		GF		
8	- Firm to stiff CLAY with grav Longes of SAN	el size stone	s and cobbles	7.8 y 8.5	55.93	U4	12.	-↓-	Grading	SP Cr		11.9.73 Casing 8.0m SWL. 5.0h OWC
9	-  -  -  -  -							-	<u> </u>			0112, 7,02 0110
10	STRENGTH	TEST PES	II TS				<u></u>					
	Depth of Sample	Bulk Dens'y (kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	Co	mp. S (kN/m	tress	Co (kî	hesion 1/m2)	ø		Remarks
	4.20 - 4.65	-	-	(20.6)							Sandy clay	with gravel size stones
	5.80 - 6.20	2160	1915	12.9	$\perp$	100		50		-	38 U.C.T. (	(R)
	8,00 - 8,40	2070	1830	13.3		253		126	5	-	38 U.C.T. (	(R)
				 					-			<del></del>
					_							
	COMPACTION	ON AND OT			ΓS			<del></del>				
	Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	s	.G.	Air Voids	C.B.f	3. SO3 gm/litra Slight	рН	Rei	marks or other tests
	6.3		-	-	-	-	-		Trace	6.0	Water sampl	le
	CENEDAL	DEMA DICC										
	GENERALI	REWARKS									•	C87A 16272 TayPrg

		LANCAS	HIRE COU	NTY	cou	JNCI	L						o
			E DATA SHE										o <u>† . 55</u>
SCHE		A.56 DIVERSION			CCRIN	TON							15.9m
LOC.	TION	CHAINAGE 1998	offset 19a	EAST					•		,	GROU	ND LEVEL 203.4 m
0	Desc	ription of Stratu	m	De	epth 1	Sample 231 K	e .	M.C.	LI	_/PL/Pi re Rec∵y	Class'n	N Value	Water & Casing Details
<b>'</b>		TOPSOIL .		0,	.05	1	B 1	4.0				N = 12	Started 10, 9.73
FILL.					13		i						
e i	ed and b	lack	-				-		<u> </u>		<u> </u>		
ash,	orick,	glass			14.7%	SF	B 2	2.5				H = 19	
and		_					1						
stone	•				72	SP	2	0.2			_	N = 50	
1			-		7.		ľ	V				N = 50 for 75 mus	
ł													
[- <u>-</u> -			· · · · · · · · · · · · · · · · · · ·	<b>-</b> - 3.	0	KJ	5	07.0	<del> </del>	<del></del>	Pt		10.9.73 PH. 'Dry'
Black	fibrous	PEAT	·	<b></b>   3.	3	<b>U</b> 4	- 3	1.4	}		į		Casing 3.0m 11.9.73 Ed. 'Dry'
Very s						KJ		1.0	į		}	İ	WE, 3.6m (Slight)
_ mid gr silty					5	<b>U4</b>	<u>2</u>	4.5 5.1	Gra	ding	SF	]	
with	ODAT					KJ		7.0			CI		
gravel	size st	ones,					1	,			01		,
- Occasi	onal bane	ds of SAFD.					ı						,
					(F-38-411)	SP	L					N = 4	44.00%
			_	5.	9				<u> </u>				11.9.73 Casing 5.9m
F													SWL 5.8m OWC.
1				1			1		Ì	-		:	
<u> </u>	•	·		ŀ		i	-		1				
							İ				1		
<b>-</b>													
-							-		┿-				
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ţ													
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ŀ			•				-				ŀ		
<u>.</u> [				ļ			1						
STRI	NGTH	TEST RESU	JLTS			<del></del> .						<u></u>	
<u> </u>	f Sample	Bulk Dens'y (kg/m3)	Dry Dens'y (kg/m3)	M.( (%)	<i>j.</i>	Comp.	Sue	.s	Cohe (kN/r	sion	ø		Remarks
3.10 -		(KB/Mə)	1Kg/m3)			(KIN/	1114			1151	<del></del>	D	
		-	. /	31.4		-			•				ry soft silty clny
3.80 -	,25	2035	1635	24.5		18_	•	-	9		-   '	39 U.C.T.	<u>(a)</u>
ļ			<del></del>						·	-			
			******	<u> </u>									
											,		
				<u> </u>									
<u> </u>								_		<del></del> †		<del></del>	
	`		<del></del>		<u> </u>			$\dashv$	<u>.</u>				
	0.40=:=	1		<u> </u>						1			
		ON AND OT	Dry Dens'y	PESU M.				;		SO3	- 1		
Depth c	f Sample	Compaction	(kg/m3)	(%		S.G.	Vo	ids C	.E.R.	gm/litre	Hq	Re	emarks or other tests
j							J					····	·
		REMARKS		<del></del>			<del></del> -			<del></del>	<del></del>		CB7A L6272 TayPig

	Metric		-	LANCAS	HIRE COUN	VTY C	ou	NCII	_				JOB No	<b>33</b> .7
í			-	BOREHOL	E DATA SHEE	T No	1	OF.	2			•	B.H. N	o 56
•			SCHEME	A.56 DIVERSI	ON - HASLINGDI	EN TO AC	CRIN	GTON			******			110,5 m
١.		j	LOCATION	CHAINAGE 209	)3m OFFSET 17m	n WEST							GROU	ND LE''EL204.2m
. }			Desc	cription of Stratu	ım	Depth		ample 3 Ke		.c.	LL/PL/PI Core Recty	, Class'n	N. Value	Water & Casing Details
		0	FILL	TOPSOIL -		0.05								Started 12.9.73
1			Black ash.				# **	S	`   ·	•			N = 2	
1		1	 <del></del>		-			В		2.1				
- ; - ; - ;			Very soft			1.2		K	5:	3.3				
			Black PEAT					T4	255	7		Pt/OH		
	•	2	- and						-					
1			organic silty	CLAY,					╴ ┃ .	.				
1	• •		Soft to firm			2.6	NA.	บ4	17	7.3	25/15/10	CL		
i		3	mid grey			İ								
			silty sandy C with gravel si		nockets of PFA	ر <del>م</del>		-						
		4	Medium dense	ne boones und	poere us of 122	3.8	176							
.	v.		dark grey-brown	n		}	S. Carrie	CF	'   <b>-</b>				N = 22	W.E. 4.2m
-			well graded				П						Ì	S.W.L. 3.5m After 15m
		5	_ SAND	<b>+</b>					-					W.E. 4.7m S.W.L. 1.3m After 15m
1			with gravel si	ze stones.				В	12	.9		GW		3,1,2,2,1,2,2,2,2,1,2
	•	6				,	3		-   ''	•/		0		•
(3,5	•	٥												
62.2		i			,									
17		7	• <del>-</del>					В	<u> </u>	_	G 3t			
3									[	'   	Grading	SW		
1						.			İ					
100		8	-Saturated  Medium dense			- 8.0			-	-	-			
7.3			dark brown				127	B	19			SF		
10.		٠,	silty fine to	medlum SAND.			4		Ľ					
4.4		9	- Saturated											
			<del></del>	<del></del>	···	9.6	Н	KJ	14	•9		•		S.O. 9.6m
	•	10	See Sheet No. 1				Ŋ	<u> </u>					1	
Ì			STRENGTH			M.C.	16	Omp.	Stroce		phesion			· · · · ·
1			Depth of Sample	Buik Dens'y (kg/m3)	Dry Dens'y (kg/m3)	(%)	- -	(kN/	Stress n2)	(k	ohesion N/m²)	Ø		Remarks
i			1.40 - 1.80			255.7	-	-		1	0 - 26	-	L.V.T. (3)	
			2.60 - 3.05	*1	-	17.2	_	-		<u> </u>			Sandy clay	with gravel size stones
			9,80 - 10,25	2290	2020	13.4	4	128	3	<u> </u>	64		100 U.C.T.	
1			·											
					,		丄			<u>i</u>				
			•											
	•												•	
· }	an e may													
,			COMPACTION	TO GNA NC	HER TEST F	RESUL	TS							
ئ. لا :			Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	1 9	ვ.ს.	Air Voids	C.E.	R. SO3 gm/litre	рН	Re	marks or other tests
			1.3	<b>-</b>	- (1.5g/11.5)	→ \ //d;		-	- 0103	-	Trace	6.0	Water Samp	ole
			3,5	-	-	_	<del> </del>	-	-	<del>  -</del>	No Trace	7.0	Vater Samp	ole
!										1	_			•
4			GENERAL S	REMARKS	<u></u>		<u>.L</u> .		<u></u>	!				C87A L6272 TayPig
۱.			J. WEINEL	TEMAINS										werrs swaf & 182714

Metric	T	LANCAS	HIRE COU	NTY C	OUNC	IL				JOB N	o <u>367</u>
	·		E DATA SHE						•	B.H. N	o56
	SCHEME							***************************************		DEPTH	10.5 m
***	LOCATION	JHAINAGE 2093⊐	OFFSET 17= 1	vest				•		GROU	ND LETELm
	Des	cription of Stratu	ım	Depth	Sam 1 2 3	nle M	ı.c. ,	LL/PL/Pl Core Rec'y	Class'n	N Value	Water & Casing Details
. 10	t	y-brown silty v		<del>-  </del>			3.4	zore nec y	CL		*
	CLAY with gra	ivel size stone	-	10.5				_			12.9.73 Casing 9.8m SWL 0.3m OWC.
. 11											
•								-			
						-					
	_										
	- -							~		,	
	- -  -					_					
	[ 	•									
			. <u> </u>								
	STRENGTH			<del>-</del>	<del> </del>	<del></del>	<del></del>				
	Depth of Sample	Buik Dens'y (kg/m3)	Dry Dens'y (kg/m3)	iv.C. (%)	Com (k)	o. Stress I/m²)	Cot (kN	nesion I/m²)	Ø		Remarks
- Linguis a care	COMPACTION	TO DNA NO	HER TEST	RESUL	<u> </u> ГЅ						<del></del>
	Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	\$.6.	Air Void	C.B.R	SC3 gm/litrg	Hq	Re	marks or other tests
	GENERALI	I REMARKS			1	<u> </u>	<u> </u>			<del></del>	C87A L6272 TayPtg

The state of the state of

Metric	\$ - \$ \$ T	LANCAS	HIRE COU	NTY C	OU	NCIL		-			JOB No	367
	-	BOREHOL	E DATA SHE	ET No.	1	OF	1					57
	SCHEME	A.56 DIVERSIO	N - HASLINGDE	N TO ACC	RINGT	ON		• • • • • •			DEPTH	6,5 m
	LOCATION	CHAINAGE 2093	a OFFSET 17m	EAST				•	·		GROU!	ND LEVEL 204.4 m
	Desc	ription of Strati	μm	Dept	h   S	ample 3 Key	M.C	.	LL/PD/P1 Core Recity	Classin	N Value	Water & Casing Details
0	FILL	TOPSOIL .		0.05			T	T				Started 12.9.73
	Black ash, brok	en brick, glas	<b>s</b>	lo.6	3	SP. KJ	£ 30.	9			N = 3	
1	FILL  Very soft		-			U4	34.			<u> </u>		
	mottled orange					KJ	17.					
_	silty, and silt with some grav		clay									arm no co (massa)
2	size stones	eī						$\dagger$				W.E. 2.Cm (Slight)
· .	<u>-</u>			İ	7	1)4	15,	5	Grading	SF		•
3		·			T. C.							W.E. 3.0m
	Very dense	-										S.W.L. 1.2m After 5min
	dark grey-brow	n			135	CP	_				ม = 50	
· 4	well graded SANDY GRAVEL			Ì			ļ.—-	+			for 150mm	
	with coobles.											••
_	-				,					GW		
5	<u></u>				ž		(11.	1)				
	•				П							
6							<u> </u>	-				
				_								12.9.73 Casing 6.5m
				6.5	H				~			S.W.L. 1.2m O.W.C.
7	_						$\vdash$	+				
	_											
0	-											•
8												
	<b>F</b>											•
9	<del>-</del>						-					
	<u>-</u>											
4.0	<u>-</u> -											
10	STRENGTH	TEST RESU	JLTS			<u> </u>	<u></u>				<u></u>	
	Depth of Sample	Bulk Dens'y (kg/m3)	Dry Dens'y (kg/m3)	M.C.	C	omp. S (kN/m	tress	Ç	ohesion N/m2)	ø		Remarks
	0.80 - 1.10	1955	1455	34.0		28	21	14		_	38 U.C.T.	· · · · · · · · · · · · · · · · · · ·
	2.50 - 2.95	1915	1655	15.6		34		17			38 U.C.T.	
				1,7,0	-¦ -			''	<u> </u>	-	<u>,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,</u>	(1)
									:			
					-						•	
					+					.	· · · · · · · · · · · · · · · · · · ·	
		<del></del>	<u> </u>			-					•	
	<del></del>	, .		-	+						<del></del>	
				<del> </del>								
· AND THE CONTRACT												
	COMPACTIO	<del></del>	<del></del>	•			Aic T		10-1	1		
	Depth of Saniple	Compaction	Dry Dens'y (kg/m3)	M.C. (%)		S.G. ,	Air Voids	C.B.	9(1)/111111	pH	Rer	marks or other tests
	1.2		-	<u>-</u>	$\perp$	-	-	-	0,1	< 4	Water Sampl	le ·
				ļ							<del>-</del>	
		<u> </u>	<u></u>	<u></u>								
	GENERAL F	REMARKS	Chi	selling	bould	ler 5.5	to 6.	5¤				C87A L6772 TayPig

Metric		LANCAS	HIRE COUN	TY C	υc	NCIL	-					JOB No	o. 367
			E DATA SHEE				1					B.H. N	o58
	SCHEME	.56 DIVERSION	- HASLINGDEN T	O ACCRI	NGTC	)N						DEPTH	l հ.4 m
	LOCATION C	HAINAGE 2204m	OFFSET. 19= WE	<u> </u>					٠.			GROU	ND LEVEL .205.6 m
	Desc	ription of Strat	um	Depth	112	Sample 3 Ke	M.C	;.		PL/PI e Rec'y	Class'n	N Value	Water & Casing Details
0	TO	PSOIL		0.2		T/4	20.	В	00.				Started 13.9.73
	Very soft		<i>-</i>			,,,							
	mid brown	1. AT 13	-			KJ	18.	8			CL		
1	<ul> <li>silty very san</li> <li>layered with</li> </ul>	dy CLAI											
	loose clayey s	ilty SAND.				104	14.	9	Gra	ding	sc		·
2													
-	Occasional gra	vel size ston	es.	}			-						
					$\parallel$	кл	16,	5			sc		W.E. 2.8m (Slight)
3				3.0	1							<del> </del>	
	Stiff			"	A. Section	U4	(13	.8					
	mottled orange	dark grey				:	-				_		W.E. 3.5m
.4	silty andy	LAY									ᇿ		S.W.L. 1.4m After 5 M
	with an abundance of g	ravel size st	Ones .	-									
		24.01 01-0 01	<b></b>				.						
5				5.0		В	<u> </u>	-					
	Dense well gra	.ded					Ì						
	with cobbles.				$\parallel$						GW		:
6	-Saturated	•				SP	-	_				N = 31	13.9.73
				6,4	3	.						·	Casing 7.0a
7				i									S.W.L. 1.0m 0.W.C.
•					Ιi		l l	İ					
8	<u>-</u>		-								<del> </del>		
								Ì					
			•		$\ $								
9	_						<u> </u>	-				<del>                                     </del>	
		·						l İ					
10	ļ.												
,,,	STRENGTH	TEST RESU	JLTS	<del>-!</del> -		<u> </u>						<del></del> _	·
	Depth of Sample	Bulk Dens'y (kg/m ³ )	Dry Dens'y	M.C.	С	omp. S	Stress	ç	ohesi	on	ø		Remarks
	G.L 0.35	1990	(kg/m3) 1650	(%) 20 <b>.</b> 8	╁	(KN/II 68	n2)	(K	(N/m	2)		38 U.C.T.	
		1,7,70			╁					_			(n)
	1.50 - 1.95 3.00 - 3.45		<del>                                     </del>	14.9	-				) - 2	5		L.V.T. (2)	445 - 335
,	3.00 - 3.49	<b>-</b>	-	13.8	┿-							Still clay	with cobbles
					-								
													···-
			]										
				-									
				<del></del>	-								
- Sphine Tata	COMPACTIO	און אור טיד	HER TEST R	ECI I	<u>-L</u>	====							
	Depth of Saniple	Compaction	Dry Dens'y	M.C.	1	s.G.	Air	C.3		SO ₃	На	D -	marks or other tests
		<u> </u>	(kg/m3)	(%)	+		Voids		9	m/litre		<del>-</del>	
	1.4	-	-	<del></del>	-	-		•	<u>-</u>	0.05	< 4	Water Samp	le
									-				
					$\perp$								
	GENERAL	REMARKS											C87A L6272 TayPig

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Metric		LANCAS	HIRE COU	NTY CO	OUNC	IL				•	JOB N	o. <u>%</u> 7
· -			E DATA SHE								B.H. N	o 59
<i>‡</i>	SCHEME	1.56 DIVERSION	- HASLINGDEN	TO ACCRIN	GTON						DEPTH	i 4.3 m
1 -	LOCATION C										GROU	ND LEVEL219.3m
		cription of Stratu	<del></del>		Samj	ple	M.C.	LI	L/PL/PI ore Rec'y	Classin	N Value	Water & Casing Details
0	TO	OPSUTL	<del></del>		11231 1	\ey		00	TE TIEC Y	<del></del>		Started 13.9.75
	Soft mid brown			0.4						CL		1
	silty very sar			ļ.								
1	with gravel si	ize stones .				B	21.2					
•				1.5	ম	KJ	21.0	1		SC		
2	Very dense					<b>U4</b>	12,0	├—			· <del> </del>	
·* ·	slightly claye	ey silty		Ì	HII	КJ	13,0					
	well graded							İ				
3	fine to medium size stones.	m gravel				U4	9.8	Gra	ding	GW	<del> </del>	·
	}		•		182.64	KJ	12,7	1	_			
: 4				· ·	1	U4	13.1					
1	<u> </u>			4.3	B							13.9.73
	ļ			\				Ì				Casing
5	<u> </u>						-·	<u> </u>				BH'Dry' C.W.C.
						-						
		ı										
6	: <del>[-</del>	!				- 1		<del> </del>	- "	+-	<del> </del>	
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1 7	. [	•								-	-	
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8	; <u> </u>							-			<u> </u>	
	ţ											
	<u> </u>	,										
9	, [-							1	<u> </u>	<del> </del>		
	<u>}</u>											
1	o <u>-</u>	·								<u> </u>		
<b>!</b>	STRENGTH	TEST RESU	JLTS									
	Depth of Sample	Buik Dons'y (kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	Com _i	p. Str. V/m²)	25.5	Cohe (kN/s	sion m2)	Ø		Remarks
	1.60 - 2.00	-	-	12.3	-			•		-	Clayey sar	nd with gravel size stone
T	3.00 - 3.45	-	-	9.8		,					Sand and g	ravel.
. •	3.70 - 4.10	_	_	13.1	<del>                                     </del>						Sand and g	
٠				1	<del>                                     </del>		-+					
<i>i</i>		<b></b>		†	1		-		i			
				<del>                                     </del>	<del>                                     </del>			_	j			
1				<del> </del>	+			_ •			<del></del>	
		<del> </del>		-	<del> </del>			_				
1	<del></del>	<del> </del>		<del> </del>	<del> </del> -	• • •		<del></del>	<del> </del>			
. 1 - 1		<u> </u>		<u> </u>	<u> </u>							
्व	COMPACTION	T	HER TEST Dry Dens'y	RESULT M.C.	$\overline{}$	Ţ;	Air I		SO ₃	<del></del>		
	Depth of Sample	Compaction	(kg/m3)	(%)	S.G.	· v	oids C	.B.R.	gm/litre	ρH	Re	emarks or other tests
1	1,6	D4.5 C.B.R.	2010	12, 3			8,	0%			C.P.R.	
1					<u> </u>							
<b>!</b>									<u> </u>		···	
	GENERAL	REMARKS							_			C87A L62/2 TayFig

- · · · · · · · · · · · · · · · · · · ·	A.56 DIVERSION			,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	• • • • • • • • • • • • • • • • • • • •	•••••		••••••		1 4.0 m ND LEVEL 211.2 m
LOCATION				Samp	le M.	$\overline{\Box}$	LL/PL <b>/P</b>	Class		Water & Casing Details
	ription of Stratu		Depth	123 K	еу		Care Rec	y Class	II I Value	Started 14.9.73
Soft mid brown			0.3	1 U4	્રેવ,	.4				
silty very sand		_		П	16.	.3		C.T.		
- with fine grave	<b>e1</b>									
size stones.			1,5	3						
Loose mid grey- slightly claye:				104	16. 12.	2	Grading	SF		Slight & E. 2.0n
A few fine gra									-	
				B KJ		.1		HL.		
			3.0	U4	l	_				
Soft to firm date sandy silty Of			1	KJ 104	1	ł		CI.		
and occasional	_					- 1		GL		14.9.73
<del></del> _			4.0	F K	<u>3).</u>					Casing 3.0m
							-		1	S.W.1. 1.5m O.W.C.
							, <del>-</del>			
-						i I				
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			7				ć			
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										,
STRENGTH	TEST RESI	ıı TS		1111						<u> </u>
Depth of Sample	Bulk Dens'v	Dry Dens'y	M.C	Comp.	Stress	Çc	hesion	ø	<u>, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,</u>	Remarks
· ·	(kg/m3) 1640	(kg/m3)	(%)		m2)	i	N/m2)	<del>  </del>		
3.L 0.45		1185	38.4	18	•	9		-	38 U.C.T. (	
1.50 - 1.95	2105	1810	16.2	-		<u>c'</u>	= 0	0'-37°	38 Cu (R) v	·
2.60 - 3.05			-	-		<del>  -</del> -		-	Clayey silt	with gravel size stones
3.40 - 3.85	2270	1990	14.7	60		30		-	100 U.C.T.	
				<u> </u>		<u> </u>				
					-		•			
CUMPACTIO	ON AND OT	HER TEST	RESULT	LS.			·	1		
		Dry Dens'y	M.C.	s.g.	Air	С.В.	B. SO3	рН	P.	marks or other tests
	} Compaction i		(%)	1 5.3.	Voids	1	m. gm/litr	<u>a</u>		CONTRACTOR STREET
Depth of Sample	Compaction	(kg/m3)		·· <del>  ····</del> ····	1	T				
	D4.5 C.B.R.	(kg/m3) 1850	.12.1	-	-	5.1		-	C. B. R.	,

Metric	The Estate	LANCAS	HIRE COUN	TY CO	DUNCI	L					o. <u>367</u>
			E DATA SHEE							B.H. N	o 61
	SCHEME	. A.56 DIVERSI	ON - HASLINGDEN	TO ACC	RINGTON		- 			DEPTH	3,0 m
	LOCATION	CHAINAGE 240	Om OFFSET 3m E	AST						GROU	ND LEVEL211.0m
	Desc	cription of Stratu	ım	Depth	Samp 1 2 3 K	le M.	c. L	L/PL/PI ore Resc'y	Class'n	N Value	Water & Casing Details
0	7	POPSOIL		0.3	U	ر _ز 4				<u>.                                    </u>	14.9.73
	Soft mottled o	-			4	i	İ				
1	silty sandy (	CLAY with a fe	w gravel	1.0	-    K	J 27	.8		cr		
	Nid brown										<u> </u>
	silty fine SA				E U	1 13	4 Gra	ding	S₽	İ	
2	with gravel si			ļ.		<u> </u>			1	<u> </u>	
	Slightly claye	ey in parts.									
	Firm dark grey	-brown varved	clavey SHT	2.8	1 U	4 2	.4		ML/CH	1	14.9.73 Casing 3.0m
3	· · · · · · · · · · · · · · · · · · ·	-BIOWN VALVEO	022303 0251	3.0					,		BH 'Dry' O. W.C.
	<u> </u>								İ		
4	}_					ļ			<u> </u>		
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	<u>}</u>								-		
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9	_								<del> </del> -		
	1										
10	F	•					j				
	STRENGTH	TEST RESU	JLTS	<u>-:</u>						<del></del>	
	Depth of Sample	Bulk Dens'y (kg/m3)	Dry Dens'y (kg/m³)	M.C. (%)	Comp.	Strecs m2)	Cohe (kR/	esion (n2)	Ø	-	Remarks
	G.L 0.45	- (Kg/III-)		35.5	- (814)	111-7	20	111-27	- i	. V. T.	
	1.50 = 1 95			13.4				1	<del> </del>		
	2.50 - 2.95			•	<del>} -</del>		<del>-</del>				dth gravel size stones
• •	2.00 - 2.00	- <del>-</del>		21.4	<del> </del> -	<del></del>	_ <del>-</del>		- + 9	layey silt	
			<u> </u>								
					<u> </u>	·					
		<u> </u>			<u> </u>						
					-	<del></del> -	-				
	\				<u> </u>		<u> </u>				
Number 2					<u> </u>		<u></u>				
	COMPACTION	ON AND OT	HER TEST R		S						
	Depth of Sample	Compaction	Dry Dens'v (kg/m3)	M.C. (%)	S.G.	Air Voids	C.E.R.	SO3 gm/litres	pl4	Re	marks or other tests
			[ <del>  </del>		1						
	GENERAL	REMARKS		<del></del>	<del>+</del>	<u> </u>	·				CB7A 16272 TayPig

Metric		LANCAS	HIRE COUN	TY CO	วบเ	NCIL						o <b>3</b> 67
	-	BOREHOL	E DATA SHEE	T No	1	OF	1			•	B,H. No	5 <del>1.61</del> A
	SCHEME	A.56 DIVERS	ION - HASLINGDE	TO ACC	RIN	G1 OH					DEPTH	9.3 m
	LOCATION		87m Offset 96m	EAST				٠.			GROUI	ND LEVEL\$28.3m
		cription of Strate	·	Depth	s	ample	M.C.	LI	/PL/PI	Class'n	T	Water & Casing Details
C	FILL	unprior or otract			12	3 Кеу	1	Co	re Rec'y	10103511	1	Started 6, 6, 73
	Mixture of dar	k brown topso	il			1.				1		1
	brick fragment	s, broken sto	ne .	0.7	Ш	В	59.7			-		
1	FILL Black ashes, g	ravel and cop	bles.		Ē	В	(19.8)	Gr	ading	GP		
	Medium density clayey silty	dark grey		1.2	HV N E N	В	20.4	Gr	ading	G₽		6672
	Soft mottled		rown	'•7		U4	25.9.	40	M0/40	a.		6.6.73 7.6.73
. 2	_ sandy CLAY wi	_					22.0	42	/23/19	CI		
	with a band of	orange/brown	SAND,		HI	КJ	37.4		•			
	with shale fra	-								1		
2	2.2m to 2.4m	·		3,0				<u> </u>				
3	Medium density	1			enge of Lauren	<b>U4</b>	-		•	SF/CI.	İ	
	brown SAND wit	-	stones.		Ě	SP	-				N = 28	
4	Lenses of very						i	<u> </u>				
	Cccasional cot	DD1es.	<del></del> -	4.2	Ę,	В	10.7	Gr	ading	SF		
	Medium density	y becoming den	se	1		SP	10,8	Gr	ading	SP	N = 32	
5	brown					В	22.5	ļ				
	silty fine to with occasions					1						
	of SILT	ir danus				SP	23.9		`		II = 24	
6	Fragments of s	shale .				В	<u> -</u>	Gr	ading	SF		
	}					KJ	22.9			1		
	<u> </u>			_		SP	19. 7				N = 28	
7								ļ		_		_
				Ī	H	KJ	18.6			1		
	• 			7.6		SP B CP	18.3	Cre	ading	SF	ror 250mm	7.6.73
	Hard yellow/or				Ħ	KJ	5.5				N = 50 for 150mm	7.6.73 8.6.73 BH. 'Dry' OWC.
8	_ coarse grained	SANDSTONE .		8.3								
,	Boulder or bed	lrock .	_	'						i		
- 9										-		
	ţ				$\  \ $	1						
10		•		<u> </u>	Ш	<u> </u>	<u> </u>	<u> </u>				
	STRENGTH	TEST RESU	JL.TS		*				- · · · · · · · · · · · · · · · · · · ·			
	Depth of Sample	Bulk Dens'y (kg/m3)	Dry Dens'y (kg/m3)	M.C.	C	omp, St	ress	Cohes		Ø	· · · · ·	Remarks
	1.50 - 1.95	1950	1550	(%)	+	(kN/m² 34		<u>(kN/n</u> 17	n21		20 11 0 41	
	1.50 - 1.55	1 350	1550	25.9							38 U.C.T.	(n)
							<u> _</u>					
							<u> </u>					
					$\top$							
W		-	<u> </u>		+-	·	·					
					∔-							
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			<u> </u>									
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	COMPACTION	701 V VID O.1	HER TEST R	ECILI			_ <del></del> _	<del></del>			<u></u>	
		1	Dry Dens'y	M.C.	Т		Air Io	T	SO ₃			
	Depth of Sample	Compaction	(kg/m3)	(%)	^{\$}	i.G.   _V	oids C.	B.R.	gm/litra	pH		marks or other tests
					_							
	1									-		
					-							
	GENERALI	REMARKS	<u>!</u> _	<del></del>	<del>بيات</del>	l_	<u> </u>		<u> </u>			C87A 16272 TayP
												,

tric		LANCAS	HIRE COÜ	NTY C	ดบเ	NCIL					JOB N	o <del>3</del> 67
. i			E DATA SHE				1					o 62
	SCHEME	.56 DIVERSION									DEPTI	f
	LOCATION C	HAINAGE 2416m	OFFSET 29m W	est .					•		GROU	ND LEVEL 206,4
	Desc	cription of Strate	im	Depth	S	ample 3 Kev	M.C		_L/PL/PI ore Rec'y	Ciass'r	N Value	Water & Casing Details
0 _	Loose mottled clayer, silty,	· ·		0,1	PRACE	<b>У</b> 4	30,	<del></del>		SI*		Started 26,11.73
1	SAND Dense dark gre	v-brown	<del> </del>	1.3		KJ	-			<del>- </del>		S.W.L. 0.5m (10 mins) 26.11.73 S.W.L. 1.0m
2	clayey silty s			2.1	Section 1	SP	-			GF	N = 33	Casing = 1.4m 27.11.73 S.W.L. 0.7m
					(Percent Section (Section )	B	-	Gr	ading	SF		
3	Loose											
4	dark grey-brow silty fine to		•						···			
	SAND				E/Out	SP	-				N - 4	
5	- - -	-								•		
6	<del></del>	,		į	1,200	В	_		1			
7	Cotumated	•			alvecal lateral							27.11.73 5.W.L. 6.0m Casing 6.8m 28,11.73 5.W.L. 5.6m
,	Soft					B U4	34.	1 70	/28,/42	CH/M	L	W.E. 7.7m
dark grey-brown  varved silty C							-					S.W.L. 1.8s (35 mins) 28.11.73 S.W.L. 1.8m Casing - 6.8m
9		, 		9.0	(8-2-3)	U4	33.	7				29.11.73 S. V.L. 0.6m 29.11.73
												Casing 8.8c S.W.L. 0.6m O.W.C.
10	STRENGTH	TEST RESI	II TS		11	<u></u>	<del></del>		······	<u> </u>	<u> </u>	
	Depth of Sample	Buik Dens'y (kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	Co	omp. Si (kN/m	17සS	Coh	esion /m2)	ø		Remarks
	G.L 0.45	- (Kg/ms.	**	30.2			-	. (K.)	111121		Topsoil a	
	7.30 - 7.75	1920	1435	34•1	<del> </del>	<u>7</u> 8	$-\dagger$	19	<del></del>		100 U.C.T	•
	-8 <u>.55</u> - 9.00	1900	1420	33. 7		46		23		-	100 U.С.Т	•
							-					
											·····	
	·											
	COMPACTIO	TO CIVA NC	HER TEST		TS							
	Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	S	.G. ,	Air Voids	C.B.R	SO ₃	рН	Re	emarks or other tests
	C.5	-	-	-	-	-	-	_	Nil	6.1	Water sam	ple
	GENERAL	REMARKS										C87A L6272 fayP

Metric		LANCAS	HIRE COUN	TY CO	าบด	VCIL.				,	JOB N	o <u>367</u>
•			E DATA SHEE									o 63
	SCHEME	4.56 DIVERSIO	N - HASLINGDEN	TO ACCRI	NOTO	)N					DEPTH	11.8 m
	LOCATION	CHAINAGE 2454	a OFFSET 15a W	est				٠			GROU	ND LEVELm
0	Desc	ription of Strati	um	Depth	S 1 2	ample 3 Key	M.C.		L/PL/PI ore Rec'y	Class'n	N Value	Water & Casing Details
	A little topso		gravel, glass.	0.4	E	B	29,1			ŀ		Started 15.9.73
1	Loose mid gray mid gray-brown	to	-		2	3	64.2	Gra	ding	SU 2t		
	medium SAND with plenty of	PEAT			Pri/zai	KJ	69.5	ì				Slight W.E. 1.5m
2	inclusions .				10.00	U4	46.3					
	Firm mid grey-l		·····	2.6		KJ KJ U4	95,8 12,3 (11,3	1	ding	SF		
<b>3</b>	silty very sand	e stones			ž	кј	15.7			CL		
4	and lenses of a	ret SAND.								-	<u> </u>	
	Very dense			4.5		¥4						W.E. 4.5m S.W.L. 1.8m
5	dark grey-brown				5	SP, B	-			GW	N = 50 for 50mm.	After 15 mins
6	with cobbles.											
				\ \hat{\sigma}								15.9.73 S.W.L. 4.2m Casing 6.0m
7	Soft to firm mid brown			7.2		КJ	32.8					17.9.73 S. W. 4.3m
	wary silty CLA	Soft to firm mid brown very silty CLAY. Occasionally varved.			1	<b>Ū</b> 4	30.2	70/	28/42	CH/MI	,	S.O. 7.2m
8	Occasionally va		<b>s</b> .					<del>                                     </del>				
9 .	-			9.0		KJ	29.4					
	See Sheet No. 2				ersite.	U4	34.7					
10	- -		<del>- , </del>		<u>H</u>	KJ	35.7	<u> </u>		сн/мі		
	STRENGTH	-		•.					<del></del>	·	<del></del>	
	Depth of Sample	Bulk Dens'y (kg/m3)	Dry Dens'y (kg/m3)	M.C (%)	C	omp. St. (kN/m²	recs )	Cohe (kN/s	sion (n2)	Ø		Remarks
	1.60 - 2.05	-	-	46.3	1	-		-		-	Sand	
	2.70 - 3.15	•		(11.3)	 - <del>\</del>	-		-		-	Sand and g	
	7.30 - 7.75	1860	1430	30.2		26		13	 	-	100 U.C.T.	
	9.00 - 9.45	1875	1 390	34.7		40		20		-	100 U.C.T.	
						-						
ا المنسور	00110102	)										
			HER TEST R	ESULT M.C.			Air C		SO ₃	-11 T		made or who seems
	Depth of Sample	Compaction	(kg/m3)	(%)	5		oids C	.B.R.	gm/litre	pH p	<del></del>	marks or other tests
	.1,8	<u>-</u> .		-		-		<u>-</u>	No Trac	e 7.0	Water samp	016
	CENTERAL	A FAMA DICC										
	GENERAL	CAUAINID L										C87A L6272 TayPt

1	Metric		LANCAS	HIRE COU	NTY C	DUNCI	L				JOB N	o
i				E DATA SHE							B.H. N	o63
-		SCHEME									DEPTH	11.8 m
;	<b>;</b>	LOCATION	DHA INACE 2454m	OFFSET 15m	VEST					_	GROU	ND LEVEL 206.8 m
-		1	crintion of Stratu	ım	Depth	Samp 1]2]3  K	le M	.c.	LL/PL/PI Core Rec'y	Class'n	N Value	Water & Casing Details
1	10	Soft to firm								_		
		mid brown warved silty	CIAV									·
4	- 11	4				H     x	J 3	5.8		<del></del> -		
					11.8	U	ī4 3	6.7				17.9.73 Casing: 11.0m S.W.L. 0.6m 0.4.C.
	12	-					.  -	$\top$				
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		<u>}</u>				-				-		· · · · · · · · · · · · · · · · · · ·
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		<u>-</u>			-							
4		<u> </u>										
4								<u> </u>				
		STRENGTH				.,		<b></b>				
	•	Depth of Sample	Buik Dans'y (kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	Comp (kN,	. Stress /m2)	Co (k)	hesion V/m²)	Ø		Remarks
1		11.30 - 11.75	1880	1 380	36.7	6	6 		33	-	100 U.C.T.	
1						-		<u> </u>				
,					_			1		_		
ı i		<u> </u>		·		1		1				<del>.</del>
1 4 1 1 2 2								<u> </u>				
. 3												<u> </u>
1								—				
1								<u> </u>			<u> </u>	
: i	9 % • <del></del>											
: † :		COMPACTION	TO UNA NO			<del></del>	1	1		1-		
-		Depth of Sample	Compaction	Dry Dens'y . (kg/m3)	M.C. (%)	S.G.	Air Void:	C.B.F	SO ₃	рН	Re	marks or other tests
		<del></del>					ļ <u>-</u>	<u> </u>	1 1			
								<u> </u>				
ļ	•			,				<u>. </u>				
1		CENEDAL	DEMAA DUC				_					C074 14070 1 Pro

Metric	,	LANCÁSI	HIRE COU	INTY	cou	JNC	IL					JOB No	o. 367
	•		E DATA SHE										o
·	SCHEME	a.56 DIVERSION										DEPTH	7.3 m
;	LOCATION	CHAINAGU 2473m	OFFSET 17m	EAST								GROU	ND LEVEL212.1 m
	Desc	ription of Stratu	កា	De	pth 1	Samı 231 i	ole Cev	м.с	L	L/PL/PI ire Rec'y	Class'n	N Value	Water & Casing Details
9	PTLL				1		P	13:5		,		N = 10	Started 13.9.73
	Black ash and			•	8	֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓	•	'''					
1	firebrick.			1.	0								
	FILL			''									
	Soft mottled mid brown/mid	grev-brown			25.24h		P	18.0	Į			N = 32	
2	silty sandy c					֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓	,	1 /					
	with gravel								ļ				13.9.73 BH. 'Dry' Casing 2.3m 14.9.73 BH. 'Dry'
•	size stones. Some mid brown							İ					14.9.73 BH. 'Dry'
3	silty very cla				200		P	16.2	<u> </u>	<del></del>		N = 21	
	_		•			B	:	11.2					
4	_								1				
				İ									
					28	ט		10.5					
5	<u>*</u>				. 4	B		22.4	<u> </u>	<del></del> -	-		
	Loose grey-bro			5.	2	บ	4	25.6	Gr	ading	SF		
6	slightly claye; mediwm SAND.	y silty											
	More clayey in parts and												
	Cocasionally o	rganic.						}					WE. 7.00 rose to 0.7m (15mins) 14.9.73 SWL. 5.9m
7	Very dense mid	brown silty s	andy GRAVEL	6.	12	U		(18.	•	ading	GC	N = 50	,
	with a yel/ so: Saturated	sandy	CLAI Dinder	7.	3					auxie		or 100mm	Casing 6.0m SWL, 6.0m OWC.
					`								
6	-							<u> </u>	-				
				}				1					
9	- -												
7	-												
	-				j						ļ		
10	- 	·				$\coprod$		<u> </u>				<u> </u>	
	STRENGTH			1				<del>-</del> -	<del></del>	. 1			
	Depth of Sample	Buik Dens'y (kg/m3)	Dry Dens'y (kg/m³)	M.C (%)		Com:	p. St V/m ²	(CSS	Cohe (kN/i	m2)	Ø		Remarks
	4.50 - 4.95	-	-	10.5								Peat and s	andstone gravel
	5.25 - 5.45	-		25.6		-			<b>.</b>			Clary san	d and gravel
	6.75 - 6.20	-	<u>.</u>	(18.1	)	_			-			Silty sand	and gravel
:													
			1										
								$\neg \uparrow$				<del></del>	
				<del> </del>						<del></del>			
E's er sast	COMPACTIO	ON AND OT	HER TEST	BEGI	<u></u>	<del></del>		<u></u>	<del></del>		<del></del>		
	Depth of Sample	Compaction	Dry Dens'y	M.C	5.	\$.G.	i	Air	Ç.B.R.	503	Hq	Ρ.	marks or other tests
	G.L 0.75	D4.5 C.B.R.	(kg/m3) 1710	17.0			┰	/oids		gm/litre	<u> </u>	C.B.R. on	slightly clayey
		υ-1.7 ∪. D. R.		17.9			+		5.8%	<del>  -</del> <del> </del>	-	C.B.R. on	
	1.50 - 2.50	S. C.B.R.	1865	14.7	<u>'</u>		+	-	2.76		-		l size stones
	CENEDAL	1		<u> </u>				<u></u> .		<u> </u>			607
	GENERAL	ここい さいじき											CB7A L6277 TayPts

 $\Box$ 

Metric	T. S	LANCAS	HIRE COUN	ITY C	าบด	ICIL					JOB No	, 367
	<b>-</b> .	BOREHOL	E DATA SHEE	T No	1	OF1						64A
	SCHEME:	A.56 DIVERSION	N - HASLINGPEN	TO ACCR	LINGTO	)N				••••	DEPTH	3,4 m
	LOCATION	CHAINAGE 2425	n Offset 23m i	ca st				٠			GROU	ND LEVEL 212.5 m
	Desc	cription of Stratu	ım	Depth		ample Bi Key	м.с.	LL	/PL/PI re Rec y	Class'n	N Value	Water & Casing Details
Ø 0	Black TOPSOIL			<del> </del>		KJ	22.5	001	e nec y	1		Started 6.6.73
<i>\pu</i> .	stones and cob	bles.		0.5	13							
1	Soft friable yellow-brown s	andy LOAM	-	1		U4	33.3	ļ		cı		
•	. Medium density			1.0	HI	КJ	20,3					
	brown silty fine to	madium CLND	•		3	U4	_	C	ding	SF	i i	·
2	with some grav		9,					Ura	OTTHR	J SF		
	cobbles and an		•			KJ SP	14,8				N = 18	
					8							
3					1	U4	13.7					
•				3,4	7	CP. B	•	1	ding	GF	50 م لا	6.6.73
. 4	Sandstone Boul	der?					''''		<b>C</b> -			BH 'Dry' O.W.C.
	<u>-</u>									<del>                                     </del>	ļ <del>-</del>	<del> </del>
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5											]	
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6	• 							<u> </u>				
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. 7	_						<u> </u>			+		·
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9	· `											
	_						ŀ					
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10	0755110711				<u> </u>	<u> </u>	<u> </u>	<u> </u>		<u> </u>	<u> </u>	
	STRENGTH		Dry Dens'y	M.C.		mp, St		Cohes	ion	·		
	Depth of Sample	Bulk Dens'y (kg/m3)	(kg/m3)	(%)		lkN/m²	)	(kN/r	12)	Ø		Remarks
	0.50 - 0.95	-	-	33. 3		-		-		-	Soft sandy	loam
				,	╝							
					<u>i</u> _	_			 			
~ *									1			
	*****			•	1							
					- <del> </del>		$\overline{}$		-			<del></del>
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	<u></u>											
Company of the	0011212	] ]	UED :=====	\FQ: · · ·	<u> </u>			<del></del>				
	COMPACTION		HER TEST F	RESUL [*] M.c.		_	Air o	- 1	SO ₃	<del></del>		
	Depth of Sample	Compaction	(kg/m3)	(%)	S	.G. v	oids C.	B.R.	gm/litre	рH	Rei	marks or other tests
											<del></del>	·
			<u> </u>		_ _		_					
				···								
	GENERAL	REMARKS										C87A L6272 TayPtq

Metric	·	LANCAS	HIRE COUN			JOB No	36'1					
		BOREHOL	E DATA SHEE	ET No	1	OF <u>1</u>						o65
,	ľ	BOREHOLE DATA SH  SCHEME			10.T.O	ł	••••••			•		6.9 m ND LEVEL213.1 m
0	Desc	Description of Stratum  ash.  So firm, nottled orange/mid grey/ rown silty very sandy clay gravel size stones and black ash.  Sith very soft mid grey-brown CLAY gravel size stones.  STATE  CRAY  STATE  CRAY  STATE  CRAY  STATE  CRAY  STATE  CRAY  STATE  CRAY  STATE  CRAY  STATE  CRAY  STATE  CRAY  STATE  CRAY  STATE  CRAY  STATE  CRAY  STATE  CRAY  STATE  CRAY  STATE  CRAY  STATE  CRAY  STATE  CRAY  STATE  CRAY  STATE  CRAY  CRAY  STATE  CRAY  STATE  CRAY  STATE  CRAY  CRAY  STATE  CRAY  CRAY  CRAY  CRAY  STATE  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY  CRAY		Depth	Sa 1 2 3	mple Key	M.C.	L! Co	L/PL/Pl ore Rec'y	Class'n	N Value	Water & Casing Details
U	F	, _{/~}			D.W. LE		12.5				N ÷ 13	Started 13, 9, 73
1	Soft to firm, mid brown silt	y very sandy	clay	0.8	- Prince	SP B	15.7				N = 15	
	L	soft mid gre	y-brown	2.0	overes nestal lesson sayon	U4	39. 3	12	20/39/81	СН		
3	Some gravel ai	ze stones.	-Fi11?	3.0	1	B	27.5					,
4	dark groy silty very sar	-			1 225/44	U4 KJ	13.7	34	1/17/17	CL		
5			٠.		Byatrata	U4 .	16.7 19.2					WE 4.5m SWL 4.4m(15mins,)
6	_ sandy GRAVEL	andy GRAVEL with a				SP B	  - 	Gr	ading	GC	N = 7	
7	very soft sand	very soft sandy CLAY matrix.	ix.	6.9	228724	SF	13.2				N = 8	13, 9, 73 Casing c, 5m SWL 5, 2m O/C.
8							   		ļ			
9												
10												
10	STRENGTH	TEST RESU	JLTS			<del>'</del>					<u> </u>	
	Depth of Sample	Bulk Dens'y (kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	Co	mp. Str kN/m²	ess	Cohe (kN/r	sion m2)	Ø		Remarks
	2.00 - 2.45		-	39.3	-	-				-	Peat	
	2,50 - 3,00	<del></del>	<del> </del>	26.7	-	48	1	24			38 T.C.T.	- <del>-</del>
	4.50 - 4.95		<del>                                     </del>	20.1		60 33		30 16			38 U.C.T. 38 U.C.T.	
		2145 1840									<del> </del>	
<del>Professional</del> del la	COMPACTION		 [S									
	Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	S	.G. _V	Air oids	.B.R.	SO2 gm/litra	pH	Rei	marks or other tests
					-							
	GENERALI	LREMARKS	<u> </u>	<del></del>	1				<u> </u>			C67A L6272 TayPi

etric	•	LANCASI	HIRE COU	NTY CO	DUNCIL			u		JOB N	o <u>367</u>	. •
	•	BOREHOL	E DATA SHE	ET No	1 oF	1			•	B.H. N	o66	
	SCHEME	A.56 DIVERSIO	N = HASLINGDE	N TO ACCE	ligton						ł 4.Ωn	
	LOCATION	CHAINAGE 2559	m OFFSET 4m	Vesi			•			GROU	ND LEVEL 211.6	n
1 - 2 - 3 - 4 - 5 - 6 - 7 - 8 - 9 - 10 - 9 - 10 - 9 - 10 - 9 - 10 - 9 - 10 - 9 - 10 - 10	Desc	ription of Stratu	m.	Depth	Sample 1 23  Key	M.C.	L	L/PL/PI ore Rec'y	Class	n N _. Value	Water & Casing Details	5
۰		TOPSOIL		0.1	U4	32.1	<del></del>	<i>310 11.00 y</i>	<del>                                     </del>	<u> </u>	Started 14.9.73	_
ŀ	FILL . Black organic :	BOREHOU  A.56 DIVERSI  ATION CHAINAGE 255  Description of Strat TOPSOIL  organic loam  soft to firm grey very sandy clay lenses of clay sand dark grey very sandy CLAY with eavelly SAND loose dark grey graded sandy GRAVEL a very soft CLAY matr  ENGTH TEST RES  of Sample  Buik Dens'y (kg/m3)  0.40  1775  1.85  2295		0,6	KJ	78.4	- 1					
	FILL		-	•••		,,,,	`			,		
1  -	Very soft to f	irm					-					
}	dark grey			1	h	12.5 13.7	5		CL		<u>.</u>	
, [			-	,	U4	13.7	7   Gra	ading	SW		W.E. 2.0m (Slight)	
. 2	gravelly sand				L KJ	38,6	5		1	-	,,	_
	Soft dark grey			2.4	KJ	19.3						
,			lenses		04	(13.6 16.0		ading	SW			
_ ' ⊧			<del></del>	3.1		10.0	1				W.E. 3.1m	
ŀ	=	- ·		-	SP. I	(13.4	Gra	ading	GC	N = 4	S.W.L. 1.93 After 5m	in
, F			χ.								   14.9.73	
4	<u> </u>			4.0		i— – -	1				Casing 2.5m	_
ŀ				1							S. W. I. 2. 10 O. V. C.	• •
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10						<u> </u>			<u> </u>		<u> </u>	<u>-</u>
	STRENGTH	· · · · · · · · · · · · · · · · · · ·			· <del></del>	· <del></del>			.,,-		·	
	Depth of Sample	Buik Dens'y (kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	Comp. S	ress 2)	Cohe (kN/	sion m2)	ø		Remarks	
	G.L 0.40		1345	32,1	58		29		_	38 U.C.T.	(R)	
-	1.50 - 1.85		2040		69		·	$\neg \neg$				
<u> </u>			-	12.5			39		-	100 U.C.T.		_
]-	2.50 - 2.75	2185	1885	16.0	56		28			38 U.C.T.	(R)	—
]_												_
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Γ			. —									
F				<del></del>							······································	_
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<u> </u>											<del>i.</del>	_
<u> </u>	COMPACTIO	N AND OT			rs			<del>, , ,</del> ,				
1	Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	S.u.	Air Voids C	.B.R.	SO ₃	рH	Re	marks or other tests	
	1.9		-	-	-	-		No Trace	6.5/	Water sampl	le ·	
-					-  -	<del></del>	•	<del>                                     </del>	-/•V-			
				l	1 1	!		1 1	1			
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	Metric	,	LANCAS	HIRE COUN	ITY C	OUN	VCIL	_				JOB N	o¥7
ı				E DATA SHEE							•		o 66a
:		1 JUNIE		N - HASLINGDEN								DEPTH	1
:				AINAGE 2563m ( INAGE 48m OFFS			EST	_				GROU	ND LEVEL <b>21.73</b> m
		Desc	cription of Strate		Depti		ample 3 Key	М.С	. C	L/PL/Pi ore Rec'y	Class'i	n N Value	Water & Casing Details
	. 0	FILL Very loose dark pieces of broke	grey-brown si	ilty sand, with	0.1	15-24-2	SP	19.	5			N - 1	Started 25.6.75 Uncased hole.
	1	Soft mottled mid gre silty sandy CL becoming very s	AY	1		RXMA	U4 KJ	26. 26.	- 1	2/18/14	CL		
		Medium dense	· · · · · ·		2.7	Paresti	U4 KJ	16, 19.	- 1	•	sc		25.6.75 SWL. 2.7m 26.6.75 SWL. 2.7m
	3	dark grey-brown clayev silty S with fine to me	AND	ze stones.		Keta	SP	-				N = 14	WE, 3,4m (Slight)
	4	··			4.1	Ĭ							26,6,75 SWL, 4,1m
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i	-	STRENGTH	TEST RESU	JLTS	<u> </u>								<u> </u>
14		Depth of Sample	Buik Dens'y (kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	Co	omp. S (kN/n	Stress	Çoh (kN,	esion /m2)	ø		Remarks "' '''
•		1.30 - 1.75	1970	1560	26.6		56			20	-	100 U.C.T.	
. 1		2.30 - 2.70	2170	1860	16.3		41			20	-	100 U.C.T.	
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-		COMPACTION	TC DNA NC	HER TEST F	RESUL	TS				<del>_ =!-</del>	<del></del>		
!		Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)		. <b>.</b> .	Air Voids	C.B.R	SO ₃	рН	Re	marks or other tests
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1 -		GENERAL!	REMADUS						<del></del> -	<u> </u>			CB7A L6272 TayPig
- 4		I OFNEUWF:	16:141411100										COLUMN TOTAL MARKS

<b>Metric</b>	<del> </del>	LANCAS	HIRE COU	NTY C	ขา	ICIL					JOB N	o	
			E DATA SHE					-		•		o 660	
	I OUT IN THE TAXABLE	.56 DIVERSION	- HASLINGDEN	TO ACCRI	NGTO	Ň					DEPTH	٠	18.8
	LOCATION S	MAIN ROUTE CHA SIDE ROAD CHAI	TNACE 2647m (	PPSET 97 T 390 WE	b WE: ST	ST					GROU	ND LE'. EL	235.8 m
0		cription of Strate	<del>.</del>	Depth	Si	ample Ker	М.		LL/PL/P! Core Rac'y	Class'r	N Value	Water & C	asing Details
1	Dark orange-browith gravel size Firm dark orange CLAY with grave Loose mid brown	e stone. e-grey-brown l size stones	silty very sam	0.6 0.8	الخوصونة	U4 KJ	15 17			SF CL SC		Start 1d, 24, 200 nm, 9 ca:	
	Occasional grav	el size stone	S.	1.5	H		11	.7					
. 2	Firm dark grey-brown silty sandy ver				#IZE	SP B	12 14		28/16/12	CL	N = 23		
3	_			i.	H		12	.5					
. 4						SP B	12				N = 26		
	Ma 35 m James A	lo al- human		4.5			74	.8					••
5	Medium dense, de layered, slight sandy SILT and clayey fine to Partings of soi	ly clayey d slightly medium SAND. t silty clay.			- Saveri	SP	В 17	.6 G	Frading	ML Sc ch	li = 10	24.7.75 BH. Casing 5.22 28.7.75 BB.	'Dry'
6	_Occasional ston	es.	· · · · · · · · · · · · · · · · · · ·	6.2				,	<u></u>				_
7	dark grey-brown silty sandy ver	stiff lark grey-brown silty sandy very stony CLAY becasional cobbles.			72	SP	B 10	2	28/16/12 Frading	CL CL	N = 16		
8	Medium dense, 1	ayered	AID.	7.6	(E) (E)	SP	14				N = 13		
• .	fine and very s and mid brown fine to medium	•	ND			В	13		rading	sf sv			
9	- See Sheet No. 2			9.0								WE. 9.8m (3	Slight)
10	STRENGTH	TECT DIG	U TC	<u>l</u>	A	<u> </u>							
	Depth of Sample	Bulk Dens'y	Dry Dens'y	M.C. (%)	Co	omp. S	Stress		hesion	ø		Remarks	
	0,60 - 0,80	(kg/m ³⁾ 2130	(kg/m3) 1815	17.3	+	(kŇ/n 82	114)	41	1/m2)	-	39 U.C.T.		
	2.05 - 2.50	2130	. 1905	14.6	+	91		47		-	38 U.C.T.		
-	3.60 - 4.05	2180	1900	14.8		108		54			38 U.C.T.	· · · · · · · · · · · · · · · · · · ·	
	7.20 - 7.65	2175	1950	11.8	-	194		97		-	39 U.C.T.		
	7.20 - 7.65	2150	1955	11.3		<del>"</del> .		17		37°	Quick S. B.	on matrix	
					-								
New W													
warran	COMPACTION	TO DNA NC	HER TEST	RESUL	TS		· · · · · ·						
	Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	s	.ს.	Air Voids	С.в.я	SO3 gm/litre	рН	Re	emarks or other	tests
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	ļ	<b></b>						<b> </b>				<del></del>	<del>-</del>

tric	T- 30	LANCAS	HIRE COU	NTY CO	UN	ICIL						o <u>36</u> 7
		BOREHO	E DATA SHE	ET No?		OF?.					B.H. No	o <del>.</del>
	SCHEMEg	A.56 DIVERSIO	N - HASLINGDEN	TO ACCRIN	GT0	N					DEPTH	18.8
	LOCATION	MAIN ROUTE CH	Alnage 2647m ( INAGE 35m OPFS	OFFSET 97m	±WΞ πor	ST					GROU	ND LEVEL238.81
	Desc	cription of Strat	· · · · · · · · · · · · · · · · · · ·	Donth	Sa	emple Key	Mi.C		LL/PL/P1 Core Rec'y	Class'	n N Value	Water & Casing Detail
10	Medium dense, 1 dark brown,					SP B			rading	SF/HI	N = 19	28.7.75 SWL. 10.2m Casing 9.8m
11	-mid prown		SILT, and					-	· ·			29.7.75 SWL. 8.9n
	very silty fine	SAND.		11,6	. !							
12	}				F.		<u> </u>	+		1		
	dark gray-brown					SP	29.	•	21		N = 8	
4.0	clayey randy S with thin parti					В	"	3	rading 0/21/9	CL		
13	soft silty CLA							$\top$				· ·
	and wery silty											1
												S.O. 14.0m
14	<del></del> •		•			SP	24.1	<del> </del>		ML/Ci	N = 22	<u> </u>
						В	34.0	- 1		F SF		
4.00	-									"		
15	- 03723700			15.2		K.j	10.4	1		SU	1	29.7.75 BH. 'Dry'
)	Very dense, dar silty medium	k grey brown, coarse SAND/	layered,	',"			'•			sċ		Casing 14.4m 30.7.7 BH. 'Dry'
16	clayer silty fi	ne SAND/ .			Н			İ	•			JO. 72 17 En.
10	mailty fine to me	edium SAND,	ien otaman		3	SP	8.7	<del></del>			N = 50	
		OTOM RIGHAT P	Tee Stones.	16.4		В	13,6	5		-	for 240mm	
	Stiff						1			İ		
17	_dark grey_brown silty very sand						13.2	-				
	CLAY.	y, very scony	,									30.7.75 BH. 'Dry' Casing 16.0m 31.7.75 BH. 'Dry'
							,					31.7.75 BH. 'Dry'
18	_							<del></del> -	<del></del>			4.8.75 BH, 'Dry'
	-					SP	-				N = 50 for 210mm	
		·····		13,8		В	12.	3   G	rading	Cr	TOP ZIUMA	4.8.75 BH. 'Dry' Casing 16.0m
19								╅╴		<del>                                     </del>		Casing withdrawn.
	-	~					1					6.8.75 BH. Collapsed to 9.2 SWL, 9.1m
20	<u>[</u>											SWL. 9.1m
20	STRENGTH	TEST RESU	JLTS	<del></del>		. <del>,-</del>						
	Depth of Sample	Bulk Dens'y (kg/m3)	Dry Dens'y (kg/m3)	M.C. (%,	Co	mp. S: kN/m	tiens   2)	Coh (kN	iesion /ລາຂາ	ø		Remarks
	18.35 - 18.90	2270	1970	15.3				1	05	25°	Quick S.B.	on matrix
	10000									-		
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	,			<del></del>	<u> </u>							
	COMPACTION	TO DNA NC	HER TEST F	RESULT	S							
	Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	s.	G.	Ai, Voias	R.R.C	SO ₃	рН	Rei	marks or other tests
		<del></del>	109/110/	<u>, ///</u>	<del>                                     </del>		- 0103		3.7,7,1119			
	<u> </u>	<del> </del>	<del>                                     </del>	<del>-</del>	<del> </del>							· · · · · · · · · · · · · · · · · · ·
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	GENERALI	REMARKS										C87A L6272 Tay

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- 1		LANCAS	HIRE COU	NTY CO	DUNCIL						) <del></del>
		BOREHOL	E DATA SHE	ET No	1 OF	1					o
SCH	ЕМЕ				INGTON	• • • • • • • • • • • • • • • • • • • •					1.8
LOC	ATION	CHAINAGE 2579	m OFFSET 12m	FAST	·	<del></del> ,	٠.	· · · · · · · · · · · · · · · ·	<del>_                                    </del>	GROUI	ND LEVEL?13.5
0	SCHEME A.56 DIVERSION - HASLI LOCATION CHAINAGE 2579m OFFSET  Description of Stratum  FILL Black clinker ash and broken stone.  FILL Weathered fine grained sandstone fragments in a soit clay matrix  FILL Hard fine grained clayey sandsto  FILL Very coft mottled orange/grey si clay with sandstone fragments.  Firm light grey silty CLAY  STRENGTH TEST RESULTS  Depth of Sample Rule Dens'y Dry Dens (kg/m3)  Depth of Sample Rule CLAY	ım	Depth	Sample 123 Key	- 14.0	Co	L/PL/PI ore Rec'y	Class'n	N Value	- Water & Casing Details	
FILL Black FILL fragme mottle	Weathered nts in a d brown/o	fine grained soft to firm range silty cl	sandstone ay matrix.	0.4							Started 9.10.75
FILL clay w	Very coft	mottled orang	e/grey silty	1.2 1.5							
Firm 1				1.8		-	ŀ				9.10.75
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STR	ENGTH				,						
Depth	of Sample	Bulk Dens'y (kg/m3)	Dry Dens'y (kg/m³)	M.C. (%)	Comp. S (kN/m	tiess (2)	Cohe (kN/	sion n ₁ 2)	Ø		Remarks
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CON	IPACTIO	ON AND OT	HER TEST I	RES!II T	<u></u>						
	of Sample	Compaction	Dry Dens'y	M.C.	150	Air	C.B.R.	SO ₃	рН		marks or other tests
			(kg/m3)	(%)		<u>Voids</u>		gm/litre	F	1101	
<del></del>	<u> </u>		1		<del>                                     </del>			<del>  </del>		<u> </u>	
<del>-</del>		<u></u> :			<del>  </del> -			<del>   </del>			
l		L REMARKS		<del></del>	<u> </u>		· · · · · · · · · · · · · · · · · · ·	<u> </u>			C87A L6272 TayP

Metric			HIRE COU			t	* *		JOB No	o. 367 66E
-	SCHEME	A.56 DIVERSION	.E DATA SHE! N = HASLINGDEN	E I NO; I TO ACCRI	OF Igton					0 1
	LOCATION				• • • • • • • • • • • • • • • • • • • •	••••••		•••••		ND LEVEL .213.6m
		cription of Stratt		Depth	Sample 123 Key	M.C.	LL/PL/PI Core Rec'y	Class'n	N Value	Water & Casing Details
0	FILL			<del> </del>	123 Key	1	- Core res,	_		Started 9.10.75
	Black clinker Soft fine grain			0.5						
1	_			0.7				<del> </del>		9.10.75
2		•								t 
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_	STRENGTH			M.C.	Ca C1		Cohesian			
•	Depth of Sample	Bulk Dens'y (kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	Comp. St (kN/m²	(2)	Cohesion (kN/m²)	Ø		Remarks
			-		<u> </u>					
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	COMPACT	201 0010 07	LLE D. TEGT	00011	<u> </u>	<u> </u>			<del></del>	
	COMPACTION Depth of Sample	ON AND OT	Dry Dens'y	M.C.		Air C	_{B B} SO ₃	рН		marter or not an area
	Deput of Sample	Compaction	(kg/m3)	(%)	3.0.   \	oids C.	.в.R. SOз gm/litre	hu	He-	marks or other tests
					<del>                                     </del>					
				<del>,</del>	+ +	<del></del>		<del>-  -</del>		
	GENERALI	REMARKS	<u> </u>	nchine ev	cavated t	cial mid				CR7A L6272 TayFig
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	LANCASHIRE COL  BOREHOLE DATA SH A.56 DIVERSION - HASLING LOCATION CHAINAGE 2614m OFFSET 1:  Description of Stratum  FILL Black clinker ash and broker stone  Soft to medium hard, light brown, cross bedded fine grained SANDSTONE. Bedding sensibly horizontal. One open bedding plane is infilled with soft clay, One open vertical joint.  STRENGTH TEST RESULTS  Depth of Sample Bulk Dens'y Dry Dens'y (kg/m3)  Chair Dry Dens'y (kg/m3)				4				o367
201515	BOREHO A.56 DIVERS	LE DATA SHEE ION = HASLINGDEN	T No TO ACCR	OF TNGTON					o. <u>· 66</u> r 2.7
1	BOREHOLE DATA SH A.56 DIVERSION - HASLING SCHEME	14m OFFSET 11m	EAST	************	********		••••••		
LOCATIO		·····	Depth	Sample	i4.C.	LL/PL/PI	Class'n	<del></del>	Water & Casing De
O FILL Black			- Bopon	123 Key	+	Core Rec'y	-		Started 8,10.75
fine graine  Bedding sens  One open be	, cross bedded d SANDSTONE. ibly horizontal. dding plane is in	nfilled	0.5						W.E. 0.8m (311ght
One open ve	rtical joint.								
			2.7						trial pit making
3 -	BOREHOLE DATA S A.56 DIVERSION - HASLI  HEME								water slewly on completion.
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STRENG	TH TEST RES	111 TS			<u> </u>		<u> </u>		<u> </u>
<u> </u>			M.C. (%)	Comp. St	2)	Cohesion (kN/m2)	o	DEPTH	Remarks
						<u> </u>			
COMPAG	TION AND O	THER TEST P	RESULT	S		<u> </u>	<del></del>		·
	₁₁	Dry Dens'y	M.C. (%)		Air oids C	.B.R. SO3	рН	Re	marks or other tests
CENED	AL DEMARKS								FA3. 1/27
GENERA	A.56 DIVERSION - HASLING CATION CHAINAGE 2614m OFFSET  Description of Stratum  Black clinker ash and broken stone to medium hard, to brown, cross bedden grained SANDSTONE, mg sensibly horizontal, open bedding plane is infilled soft clay, open vertical joint.  MPACTION AND OTHER TES to short stone to medium hard, to brown, cross bedden grained SANDSTONE, mg sensibly horizontal, open bedding plane is infilled soft clay, open vertical joint.  MPACTION AND OTHER TES to short stone to medium hard, to brown, cross bedden grained SANDSTONE, mg sensibly horizontal, open bedding plane is infilled soft clay, open vertical joint.  MPACTION AND OTHER TES to short stone to short stone to short stone to short stone to short stone to short stone to short stone to short stone to short stone to short stone to short stone to short stone to short stone to short stone to short stone to short stone to short stone to short stone to short stone to short stone to short stone to short stone to short stone to short stone to short stone to short stone to short stone to short stone to short stone to short stone to short stone to short stone to short stone to short stone to short stone to short stone to short stone to short stone to short stone to short stone to short stone to short stone to short stone to short stone to short stone to short stone to short stone to short stone to short stone to short stone to short stone to short stone to short stone to short stone to short stone to short stone to short stone to short stone to short stone to short stone to short stone to short stone to short stone to short stone to short stone to short stone to short stone to short stone to short stone to short stone to short stone to short stone to short stone to short stone to short stone to short stone to short stone to short stone to short stone to short stone to short stone to short stone to short stone to short stone to short stone to short stone to short stone to short stone to short stone to short stone to short stone to short stone to short stone	Machin	e excava	ted trial	rit.				C87A L

Metric		LANCASI	HIRE COUN	TY CC	OUNCI	L.				JOB No	367
			E DATA SHEE							B.H. N	c 66g
	SCHEME									DEPTH	1.0 m
	LOCATION		17m OFFSET 11								ND LEVEL 213.9 m
	Desc	ription of Stratu	m	Depth	Samp 123 K	le (4.)	C L	L/PL/PI ore Rec'y	Class'n	N Value	Water & Casing Details
0	FILL Black clin	ILL Black clinker ash and broken st			11251	-		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			Started 8, 10, 75
	Sandy GRAVEL .			- 0.3 - 0.6							
1	SANDSTONE.	oss bedded,Iin	e grained	1.0			_		ļ	· 	8.10.75
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	STRENGTH				1 -						
	Depth of Sample	Bulk Dens'y (kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	Comp.	Stress (m2)	Cohe (kN/	ri2)	Ø		Remarks
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	COMPACTIO	TO GNA NO			s						
	Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	S.G.	Air Voids	C.E.R.	SO ₃ gm/litre	рН	Re	marks or other tests
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	GENERAL	REMARKS	Machin	e exceva	ted tri	a) mit	<del> '</del>				C87A 16772 TayPig

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			HASLINGDEN TO		TON	•	.,			1.5 m
	<del></del>	<del></del>	OFFSET 10m R		Sample	M.C.	LL/PL/ Core Re	Pl Class'n	1	ND LEVEL214.1m Water & Casing Details
0	FILL: Black cli	nker ash and b		Depth	123 Key	1VI.C.	Core Re	c'y (1,1833 11	14 value	Started 8, 10.75
	Hard light brow	m		0,4						Source G, 10a /
	SANDSTONE.			1.5						8,10,75
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	STRENGTH	TEST RESU	II TS	<u> </u>	1111	<u></u>			<u>!</u>	<u> </u>
	Depth of Sample	Buik Dens'γ (kg/m3)	Dry Dens'y (kg/m³)	M.C. (%)	Comp. Str (kN/m²	ess )	Cohesion (ŁN/m²)	0		Hemarks
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	COMPACTION	TO DNA NC	HER TEST R	ESULT	<del></del> ГЅ		=====			
	Depth of Sample	Compaction	Dry Dens'y (kg/m3)	N.C. (%)		Air oids C	B.R. SO	3 pH	Re	marks or other tests
	GENERAL	REMARKS	Machine	excavat	ed trial p	it	<u>-</u>			C87A L6272 TayPi

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Metric	-	LANCAS	HIRE COU	NTY CC	UN	CIL					JOB No	o36	7
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	SCHEME	A.56 DIVERSION	HASLINGDEN -	ACCRINGTO	ON				• • • • • • • • • • • • • • • • • • • •				6.7 m
	LOCATION (	CHAINAGE 2646m	OFFSET 10m F	EAST	,		<del></del>	· · ·			GROU	ND LEVEL	2143 m
0	Desc	ription of Stratu	ım	Depth	Sa 123	mple Key	M.C	LI Co	./PL/PI re Rec'y	Class'n	N Value		Casing Details
U	FILL Black clir			0.4								Started 8,	,10.75
	Very hard, cross	s bedded, fine	grained	0.7								8.10.75	
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	STRENGTH				· 		<u> —</u>		<u> </u>		<del></del>		
	Depth of Sample	Bulk Dens'y (kg/m ³⁾	Dry Dens'y (kg/m3)	M.C. (%)	Co	mp. St kN/m²	res 2)	Cohe (kN/r	sion n2)	Ø		Remarks	
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	COMPACTIO	TO ONA NO	HER TEST F	RESULT	S								
	Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	s.	G.	Air /oids	C.B.R.	SO ₃ gm/litre	рН	Re	.∴arks or oth	er tests
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	GENERAL	REMARKS	Na - 3-2		. د د	.1 -44							C87A L6272 Tavfi

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o 1 2											э	
	SCHEME	.56 DIVERSION	- HASLINGDEN	TO ACCRI	IGTON		•••••			DEPTH	1.4	m
	LOCATION 0	CHAINAGE 2676m	OFFSET 9m EA	ST						GROU	ND LEVEL214,6.	m
	Desc	cription of Stratu	ım	Depth	Sample 123 Ke	м.с	). L	L/PL/PI ore Rec'y	Class'n	N Value	Water & Casing De	etails
0	FILL: Black cli	nker ash and	EST RESULTS  Ulk Dens'y Dry Dens'y (kg/m3) (%)  AND OTHER TEST RESU  Compaction Dry Dens'y (kg/m3) (%)	0,2			1				Started 9.10.75	
		BOREHOL  A.56 DIVERSION  N CHAINAGE 2676m  Description of Strate clinker ash and brown, fine grain mostone.  brown, fine grain mostone.  Bulk Dens'y (kg/m3)	ed,			1				<u> </u>		
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				M.C.	Comp	Strese	Cobe	sion				
	Depth of Sample	(kg/m3)	(kg/m3)	(%)	Comp. ! (kN/r	n2)	Cohe (kN/i	m²;	0		Remarks	
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		r		M.C.	s.G.	Air	0.0.0	SO ₃			manulus au nab	
	Depth of Sample	Compaction	(kg/m3) '	(%)	3.0.	Voids	C.B.R.	gm/litre	bu	He	marks or other tests	<del></del> .
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	GENERAL I	REMARKS	Mach	ine excar	ated tri	al vit			··	<del></del>	C87A L6272	TayPt
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SCHEME									DEPTI	1	r
		OFFSET 8m EAS						.,,		ND LEVEL215.0	
<del></del>	ription of Strati		Depth	Sample	— м.с	:.	LL/PL/PI	Class'n	N Value	Water & Casing	
FILL Black clin	ker ash and b	roken stone.	0.2	123 Key	+	-	Core Rec'y			Started 9.10.75	
Hard, light bro								-			
closely jointed Joints are open	-				· .						
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STRENGTH	TEST RESU	JLTS				<del></del>	<del></del>			<del>                                     </del>	
Depth of Sample	Bulk Dens'y (kg/m3)	Dry Dens'y (kg/m3)	M.C	Comp. S	tress	Çoh	nesion /m2)	ø		Reniarks	
D Optiv O I Dompie	(kg/m ³⁾	(Kg/m3)	(%)	(KN/m	-1	(KIV	/m2)			TICHION'S	
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COMPACTIO	TO DNA NO		·	т т	Air		SO				
COMPACTIO		HER TEST R  Ory Dens'y (kg/m3)	ESULT	TCCT	Air Voids	C.B.R	SO ₃	На	Re	marks or other tests	
	TO DNA NO	Dry Dens'y	M.C.	TCCT	Air Voids	C.B.R	SO3	Hq	Re		
COMPACTIO	TO DNA NO	Dry Dens'y	M.C.	TCCT	Air Voids	C.B.R	SO ₃	рН	Re	marks or other tests	

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		A.56 DIVERSION	N = HASLINGDER	TO ACCR				***********		DEPTH	1 0, 2
	LOCATION			1	Samo	!e		L/PL/PI	01(-	T	ND LEVEL215.4 m Water & Casing Details
0	Desc FILL Black c Hard flaggy	cription of Stratu linker ash and SANDSTONE		Depth	Sampl 123 K	le M. ey	C C	ore Rec'y	Class'n	N Value	Started 9.10.75
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	STRENGTH				<del>                                     </del>	<u>l</u>				ļ	
	Depth of Sample	Bulk Dens'y (kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	Comp. (kN/	Stress (m2)	Coh (kN	esion /m2)	Ø	· · · · · · · · · · · · · · · · · · ·	Remarks
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<del></del>	COMPACTION	N AND OT		RESUL	TS	<del> </del>	<u> </u>				
	Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	\$.6.	Air Voids	C.B.R	SO3	рН	Re	emarks or other tests
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	GENERAL	REMARKS	Mac	hine exca	vated t	l rial pi	<del>l</del> t.				C67A 16272 TayPi

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Metric		LANCAS	HIRE COUP	TY C	OUNC	HL.					JOB No	<b>3€</b> ′	7
	. •	BOREHOL	E DATA SHE	T No	OF	<u> </u>				•	B.H. N	66 <u>1</u>	i 
	SCHEME	A.56 DIVERSION	ON - HASLINGDER	TO ACC	RINGTON						DEPTH	l	m
	LOCATION	CHAINAGE 2766	Sm OFFSET 8m b	ast							GROU	ND LEVEL .	215.7m
	Desc	cription of Strati	um	Depth	Sam 1 2 3	ole Cev	и.с.	LL Cor	/PL/PI e Rec'y	Class'n	N Value	i	lasing Details
0	FILL Black clin with rounded sa	ker ash and br	roken stone									Started 8,	0.75
			<del></del>	0.6							٠		
1	Slabs of weathe SANDSTONE, baddi					-			<u>- `</u>				
				1.2								8,10,75	•
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	STRENGTH				10		1 -		1	1			
	Depth of Sample	Bulk Dens'y (kg/m ³ )	Dry Dens'y (kg/m3)	M.C. (%)	Conj (k)	o. Stress I/m²)	(	cohesi kN/m	ion 12)	Ø		Remarks	
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	COMPACTION	ON AND OT	HER TEST F	RESUL	TS				· <del>=/</del> -		<del></del>		
	Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	S.G.	Air	C.B	3.R.	SO ₃	рН	Re	marks or other	ıests
				, 1701		1,5%			,				
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,	GENERAL F	REMÁRKS	<u> </u>	<del></del>	<del></del>				L	· <u> </u>		CE	ITA L6272 TayPig
	1			Ma	achine -	excavat	ec tr	rj.B.L	բւն.				

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BOREHOLE DATA SHEET No	PB No	·
Description of Stratum    Depth   Sample   123   Key   M.C   LL/PL/Pl   Core Rec'y   N Val	ROUND LEVEL	1
Description of Stratum    Depth   Sample	Started 9,10,75	_
FILL Black clinker ash and broken stone.  Firm mottled blue/mid brown silty CLAY with fine to medium gravel size stones.  iard flaggy SANDSTONE.	Started 9,10,75	
FILL Black clinker ash and broken stone.  Firm mottled blue/mid brown silty CLAY with fine to medium gravel size stones.  liard flaggy SANDSTONE.  1.00		
silty CLAY with fine to medium gravel size stones.  Fiard flaggy SANDSTONE.  1.0	9,10,75	
1 gravel size stones. hard flaggy SANDSTONE.	9, 10, 75	
Hard flaggy SANDSTONE.		
		<u> </u>
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STRENGTH TEST RESULTS		=
Depth of Sample   Bulk Dens'y   Dry Dens'y   M.C.   Comp. Stress   Cohesion   (kg/m3)   (kg/m3)   (%)   (kN/m2)   (kN/m2)	Remarks	_
(kg/m3) (kg/m3) (kg/m2) (kN/m2)	Nemarks	-
		_
		_
		_
		_
		_
COMPACTION AND OTHER TEST RESULTS		
COMPACTION AND OTHER TEST RESULTS	Remarks or other tests	
COMPACTION AND OTHER YEST RESULTS		
COMPACTION AND OTHER TEST RESULTS		

ासटसाट		LANCAS	HIRE COUN	TY CO	UNC	HL							• • • • • • • • • • • • • • • • • • • •
		BOREHOL	E DATA SHEE	T No	O	=4					B.H. N	o <del> 6</del> 7	
			I - HASLINGDEN 1					<b></b> .			DEPTH	1	32.0 m
	LOCATION	SAIN ROUTE CHA SIDE ROAD CHAI	INAGE 2650m OFFSE	rrser 470 er 6m eas	: West T						GROU	ND LEVEL	239 ₄ 0m
_		ription of Strati		Depth	1	ple	M.C.	L	L/PL/PI ore Rec'y	Class'n	N Value	Water &	Casing Details
0		POPSOIL		0.2	1123	174	-30 6	<del></del>	one mes y		<del> </del>	Started 20	0.9.73
	Soft		•			;	28.9	i .					
	mottled mid gr sandy silty (	=				KJ	17.5	ĺ		CL			
1	with gravel si					İ		1					
		····		1.5	13	U4	13,4	G ₇	ading	GW		İ	<i>i</i> .
2	- Dense			İ		"	- ,,, -						
[	. dark grey-bros	m				ĸJ	31,6					ļ	
·	silty sandy (	FRAVEL			!		4						
. 3	with cobbles a	und houlders.				KJ	10,6			<u> </u>			<del></del>
	Occasional ler	ses of SILT.				U4	11.6	Gr	ading	GP			
i	,											-	
4	•			4.0	ЦΗ	ដ	15.8	<u> </u>		<del> </del>		 	
	Fire			,		134	13, /	, ,	1/17/12	CL			••
	friable mottled orange	James Ini a 'ma	NT.			,,			717712				
5	silty very san		~		Hii	КJ	14-1						
	with plenty of	•											
	gratul size st	ones.				ŀ			•				•
_ 6	<del></del>				1	U4	9.1	G:	ading	SW	<del> </del>	<u> </u>	-
				- 6.4		ĸJ	20.5					ļ	
7						,,	43.7						
	Loose to mediu	m dense											
	mid brown silty to very	silty fine S	AND.								I		
8		<b></b> -				U4 KJ	8.3	Gr	ading	SU		L	
	-												
	Į					SP	` -			ŀ	N = 15	}	
9	- -							<del>-</del>	<del></del>		•	20.9.73 ) Casing 9.	
	-											21.9.73	BH. 'Dry'
	<b>-</b>				!     i							ļ	
10	CTREMOTH	TECT DECL	II TC			1		<u> </u>	<del></del>	1		<u> </u>	
	STRENGTH			M.C.	Com	p. Stre	₂₅ T	Cohe	sion				
	Depth of Sample	Bulk Dens'y (kg/m ³ )	Dry Dens'y (kg/m3)	(%)	(ki	p. Stre V/m²)		Cohe (kN/i	m2)	Ø		Remarks	
i	G.L 0.45	-	-	28,9	-			<u>-</u>		- [	Copsoil and	stony clay	<i>'</i>
	1.50 - 1.95	-	-	13.4	<u>  -</u>			-		-	Sand and gr	%ve <u>1</u>	<u></u>
	2,90 - 3,35		-	11.6	-			-		-	Sand and gr	avel	
	4.20 - 4.65	2295	2015	13.9	1;	30		65		_	100 U.C.T.		
and the second	5.80 - 6.25		_	9.1	_					_	Sand	····	
	7.50 - 7.95			8,3	<u> </u>			_			Sand and gr	nvel	
					<del>                                     </del>						6-		
					+							<del> </del>	
	- <del></del>				<del> </del>						<del></del>		
			<u> </u>		<u></u>							<del></del>	
!	COMPACTION	ON AND OT	HER TEST R		S	<del>,</del>			T == '	<del></del>			
	Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	S.G	$\perp v_{2}^{\prime}$	oids C	B.R.	SO3 gm/litre	рН	Re	marks or oth	er tests
•	<u> </u>								<u> </u>				
		"			1								
	GENERAL F	SEMARKS	11	<del></del>	<del></del>	1			<u></u>				C87A 16272 TayFig
		. Ann Third											•

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	•		HIRE COUN								5367
	,		E DATA SHEE								o 67
			N - HASLINGDEN						,		32,0
· {	LOCATION	MAIN HOUTE CH SIDE MAD CHA	AINAGE 2650m ( INAGE 52m OFFS	er en ea	m West St					GROUI	ND LEVEL 239.0 r
10	Des	cription of Strati	ım	Depth	Sample 123 Key	— М.С	c C	L/PL/P1 ore Rec'y	Ćlass'	n N Value	Water & Casing Dctail
10	See Sheet )	lo. 1			SP B	-				N = 5	WE (Slight) 10.0m
11	• -				В	10.	6 G	rading	SF	!	
''						ļ.		,			
12	_				SP	12.	5	· · · · · · · · · · · · · · · · · · ·		N = 13	
					$\prod \prod_{}$	29.	1				
13	<ul> <li>Very loose to</li> <li>dark grey-bro</li> </ul>				SP	3£.	-		ML/C	N = 3	N
ł	varved clayey										
	with partings		D .		SP B	23.	7 Gre	ading	ŞP		
14	_					-					
<b>[</b>					SP	30.	0 Gre	ading	ML/CI	1 N = 13	
					SP B	27.	8				
15	-	<del></del>		15.3	KJ	9.1	1				
	_	^			74	6.7	Gra	ading	GW		
16	Dense dark grey-bro	wn	y		3	-					<u>, , , , , , , , , , , , , , , , , , , </u>
	sandy GRAVEL										
17	Claybound to	15.42			KJ	7,0					
"	•				υ4	-					
18	<ul><li>Soft dark gre</li></ul>	v-brown		17.8							
}	varved clayey				В	30,	8		ML/CI	1	
	•	······································		18.5	SP	5.5			SU+G1	N = 50 for 250mm	
19	See Sheet No.	3		18.5	B B	7.0	Gre	ading	GW		21.9.73 BH. 'Dry'
	<u>.</u>					100					Casing 20.0m 22.9.73 BH.   Dry!
20	STRENGTH	TEST RESU	JLTS								
į	Depth of Sample	Bulk Dens'y (kg/m³)	Dry Dens'y (kg/m3)	M.C. (%)	Comp. S	treis (2)	Coh (kN/	esion m2)	Ø		Remarks
	15.40 - 15.85	_		6.7	-		_			Sand and gra	ivel
	17.80 - 18.50	_	-	<b>30</b> ₌8	_		29	9	26°	Quick S.B.	
	,					· <b>-</b>	<del></del>		-		
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				<del>.</del>	<u> </u>						
					<u> </u>					<del></del>	
<del></del>	COMPACTION	N AND OT	HER TEST F	RESULT	S						
	Depth of Sample	Compaction	Dry Dens'γ (kg/m3)	M.C. (%)	100	Air Voids	C.B.R.	SO ₃	рН	Re	narks or other tests
			1	7701				3.,,,,,,,,			
					1						
		<u> </u>				i i					
	GENERAL	REMARKS	<u> </u>		<u>l</u>	<u></u> . <u> </u>		<del></del>			C87A 16272 Tey
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Metuc	1 15 15 15 15 15 15 15 15 15 15 15 15 15	LANCAS	HIRE COUN	TY C	OUN	ICIL						o <u>367</u>
			E DATA SHEET								B.H. N	o 67
	SCHEME	A.56 DIVERSION	- HASLINGDEN T	O ACCR	NGTO	N	, <b>.</b>			······•	DEPTH	32.0 m
	LOCATION	MAIN ROUTE CHA SIDE ROAD CHAI	INAGE 2650m OF NAGE 52m OFFSE	TSET 47 T6a E	/m Wel AST	ST		٠			GROU	ND LEVEL239.0 m
20	Desc	cription of Stratu	ım	Depth	Sa 123	inple Key	M.C.		L/PL/PI ire Rec'y	Classin	N Value	Water & Casing Details
20		·		<del>                                     </del>		KJ	5.3		_ <del></del>			
			-			SP	6.1				N = 19	
21	<u> </u>			•							<u> </u>	
	Dense to very	dense			restriction best and restriction from	В	-					
•	dark grey-bro	m			E							·
22	fine to medium							<del></del>			<del> </del>	
	gravel size s				1	SP	6.1				N = 50 for 230mm	
			-			В	7.6	Gra	iding	GP	į ·	
23	<u> </u>							+-		<del></del>	<del> </del>	
	Ĺ										-	22.9.73 BH. 'Dry'
24	[					SP 	-				N = 50 for 50mm	Casing 23.5m 24.9.73 HH. 'Dry'
24	-			-		В	5.3		· · ·			
	<u> </u>										ł	
25	Medium dense	dark grey-brow	n	24.8		КJ	25.0	<u> </u>		SF/	· .	
	very silty fir	ne SAND with	CLAY parting		2000	SP	30, 9			01	N = 16	WE. (Slight) 25.0m
				25.5								
26	Dense to very	dense						┼		<del></del>	<del></del>	WE. 26.9m
	dark grey-bro					SP	-				N - 34	WE. 26.0m WL. 25.0m (15mins.) 24.9.73 SWL. 26.1u Caring - 20.0m
27	well graded with some SA					В		Gra	ding	GP		Caring = 20.0m 25.9.73 SWL 25.0m
2,1	alight CLAY							-			<del> </del>	550,70,150 50.70 550.70
	<u> </u>	_			est been converted toward	 						
	}					SP	-				N = 50	
28						_					for 200mm	
	ļ					B	-					
29	- 				#		ļ	↓_				25. 7. 73 Str. 28. 2m
						CP	-				N = 50 for 240mm	Casing - 29.0m 26.9.73 SEL. 24.0m
	- Saturated				SOM HANGEN	В	_					
30		TECT DECL	U.TC					<u> </u>			<u> </u>	
	STRENGTH	Bulk Dens'y	Dry Dens'y	M.C.	Co	mp. Sti	res	Cohe	sion			·
	Depth of Sample	(kg/m3)	(kg/m3)	(%)	7	kN/m²		(kN/r	n2)	Ø		Remarks
_										[_		
•					 - <del>¦</del>							
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		·								-		<del>,</del>
	<u> </u>				1						<del></del>	
	COMPACTIO	NI AND OT	UCD TECT D	ECLIL.	TC	<del></del> -	<u> l</u>					
		T	HER TEST RI	M.C.			Air 🗆		SO ₃			
	Depth of Sample	Compaction	(kg/in3)	(%)	<u>s.</u>	G	oids	.B.R.	gm/litra	pH \		marks or other tests
	25.0	-	-	-	-	-			Nil	7.0	Water samp	le.
				<u>.                                    </u>	$\perp$							
									<u> </u>			
	GENERAL F	REMARKS										CB7A 16272 TayFig

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Wietric	•	LANCAS	HIRE COU	INTY C	OUNC	IL.					o <u>367</u>
			E DATA SHE			4				B.H. N	o
[	SCHEME	A,56 DIVERSION	HASLINGDEN	TO ACCRI	NGTON				•••••		i m
	LOCATION	MAIN POUTE CHA SIDE POLD CHAI	INAGE 2650m  HAGE 52m OFF	offset 47 Fset 6m ea						GROU	ND LEVEL 239.0 m
30	Des	cription of Strati	mr	Depth	123 K	le M	.c.   c	LL/PL/PI ore Rec'y	Ciass'n	N Value	Water & Casing Details
اد	-										
Ī	See Shee	t No. 3			Ex-Section 1					17: 9E	
31	_					SP -	-	<u>-</u> .		N = 35	
-				ļ		В	-				
32				1							26.9.73
. ^				32.0	<b>{</b> }[]						Casing - 32.0m
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[											
	STRENGTH	TEST RESU	JLTS								
ĺ	Depth of Sample	Buik Dens'y (kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	Comp (kN	. Stress /m2)	Coh (kN	esion /m²)	Ø		Remarks
					<u> </u>						
				<u> </u>			<u> </u>				
		<u> </u>					<u> </u>				
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				<u> </u>	<u> </u>						
	COMPACTIO	ON AND OT			rs						
ļ	Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	s.G.	Air Voids	C.B.R	SO3 gm/litre	рН	Re	marks or other tests
						<u> </u>		<u> </u>			
İ				1		ļ	<u> </u>				
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	GENERAL I	REMARKS	=			<u> </u>					C87A 167

Metric		LANCAS	HIRE COU	NTY C	OUN	CIL					JOB No	o <del>36</del> 7	••••
		BOREHOL	E DATA SHE	ET No	1	OF:	1				B.H. N	o68	
	SCHEME	4.56 DIVERSION	- HASLINGLEN	TO ACCRI	LCTO	N						5.6	
	LOCATION	MAIN ROUTE CHA SIDE ROAD CHAI	INAGE 2724m NAGE 253m OF	OFFSET 19a	EAST	AST					GROU	ND LEVEL 216.5	.m
	Desc	cription of Strate	ım	Depth	Sa	emple 3 Key	м.с.	L	L/PL//RI ие Вефіу	Class'n	N Value	Water & Casing Det	ails
0	FILL					1,09	<del> </del>	1 -	,_,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	<u> </u>		Started 30.6.75	
	Black clinker a	sh,	•		14 A	SP	17.5				N = 9		
	clayey sand and	gravel,				J.	''•						
1	pieces of metal												
	broken brick, g	lass,			A. I	SP	27.6	İ		-	N = 5		
2	Lina Sor V Clay.					В	15.2						
								İ		İ			
·	-												
. 3				_ 3.0						<u> </u>			
•	Very dense, oran					SP	12.3			SF	N ≈ 44	30.6.75 bH. 'Dry'	
	with gravel size				111							Uncased hole,	
4	Redium to very	dense,		3.8		SP	} <u> </u>			<del> </del> -	N = 20	1.7.75 BH. 'Dry'	
(	dark gre;-brown			•								V.E. 3.8m (Slight) 150mr O Casing.	
r	clayey silty sar	ndy GRAVEL.			5	В	İ	Gro	iding:	GC		W.E. 4.7m rose to 3.2m	
5	-			İ		"	<del>-</del>	016	turing:	- 00		in 15 mins. (casing 4.7m)	
		•		5.6	Castell Broker	SP	-				N = 38	1.7.75 S.W.L. 3.0m	
_				-   5.6								Casing 5.5m	
. 6	-												
			•	-									
										<u> </u>			••
	-												
	<u>-</u>						<u> </u>	┦—					
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	_									-			
	-			-									
	STRENGTH	TEST RESI	II TS	<u></u>				4			<u> </u>	<del></del>	
	Depth of Sample	Bulk Dens'y (kg/m3)	Dry Dens'y	M.C.	Co	mp. S (kN/m	trecs	Cohe	sion	ø		Remarks	
	Depth of Jampie	(kg/m3)	(kg/m3)	(%)		(kN/m	(2)	(kN/i	(12)			116110163	
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	COMPACTI	)	UED TEAT	DECL	<u> </u>		<del></del>		<u> </u>				
	COMPACTIO		Dry Dens'y	RESUL M.C.			Air		SO ₃	<del></del>			
	Depth of Sample	Compaction	(kg/m3)	(%)	S	.G.	Voids C	.e.R.	gm/litrat	рН	Re	marks or other tests	
					_								
				<u> </u>		$\perp$			<u> ' </u>				
					$\perp$								
	GENERAL F	REMARKS										C87A 16272 T	ey Ptg

		LANCAS	HIRE COU	NTY C	OUNC	Ł					o <u>%7</u>
	•		E DATA SHE								o
	SCHEME	• • • • • • • • • • • • • • • • • • • •	ION - HASLING							DEPTH	1.0
L	LOCATION	MAJU ROUTE SIDE ROAD C	CHAINAGE 2632: HAINAGE 2002	m offset offset	55n EAS 24n SOUT	31' 'H	,			GROU	ND LEVEL2219
		ription of Stratu	ım	Depth	Samp	le M.	C. C	_!_/PL/PI ore Rec'y	Class'n	N Value	Water & Casing De
	cose mid brown	OPSOH,	,	0.1					SF		Started 19.12.73
, M	ith fine grave loft to firm mo andy CLAY wi	1 size stones	hann eilte	0.6		យ 19 យ 17	.4		CI		
8	andy CLAY wi	th gravel mize	stones.	1.0		ນຶ່ 21	1 4		+	<del></del>	19.12.73 'Dry'
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	STRENGTH	TEST RESU	JLTS								
	epth of Sample	Bulk Deps'y (kg/m ³⁾	Dry Dens'y (kg/m3)	M.C. (%)	Comp (kN	. Stres /m²)	Coh (kN	esion /m²)	Ø		Remarks
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	Depth of Sample	Compaction	Dry Dens'y	M.C.	s.G.	Air	C.B.R	SO ₃	рН	Ro	marks or other tests
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Decay   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Contro															
Dense to very dense   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See   See	•		LOCATION	SIDE HUAD CHA	INAGE 91m CFFS	SET 26m ii	IEST		<del></del>	·	. 10. 101	<del>-  </del>	T	<del></del>	
Dense to very decame   mid breen   alightly clayer, witty   style   mid breen   alightly clayer, witty   style   mid of sale   style   mid of sale   style   mid of sale   style   mid of sale   style   mid of sale   style   mid of sale   style   mid of sale   mid of sale   mid of sale   mid of sale   mid of sale   mid of sale   mid of sale   mid of sale   mid of sale   mid of sale   mid of sale   mid of sale   mid of sale   mid of sale   mid of sale   mid of sale   mid of sale   mid of sale   mid of sale   mid of sale   mid of sale   mid of sale   mid of sale   mid of sale   mid of sale   mid of sale   mid of sale   mid of sale   mid of sale   mid of sale   mid of sale   mid of sale   mid of sale   mid of sale   mid of sale   mid of sale   mid of sale   mid of sale   mid of sale   mid of sale   mid of sale   mid of sale   mid of sale   mid of sale   mid of sale   mid of sale   mid of sale   mid of sale   mid of sale   mid of sale   mid of sale   mid of sale   mid of sale   mid of sale   mid of sale   mid of sale   mid of sale   mid of sale   mid of sale   mid of sale   mid of sale   mid of sale   mid of sale   mid of sale   mid of sale   mid of sale   mid of sale   mid of sale   mid of sale   mid of sale   mid of sale   mid of sale   mid of sale   mid of sale   mid of sale   mid of sale   mid of sale   mid of sale   mid of sale   mid of sale   mid of sale   mid of sale   mid of sale   mid of sale   mid of sale   mid of sale   mid of sale   mid of sale   mid of sale   mid of sale   mid of sale   mid of sale   mid of sale   mid of sale   mid of sale   mid of sale   mid of sale   mid of sale   mid of sale   mid of sale   mid of sale   mid of sale   mid of sale   mid of sale   mid of sale   mid of sale   mid of sale   mid of sale   mid of sale   mid of sale   mid of sale   mid of sale   mid of sale   mid of sale   mid of sale   mid of sale   mid of sale   mid of sale   mid of sale   mid of sale   mid of sale   mid of sale   mid of sale   mid of sale   mid of sale   mid of sale   mid of sale   mid of sale   mid of		٥			ım	Depth	S   12	ample 3  Key	M.C.	Co	L/PL/PI ore Rec'y	Class'r	n N Value	Water & Casing De	tails
Dense to very dease sid brown slightly playery, skilty, well graded StR? with many fine to sedium gravel time stones.  Cossainmal cobility,  B 10,3 Grading OF for Poss  SP - 10,3 Grading OF for Poss  B 10,5 Grading OF for Poss  SP - 10,5 Grading OF for Poss  B 10,6 SP 8.8 SP - 10,5 Grading OF for Poss  SP 11,4 SP 8.8 SP - 10,5 Grading SP SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP 11,4 SP				OPSOIL.	·····	- 0.25	1	U4	17.8					Started 18.9.73	•
Dense to very deame   sid brown   signify clayry, sitty,   vell graded SAR7   vith many fine to to be sedius gravel size atomes.   SP   10.5 Grading   DF   Far 75.00		ł			•			KJ	19.0						
2 aid brown alightly claysy, slity, well graded SMS with eavy fine to sedding gravel size atones.  3 occasional cobbbs.  3		1	<u>.</u>						<u> </u>	+		+		<del> </del>	
2 aid brown alightly claysy, slity, well graded SMS with eavy fine to sedding gravel size atones.  3 occasional cobbbs.  3		ŀ			•										
Alleghant Clayby, citity, well graded Salve, with namy fine to medium gravel size atomes.   SP   10,5   Grading   SP   10,5   Grading   SP   10,7   Span   SP   10,5   Span   SP   10,5   Span   SP   10,5   Span   SP   10,5   Span   SP   10,5   Span   SP   10,5   Span   SP   10,5   Span   SP   10,5   Span   SP   10,5   Span   SP   10,5   Span   SP   10,5   Span   SP   10,5   Span   SP   SP   10,5   Span   SP   SP   10,5   Span   SP   SP   10,5   Span   SP   SP   SP   SP   SP   SP   SP   S		<u> </u>		ry dens <del>e</del>			ALC:	U4	(8.4j	Gr	ading	GH			
Well graded SMN   with many fine to medius gravel size stones.   SP		²		ayey, siity,		İ			12.4			Lio Lio			
SP   10.5 Grading   OF   For 75cm	•	ŀ	well graded	SAND				NO	12.4			5.			
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SP   N = 42   N = 45		ŀ	mentum grave	e1 3126 800Mc.	•			SP	_				N = 50		•
Sec Coct No. 2   SP   SP   11.4   N - 45			Occasional	cobblas.			1	- 1	10.3	Gr	ading	GF	for 75mm		
Sec Coct No. 2   SP   SP   11.4   N - 45		1													
Sec Coct No. 2   SP   SP   11.4   N - 45		F	_		Ų-										
Solution   Strength   Solution   Strength   Solution   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength	!	5				·				╬-				· · · · · · · · · · · · · · · · · · ·	
Solution   Strength   Solution   Strength   Solution   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength		F					1	SP	-				N = 42		
Solution   Strength   Solution   Strength   Solution   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength		<i>.</i>		,			7	В	(9.6)						
Solution   Strength   Solution   Strength   Solution   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength		° [	<del>-</del>		•										·
Solution   Strength   Solution   Strength   Solution   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength		Ì					1	SP	11.4				N = 46		
Solution   Strength   Solution   Strength   Solution   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength	•	7	<u>.                                    </u>							<del>-</del>	·				
Solution   Strength   Solution   Strength   Solution   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength		-					1		( ).0 )						-
Solution   Strength   Solution   Strength   Solution   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength   Strength	,	. [	•				31.00	SP	8.8				N = 21		
San Chaet No. 2   SP B   27.6   Grading   SF N = 18	,	<b>'</b>	<del>-</del> · .					В	8.1	Gr	ading	SP			
Soe Sheet No. 2   SP B   27.6   Grading   SF N = 18		-	<del>.</del>				10				-				
SP B   27.6   Grading   SF N = 18	!	9					28		<u></u> -				:		•
STRENGTH TEST RESULTS   Depth of Sample   Buik Dons'y (kg/m3)   M.C. (%)   Comp. Stress (kN/m2)   0   Remarks		ŀ	-			- 9.3		ΚJ	'						
STRENGTH TEST RESULTS		ŀ	See Shoet No	o. 2			100	SP B	27.6	Gra	ading	SF	N = 18		
COMPACTION AND OTHER TEST RESULTS   Signor   Side   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Compaction   Com	•	10	STRENGTH	TEST RESI	JLTS	<del> </del>	17_1	i- <del>]</del>	<del>'</del>						
COMPACTION AND OTHER TEST RESULTS   Depth of Sample   Compaction   Dry Dens'y (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3)   (kg/m3			Depth of Sample	Buik Dens'y	Dry Dens'y	M.C.	C	omp. Sti	ess	Cohe (kN/	esion m2)	ø		Remarks	
1.50 - 1.95		Ì	G.L 0.45						<del>'</del>				Topsoil an	d friable clay	
COMPACTION AND OTHER TEST RESULTS  Depth of Sample Compaction Dry Dens'y (kg/ms) (%) S.G. Voids Voids Slight 7.0 Water sample  3.7		ı	1.50 - 1.95			(8,4)				_		_	Sand and g	ravel	
Depth of Sample Compaction Dry Dens'y (kg/m3) M.C. (%) S.G. Air Voids C.B.P. SO3 gm/litre pH Remarks or other test  9.7 Slight trace 7.0 Water sample		İ		<del></del>			1								
Depth of Sample Compaction Dry Dens'y (kg/m3) M.C. (%) S.G. Air Voids C.B.P. SO3 gm/litre pH Remarks or other test  9.7 Slight trace 7.0 Water sample							1							<del>.</del>	
Depth of Sample Compaction Dry Dens'y (kg/m3) M.C. (%) S.G. Air Voids C.B.P. SO3 gm/litre pH Remarks or other test  9.7 Slight trace 7.0 Water sample											<u></u>		·-··		
Depth of Sample Compaction Dry Dens'y (kg/m3) M.C. (%) S.G. Air Voids C.B.P. SO3 gm/litre pH Remarks or other test  9.7 Slight trace 7.0 Water sample	·	ı					1				<del> </del>				
Depth of Sample Compaction Dry Dens'y (kg/m3) M.C. (%) S.G. Air Voids C.B.P. SO3 gm/litre pH Remarks or other test  9.7 Slight trace 7.0 Water sample		İ				<del></del> .	+-							· · · · · · · · · · · · · · · · · · ·	<del>-</del> -
Depth of Sample Compaction Dry Dens'y (kg/m3) M.C. (%) S.G. Air Voids C.B.P. SO3 gm/litre pH Remarks or other test  9.7 Slight trace 7.0 Water sample						<del></del>	+							<del></del>	
Depth of Sample Compaction Dry Dens'y (kg/m3) M.C. (%) S.G. Air Voids C.B.P. SO3 gm/litre pH Remarks or other test  3.7 Slight trace 7.0 Water sample		- 1	<u> </u>				1			•	<del></del> -	<del></del>		······································	
Depth of Sample Compaction Dry Dens'y (kg/m3) M.C. (%) S.G. Air Voids C.B.P. SO3 gm/litre pH Remarks or other test  3.7 Slight trace 7.0 Water sample			COMPACTIO	N AND OT	HER TEST F	RESILL	L TS							<del></del>	
9.7 Slight 7.0 Water sample		Į		T	Dry Dens'y	M.C.		.G	Air (		SO ₃	Hq	Re	ernarks or other tests	
		į		· · · · · · · · · · · · · · · · · · ·				— - <u>-</u>	Olds		gonthina	<del></del>			
			· · · · · · · · · · · · · · · · · · ·		<del>                                     </del>		+				15.00				
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GENERAL REMARKS			GENERAL	LREMARKS	<u> </u>	<del>' ''</del>		1_			<u></u>			C87A 16772	TayPtg

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		BOREHOL	E DATA SHE	ET No?	OF	2				B.H. N	o
- 1	SCHEME		CION - HASLING							DEPTH	18.8
	LOCATION	MAIN ROUTE SIDE ROAD (	CHAINAGE 2685 CHAINAGE 91m C	m CFFSET	77a WEST	ľ				GROU	ND LEVEL
	Desc	cription of Strat		Depth	Sample 1 2 3 Ke	<u>.</u> М.	c.	LL/PL/PI Core Rec'y	Class'n	N Value	Water & Casing Deta
10	Medium dense mid brown ver	y silty fine	SAND.								18.9.73 BH. 'Dry' Casing 10.5a 19.9.73 SWL. 9.7a
11			· · · · · · · · · · · · · · · · · · ·	11.0	SP	-	_			N = 4	
12	Medium dense dark grey-bro varved clayey				SP B	23,	, 3 G	rading	<b>M</b> I.		
13	and sandy SI with CLAY p					30,	,0 G	rading	ML	N = 15	
14			·		B	30,	.6				
			u		SP	29.	.3			N = 13	
15	_			-	В	31.	4		ML/CH		
16	Medium to ver			16.0	SP SP	13.	1			N = 16	
17	slightly clays silty to very SAND with grav	silty	e <b>s</b> ,		SP B SP B SP B SF B SF B SF B SF B SF B	16. 9.8		rading	SF	N = 50 for 120mm	
18 _	Hard broken, I	light brown Boulder?		18.0	B SP	10.	3	•		N = 50 for 75mm	19.9.73 Casing 18.0m SWL, 9.3m 0.W.C.
19 -	_			18.8							
20	STRENGTH	TECT DECI	II TC			<u>l</u>		1 - 1.5			
}-	Depth of Sample	Buik Dens'y (kg/m ³ )	Dry Dens'y	M.C.	Comp.	Stress	Col	nesion I/m2)	ø	<del></del>	Devento
-	<del></del>		(kg/m3)	(%)	(kN/r					0-1 > 5 3	Remarks
\ <b> </b> -	11.0 = 12.50 14.30 = 15.80		-	23.3	-		41		23°	Ouick S. B.	
-	14, 50 = 15,60		<u></u>	29.3	-		41		230	Guink S.B.	
-											
-					ļ <u></u>						
			,								
	COMPACTION	TO CINA NO		RESULT M.c.	S s.g.	Air	C.B.R	SO ₃			
·		C	Dry Dens'v		1 5 1 6 1				pН		marks or other tests
· · ·	Depth of Sample	Compaction	Dry Dens'y (kg/m3)	(%)	0.0.	Voids	C.B.n	' gm/litre	pri		marks or other tests
-		Compaction	Dry Dens'y (kg/m3)		0.0.	Voids	C.B.N	gm/litre	рп	He	HIBIKS OF OTHER 16212

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	-	BOREHOL	E DATA SHEE	T No	1	OF	<u></u>				o 70
Ì	SCHEME	A.56 DIVERSION	N - HASLINGDEN	TO ACC	RINGT	ON				DEPTH	19,5
	LOCATION	CHAINAGE 2685	im OFFCET 21m	EAST						GROU	ND LEVEL240.9
	Desc	ription of Strati	ım	Depth	Sa	mple Key	M.C.	LL/PL/P Core Rec	Class'n	N Value	Water & Casing Detail
٥	TOT	SOIL		0,15	. E-1. I	U4	21.4				Started 26,11.73
ł						KJ	i -		·ĺ	j	
,	Medium dense _mid grey-brown										
	slightly clayey	silty sandy		Ì							
Ī	GRAVEL		,		W.	SP B	14.7	Grading	GW	N = 10	  -
2	_				7					ļ	
ţ	ļ.								}		
t	-										
3	 . A few cobbles an	adi				75		<u> </u>		N = 28	<del></del>
ł	rockets of sandy				A CHILD	SP B	11:4	 		N = 20	
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4	<del></del>		•								
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5	- <del></del>								_ <u> </u> ·	<u> </u>	
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7	_	,									
Ī					E.	SP B	11.2	Grading	GF	N = 24	26.11.73 BE, 'Dry' Casing 7.5m 27.11.73 BH, 'Dry'
В	- -					ļ ļ		<del> </del>			27.11.73 BH. 'Dry'
ļ											
İ				-							
9	Medium dense		•	9,0		SP L	7.6	<del> </del>	SU	N = 19	
	mid brown slightly silty			ŀ		25 F	/,5		30	" - "/	
10	fine to medium	SAND					<u></u>	<u></u>		<u> </u>	
١٠	STRENGTH	TEST RESU	JLTS								
	Depth of Sample	Bulk Dens'y (kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	Co	mp. Str kN/m²	وزد	Cohesion (kN/m²)	P		Remarks
Ì											
<b>)</b>					_						
i					┪				<del></del>	<del></del>	
		<del>_</del>			•				1 1		
				<u>-</u>				<u> </u>			
	COMPACTIC	ON AND OT			$\neg$						
	COMPACTIC	ON AND OT	HER TEST F  Dry Dens'y (kg/n/3)	RESUL M.C. (%)	$\neg$	.G. \ _{\/.}	Air Coids C	.g.R. SO3	e Pri	Re	marks or other tests
	i———		Dry Dens'y	M.C.	$\neg$	G. _V	Air Coids C	.B.R. SO3 gm/fitr Slight trace	e Pri	Re Water samp	marks or other tests
	Depth of San.ple	Compaction	Dry Dens'y	M.C. (%)	$\neg$	. <del></del>	Air coids C	gm/litr	e Pri		marks or other tests

INICITE -		LANCAS	HIRE COUN	ITY C	OUI	NCIL			-			o
•	-		E DATA SHEE				2					o
	1		ON - HASLINGDEN		RING	TON	••••••		***********			19.5 m
	LOCATION		5m OFFSET 21m		1.	ample	-i	· 	L/PL/PI	i	1	ND LEVEL240.9.m
10	Desc	cription of Strat	um .	Depth	12	ample 3 Key	.M.C	· c	ore Rec'y	Class'n	N Value	Water & Casing Details
	See Shee	t No. 1		10.7		SP B				)   		
11	   Medium dense				2.0	SP B	23,8			ML	N = 20	WE, 11.0m (Trace)
	mid brown		n				 					
12	singhery enay	ey sandy SIL	ı				- R21-2				1 3 4	
					e e	SP	27.				N = 11	<u> </u>
	_	•			П						 	
13	_		•				<b> </b>	-				
,	ļ 			13.6		K.J	7.3	Ì				
14	Mediu dense				S. BEE.	SP B	2.5	<u> </u>			n = 26	
	dark grey-bro slightly clay		•		12.			İ				
	fine to mediu	-								1		
15	<ul> <li>with gravel s</li> <li>and cobbles.</li> </ul>	ize stones						-		<del></del>	<u> </u>	
16	and coobles.		,		ACTION OF	SP B	6,5 10,4	Gr	eding	SF	N = 39	27.11.73 BH. 'Dry' Casing '5.5m 28.11.73 BH. 'Dry'
				,				ŀ				
17	Hard broken			17.0		SP	-	<del> </del> -		GU	N = 50	···
	mottled orange	e/light brown				KJ	_				for 200mm	
18	medium to coa: - SANDSTONE (B	• •			10.0	SP	_					
	anoroda (B	outders//		18;4		КJ				·   .		00 11 72 PU IB!
	Hard broken					l vo	-					28.11.73 BH. 'Dry' Casing 18.4m 29.11.73 SWL. 18.4m
19	light brown fine grained	SANDSTONE.	resumed bedrock	<b>5.</b>	3	SP	-			<del></del>	N - 50 for 60mm	·
		,,,,		19.5							for 60mm	29.11.73 Casing SWL 19.0m CWC.
20	STRENGTH	TEST RESU	JLTS									
	Depth of Sample	Bulk Dens'y (kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	С	omp. St (kN/m²	ress ?)	Cohe (kN/i	sion m2)	Ø		Remarks
'												
				· <del>·</del> ··································	_ _	<del></del>						
					<u>i</u> _				- <b></b>			
					$\perp$							
					_							
			<u> </u>									
	<u> </u>				-						···········	
					1							
more fact												
	<u> </u>	<del></del>	HER TEST R	ESUL M.C.			Δi. T		SO ₃			
	Depth of Sample	Compaction	(kg/m3)	(%)	S	s.G. \	Air /oids	C.B.R.	gm/litre	рН	Re	marks or other tests
					_							
					_				-			
	CENEDAL		<u>L</u> .					<del></del> -	1			
	GENERAL	TEMARKS		3 hour	s ch	iselli	ಡ್ತ 18.	4m - 1	9.5a			C87A L6272 TayFig

Metric	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	LANCAS	HIRE COUN	ATY CC	DUNCI	L				JOB M	o <u>%</u> 7
			E DATA SHE			2				B.H. N	o
	SCHEME	A.56 DIVERSIO	N - HASLINGDEN	TO ACCR	INGTON					DEPTH	11.7 m
	LOCATION	CHAINAGE 2696	m OFFSET 54m	EA ST						GROU	ND LEVEL 236.2 m
	Desc	cription of Strati	um	Depth	Samp 123 K	le / N	A.C.	LL/PL/PI Core Rec'y	Class'n	N Value	Water & Casing Details
0		TOPSOIL		0.15	13		14,5	Core rice y		N = 6	Started 17.12.73
	Locse to medium	n dense	•			"	14,5			" = 0	Degreed (7,12,7)
_	dark grey-brown										
1	slightly clayer	v silty gravel	ly		E STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STA	,	15.3				
	with a few cobi	bles. and boul	ders.			P	15.0			N = 9	·
2	<u>.</u>					·  _				" - /	
					E I	' '	12.0	Grading	SW	!	
•	ļ		•							 	
. 3	<u> -</u>				 	_				ļ	
					S S	Р	14.0			N = 26	
	ŀ				B B	.   .	10.3		İ		,
4	_			ŀ		-			_	 	
	-			İ	c						
_	ļ				S S	P	*			N = 14	WE, 4.5m (Slight)
5	Stiff			<b>-</b> 5.1	[]   K	J T	12.9	22/13/9	CL		
	dark grey-brown	ì		1							
. 6	sandy silty CL	YA.			Ū    Ū	4 (1	11.4)				
	with fine to me	dium gravel s	ize stones.		-     K	J 1	2.2				
	Occasional vein	ns of SANO.									
7	<u>-</u>	,				·  _			_		
			,		)   U	4   1	1.9				
	ļ. 			7.8	$\prod_{k} \prod_{k} K_{k}$	,  ,	3,1				
8	Hard very broke	n .		7."	<u>                                     </u>	*  -	יילי			<u> </u>	
	light brown			İ	В		<b>-</b>				
	fine grained S in a silty SAN			1	c	Р	-			N - 50	
9		D BEGFIE									
	ţ				[						
10	-				B		-				<u> </u>
	STRENGTH	TEST RESU	JLTS					<u> </u>	·		
	Depth of Sample	Bulk Dens'y (kg/m3)	Dry Dens'y (kg/m3)	M.C (%)	Comp.	Stress		Cohesion (kN/m²)	Ø.		Remarks
	5.50 - 5.95	2135	1915	(11.4)	11			56 •		100 U.C.T.	
	307	-				<del>-</del>		• Weakene			
	<del></del>	<del></del>			· <del>¦</del>				+	- <del></del>	
				,	-		-			-	<del></del>
		<del></del>	<u> </u>							· · · · · · · · · · · · · · · · · · ·	
		_			<del> </del>						
·	<u> </u>	<del> </del>			<u> </u>						
					<u> </u>					<del></del>	
				,							
						. <b>_</b>					
	COMPACTIO	TO DIA NC	HER TEST F	RESULT	rs	-					
	Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	s.G.	Air	, C.	SO3	рН	Re	marks or other tests
			11.971.197	(701	1	VOIL		grifficia			
			<u> </u>		+	†	+				
		<del> </del>	<del>                                     </del>				-				
	GENERAL	L L L L L L L L L L L L L L L L L L L	<u>                                     </u>			<u></u>	<u></u>				C87A 16772 Tavito

Į	LOCATION	CHAINAGE 26	96m offset 5	54m EAST									GROU	4D LEVEL235,43
		ription of Strat	nw	Der	oth	Sar	nple Key	- M.	э. Т	LL/PL/Pl Core Rec	Clas	s'n	N Value	Water & Casing
)  -  -	See Sheet	No. 1	,	10,			CP	-					N = 50 for 125mm	18.12.73 BH, 'D Casing 19.12.73 BH, 'D
+	Herd broken light brown fine grained	SANDSTONE.	Presumed bedy	rock			B CP	-					N = 50 For 30mm	
. <u> </u> .   .	6			11,	.7		CP	-					N = 50 for 30mm	19,12,75 Casing 11,65
	-													BH. 'Exy' O. W. C. 20.12.73 S. W. L. 4.5m
 	-													
-	-	-								<del></del> -				
-	-		•					-						
•	-		•											
[ 	-									<del></del>				
<u> </u>	_	-						ļ						
} } !				:										
1	•													
-	STRENGTH	TEST RES	JLTS			<u>ll</u>								
	Depth of Sample	Bulk Dens'y (kg/m3)	Dry Dens'y (kg/m ³ )	M.C. (%)	•	Cor ()	np. S cN/m	tress 2)	Co (k1	hesion V/m²)	Ø	-		Remarks
ŀ				-		<u></u> -			<del></del>	<del></del>	<u> </u>			
				-		 						-	-	
	\													
	COMPACTIO	ON AND OT				S					<del>=</del>	7		
-	Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M,C (%)		s.c	3.	Air Voids	C.9.F	3. SO3	e b;4	-	Re	marks or other tests

Metric		LANCAS	HIRE COU	NTY C	oui	VCIL					JOB N	o
		BOREHOL	E DATA SHE	ET No	1	OF	3			•	B.H. N	o
	SCHEME	A,56 DIVERSION	- HASLINGDEN	TO ACCRI	NGTO:	N					DEPTE	126.0 m
	LOCATION	MAIN ROUTE CHA SIDE ROAD CHAI	INAGE 2710m   NAGE 109m OF	OFFSET 44: FSET 9m E	e VE AST	ST					GROU	ND LEVEL 239.9 m
	Des	cription of Strat	um	Depth	S	ample 3 Key	M.C.	LL/P Core	Ľ/PI Rec′γ	Class'n	N Value	Water & Casing Details
	0	TOPSOIL		0,2		U4	25.5		<del></del> :_	1		Stari2d 9,11.73
	Loose mid grey sandy LOAM wi		stones.			КJ	16.5			CI		
	1			0.7	$ \Pi $	l va	,0,,	<u> </u>		ļ		
	bense to very											
	nid grey-brown silty sandy G					<b>U</b> 4	16.2	Cradi	.ng	G₩		
•	2 Cocasionally s		• .					<del> </del>		<del></del>		9.11.73 BH. 'Dry' Casing 2.0m
ı	, , , , , , , , , , , , , , , , , , , ,	anginery errors			$\mathbb{H}^{1}$	КJ	13.8					12.11,73 BH. 'Dry'
											İ	
•	3 A lens of soft mid brown	,				В	14.G	Gradi	.ng	GW		
	sandy clayey s	ilt at 5.2m.										
	4						!	ļ				
						U4	9.5					
_	5 -					кј	14.1					
			-	İ						Ì		
		***										
	6 -											
	7			Ì				╂		<del></del>		
1							ļ					
	•											
	8							-				10.04.04
	ţ	٠										
	9 –					КЈ	13.3	<u> </u>		<u> </u>		12.11.75 BH. 'Drv'   Casing 9.0n
				9.2	202	SP	16.4	Gradi	ing	ML	N = 50	13.11.73 BH, 'Dry'
	- See Sheet No.	2		ŀ	2		1					
•	10 STRENGTH	TEST RES	II TS	<u></u>		<del></del> -	<u>L</u>			<del></del>	<u></u>	
	Depth of Sample	Dully Danely	Dry Dens'y	M.C. (%)	C	omp. St (kN/m?	ress	Cohesio (kN/m²	ņ	ø		Remarks
	,		(kg/m ³ )	25.5	1	(kN/m	2)		1		Peaty tops	<del></del>
	G.L 0.45	-	-	16.2	+				_	<del></del> -	•	
	1.50 - 1.95	<del>  -</del>	-	<del>                                     </del>			•				Sand and g	
	4,50 - 4,95	<del>-</del>	<del>-</del>	9.5	+-				-+	-	Sand and g	ravel
		<del></del>		<del> </del>	- -			<u></u>			<del></del>	
			1	-	$\perp$							
		<del>-</del>		-								
					+				-+			
		<del> </del>	<u> </u>						$\dashv$		·	
		<u> </u>		<u> </u>				<del></del> =				
	COMPACTI	TC DNA NO			TS		<del></del>	· <del>-</del> · · · ·	- T			
	Depth of Sample	Compaction	Dry Dens'y (kg/:n3)	M.C. (%)	5	i.G. ,	Air Zoids C		O3 l/litro	рН	Re	emarks or other tests
				<u> </u>								
	GENERAL	REMARKS	Chisellin	g boulder	fro	n 5.8	to 9.0m	<del></del>		<del></del>		C87A 16272 TayFig

۱ ۱	•	LANCAS	HIRE COUN	ITY CO	UI	NCIL						o <u>367 ·</u>
	•	BOREHOL	E DATA SHEE	ET No	2	CF3						o
	SCHEME	A.56 DIVERSION	N - HASLINGDEN	TO ACCRI	NGT	On			,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		DEPTH	d 26•0 m
- 1			AINAGE 2710m C							•	GROU	ND LEVEL238+2m
ŀ	·————	oription of Strate	INAGE 109m OFF	Depth	l s	Sample	м.с	L	L/PL/PI	Class n	<del>,</del>	Water & Casing Details
10				Беви	12	зі Кеу	1.00	Co	ore Rec'y		1. 70.00	
ŀ	Hedium dense dark brown	ű.			H							WE. 10.0m (Trace)
ł	sandy SILT.											
11	- Becoming Satu	rated towards		í	1	SP					N = 17	
ŀ	the base.											
F								-				
2				12.0		KJ.	27.8	<u>!</u>			ļ	·
ł	Soft			j .	5		\	. j				
ţ	dark grey-bro	wn		-		SP B	33.1			ML/CH	N = 6	
ŀ	varved				Πi							
扌					$\ \cdot\ $							
ţ	silty CLAY.				3							
ŀ			-	i		SP B	28.9	'		-	N = 5	
ŀ	<del>_</del>	•			$\prod$		Γ.					
ŀ				1				į				
ŀ												
5	<del></del>										,	<del>                                     </del>
ŀ			•								1	
					$\  \ $						1	
13				16.0	E.				·		<u> </u>	
ſ	Dense to very					SP	5.9				N = 44	
ţ	derk grey-bro sandy GRAVEL					∄	9.3	Gra	ading	GF		
7	Occasionaily							- <del></del> -				<u> </u>
-	slightly clay									ļ		
t	Occasional la	-			20 M	SP B	10.5	;			N = 50	
8  -	silty fine to	medium SAND.		İ			<u> </u>					
ţ						il						İ
Ŀ												
?[-	_				ie		ļ			_	1	13.11.73 mH. 'Dry'
ţ					P-10-13	В	6.7					Casing 19.0m 14.11.73 BH. 'Dry'
ŀ					H							}
20 =	STRENGTH	TEST RESI	II TS				<u> </u>				<u> </u>	
-	Depth of Sample		Dry Dens'y	M.C.	С	omp. Str	ess	Cohe	sion	<u></u>		Parandi-
}-		Buik Dans'y (kg/m²)	(kg/m3)	<u>(%)</u>	-	(kN/m²	)	(kN/i 26	m2)	Ø 24°	Ordela O. P.	Remarks
1	12,20 - 12,65		-	28,1	$\perp$		$-\bot$	<u> </u>			Cuick S.B.	
+			<del>                                     </del>		+					-	<del></del>	
-					+				i	_		<del></del> ——————————————————————————————
					_						<del> </del>	
ŀ					$\dagger$	<del></del>		<del></del>				
+							<u> </u>					
-					<u>l.</u>							
-	COMPACTIO		Dry Dens'y	M.C.	T-		Air ,		SO ₃	,		
-	Depth of Sample	Compaction	(kg/m3)	(%)	+	S.G. V	oids	C.B.R.	gm/litre	рH	He	ernarks or other tests
		<u></u>			_				<u> </u>			
ļ			1				Γ	_				
Ì		<u> </u>	<u>                                     </u>		1		<del></del>	<u> </u>		1		
F	GENERAL	REMARKS	<del></del>		<del></del>		<del></del> - <del>-</del> -	<del></del>	<u> </u>	<del></del>		C87A 16:72 TayP
- 1	~-:Y-:!/\L											

		A.56 DIVERSIO	AINAGE 2710m	OFFSET 44	m WEST		• • • • • • • • • • • • • • • • • • • •					121
ŀ	·	SIDE ROAD CHA			T	olo T		· T ::	_/P!_/Pi	1		ND LEVEL23
20	D esc	oription of Stratt		Depth	Sam 1 23 F	Key	M.C.	Co	re Rec'y	Class'n	N. Value	Water & Casing
						КJ	12,6			`		
21	<del></del> -				53	U4	7.8	Gra	ading	GW	 	
22	<del>-</del>											
ļ	See Sheet N	io, 2				KJ U4	9.7 -					 
23	- 									<u> </u>		14.11.73 BH. 'Di Casing 22.5m
- [					3	SP	4.9				N - 50	15.11.73 BH, 'D
24	<u>-</u> ·					or	<b>4.</b> 7				N = 90	
												· 
25	<del>-</del>						<del></del>					
26				25.9 26.0	3	SP	_				N = 50 for 115mm	15.11.73
ţ	Very hard brok	en		26,0								Casing 25.0
ļ	light grey nedium to coar	se grained S	Andstone.									
					111					1	ļ.	1
L	Boulder?							Ì				
-	Boulder? - -					-		ļ				
	Bowlder?	,				) <u>-</u>						
	Bowlder?	•				-						
	Bowlder?					-						
	Bowlder?	TEST RESU										
	·		JLTS Dry Dens'y (kg/m³)	M.C. (%)	Comp. (kh	p. Stree	SS	Cohes (kN/n	sion n2)	0		Remarks
	STRENGTH	TEST RESU		M.C. (%)	Comp	p. Stree	ss	Cohes (kN/n	sion n2)	Φ		Remarks
	STRENGTH	TEST RESU		M.C. (%)	Comp	p. Stre	ss	Cohe:	sion n2)	0		Remarks
	STRENGTH	TEST RESU		M.C. (%)	Comp (kh	p. Stre	SS .	Cohes (kN/r	sion n2)	0		Remarks
	STRENGTH	TEST RESU		M.C. (%)	Comp(kN	p. Stree	SS .	Cohee	sion n2)	0		Remarks
	STRENGTH	TEST RESU		M.C. (%)	Comp (kN	p. Street//m ² )	SSS .	Cohec	sion n2)	Φ		Remarks
	STRENGTH	TEST RESU		M.C. (%)	Comp	p. Stre	SS	Cohes (kN/r	sion n2)	<b>O</b>		Remarks
	STRENGTH Depth of Sample  COMPACTIO	TEST RESUBUIK Dens'y (kg/m ³ )	Dry Dens'y (kg/m3)	RESULT	S							Remarks
	STRENGTH Depth of Sample	TEST RESUBUIK Dens'y (kg/m ³ )	Dry Dens'y (kg/m3)						SO3 gm/litre	Φ Ηα	Re	Remarks  Remarks or other tests

Metric		LANCAS	HIRE COUN	TY C	OUN	CIL					JOB N	o <u>367</u>
	-		E DATA SHEE				4			•		o 73A
	SCHEME	.56 diversion	- HASLINGDEN T	O ACCRI	ngron	· · · · · · · · · · · · · · · · · · ·					DEPTH	1 30,6 m
	LOCATION C	CHAINAGE 2747m	OFFSET 48m WE	Sï								ND LEVEL 227.1m
o	Desc	cription of Strate	um	Depth		mple	M.C		LL/PL/Pl Core Rcc'y	Class'n	N. Value	Water & Casing Details
0	FTLL Pieces of broke	n sandstone			See See	В	-					Starfed 26.4.74
1	Loose		<del>-</del>	0.7		В	_	G	rading	G₽		
İ	cottled orange- slightly clayey			-  1.5		w						WE. 1.5m (Slight) 26.4.74 SWL. 1.5m
. 2	Medium dense grey-brown											Not cased.
,	silty sandy GR	MANET .		- 2.5	A	SP B KJ	21.	4 G	rading	G₩	N = 20	27.4.74 SWL 1.2m 200mm ( Casing.
. 3	Loose layered											S.O. 3.Om
	mid brown/dark sandy SILT with fine parti		CLAY,		e e	SP B	30.	1 Gr	ading	ML	N = 8	
4	-Loose		<del></del>	3.9			<u> </u>	+				
	dark grey-brown	Į.				В	-	Gr	ading	ML		
	SILT with fine parti	ngs			Nate Ex	U4 KJ	31. 31.		ading	ML		27.4.74 BH. 1Dry!
. 🙃	of soft CLAY.	o .			2	ν.υ	1-21-				<u> </u>	Casing 5.0m
					Н	KJ	_				ļ	29.4.74 SWL. 4.9m
6	- Saturated			- 6.0		КJ		2				
	Very dense	Š			Test.	U4	30. 28.	- 1				
	layered mid brown/dark	arev-prova/			FI	KJ KJ	26.	5		SU		
7	mid grey	B,,				SP	-	+	· <del> · - · · · · · ·</del>	<del>-  </del>	N = 0 for 200mm	-
	slightly silty	84.45				В	12.	)   Gr	ading	SF		
8	fine to medium  with fine to me	-				SP B					N = 50 for 225mm	
ŭ	size stones.	<b>6</b>										29.4.74 Ld. 'Dry' Casing 8.1m
	Some lenses of	-31. CAND										30.4.74 BH. 'Dry'
9`	- very silty grave -	GIIA PWND.		1			-	-				
				1		SP	-	6 62	ading	GP.	N = 50 for 210mm	
10						KJ	'''	Jul	actus	01		
	STRENGTH	TEST RESU	JLTS									
	Depth of Sample	Bulk Dens'y (kg/m3)	Dry Dens'γ (kg/m3)	M.C. (%)		mp. Si kN/m		Coh (kN	esion /m2)	ø		Remarks
	4.5 - 4.9	-		29.5		-		7		33°	Quick S. B.	
	6.1 - 6.5		_	30.7		_		13		220	Quick S.E.	
								-				
Ì					+-		+			<del> </del>		
			-									
	<del></del>				+-							
				<del></del>	-							
		<u> </u>	-									
-	COMPACTIC	201 0012 07			<u> </u>	<del></del>			!		<del></del>	
	l		HER TEST R	ESULT M.C.			Air		SO2	1	<del></del>	
	Depth of Sample	Compaction	(kg/m3)	(%)	S.(	٠. <u>                                    </u>	√oids	C.B.R	gui/arre	pH		marks or other tests
	1.5	-	-	-		-	<u>-  </u>	<del>-</del>	Tracc	5.3	Water Samp	le
						_						
	I AENIEDAL E	SEALABLE										

Metric	•		HIRE COU									367
			E DATA SHE									73A
	00	A.56 DIVERSION CHAINAGE 2747a	• • • • • • • • • • • • • • • • • • • •	**********	INGT					*****		30.6 m
	LOCATION	O::ATN# 33: 2 /3 /2						·		<del></del>	GROU	ND LEVEL227.1 m
10	Desc	cription of Stratu	ım	Dabtl	h 1 2	Sample 3 Key	M.C.		PL/PI Rec'y	Classin	N Value	Water & Casing Details
ן טו	See Sheet No.	1										
11	Loose to media			11.1	100	SP B	=	Gradi	ing	GW	N = 50 for 240mm	30.4.74 EH. 'Dry' Casing 11.4m 1.5.74 EH. 'Dry'
12	silty gravelly with a soft of				Taries.	SP B	21.0	Gradi	ing	SP	ਮ = 14	Slight WE, 11.4m not sealed
13				13.3								
14	Loose mid brown fine to medium - Saturated.  Loose dark greaters.	a SAND		13.9		SP B	29.0	Gradi	.ng	SU ML	N = 5	
	slightly claye sandy SILT.			14.7		¥ 					·	·
15	Medium dense dark grey-brov slightly claye very silty fir	ey gravelly	SAND			SP B		Gradi	ng	SF	N = 20	
16	— with thin band	is of soft CL	AY.									
17	— _Saturated Medium dense dark grey_brow			17.1	19	SP B	-				N = 13	1.5.73 SiL 17.1m Casing 17.1a 2.5.74 SWL. 10.6m
18	silty sandy (	gravel.			EZ-IIIX	SP	-	Gradi	.ng	GW	N = 12	Not sealed
19	-  -											
20	-Saturated				N CH	SP	-	<u> </u>			N = 10	
.0	STRENGTH	TEST RESU	JL.TS									
	Depth of Sample	Buik Deps'y (kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	-	omp. St (kN/m²	! ess !)	Cohesio (kN/m²	) )	Ø		Remarks
					+							
					-			<del>.</del>				
												· · · · · · · · · · · · · · · · · · ·
-1844												
	COMPACTIO	ON AND OT			ŢŞ							
	Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	_	s.g. v	Air oids C	B.R. gn	SO3   n/litra	рН	Re	narks or other tests
	14.2	_		-		-	-	-	Kil	6.6	Water samm	ole
	GENERAL F	REMARKS	Form	erly Bor	e holi	e No. H	1 35/1				<del></del>	C87A L62/7 TayPig
	I GENERAL L	C/III/Siviai		,			- 77.					COLL COLIZ 181119

MELLIC			HIRE COU									367
	SCHFME		E DATA SHE ON - HASLINGDA									
	LOCATION		7m OFFSET 49m									ND LEVEL .227.1m
		cription of Strat		Depth	S	ample	-i iл.с.	L	L/PL/PI ore Rec'y	Class'n	N Value	Water & Casing Details
20	See Si	meet No. 2		20.1	1 2	3 Ke,	T	J (1)	HE NEC Y			
	Loose						! 					
21	_					B	-			<del> </del>		
	dark grey-brown	1				SP	16.0				N = 5	
	silty gravelly					В	_	Gra	ding	รบ		
22	and silty sandy	7 GRAVEL.										2.5.74 SML. 16.5m
	Occasional lens					CD.					N = 25	Casing 22.3m 3.5.74 SWL, 11.8m
. 23	gravelly silty	sandy CLAY.	•			57 1	12.0	<u> </u>			N = 29	
	[							}				
24	<u>.</u>											
						SP I	3 -				N = 23	
25	-	•					-					
						SP	14.3				N = 50	3.5.74 SWL. 15.6m
26	<u>.</u>					В	-		ding	GW	for 150mm	0.7.74 3WH- 12.1M
	-	.2										Not sealed. stronger W.E.
	<b>.</b>											at 25.7a
27	-			27.0								
	Medium dense					SP	18.5			SU/SF	N = 27	
29	dark grey-brown silty fine to m									-		
	-					25					40	
29	•				R(C.	SP	17.2				N - 43	
. 27	F											
	E	·	•									
30	STRENGTH	TECT DECI	I' TC			<u> </u>	<u> 1 </u>	<u> </u>	<del></del> .	<del></del>		
	Depth of Sample	Bulk Dens'y (kg/m ³ )	Dry Dens'y (kg/m3)	M.C.	Co	mp. St (kN/m²	reso	Cohe (kN/r	sion	ø		Remarks
	- Boptil of Bullipio	(kg/m³/	(kg/m3)	(%)		(kN/m²	2)	(KN/r	n2)			THEITIBIKS
					1						· · · · · · · · · · · · · · · · · · ·	
			<del>-</del>	<del></del> -	<u> </u>	<del></del>						
									t			
	:				-							
				-							· · · · · · · · · · · · · · · · · · ·	
	COMPACTION	ON AND OT	HER TEST I	RESUL'	ΓS						<del></del>	
	Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	s	.G. \	Air C	.3.R.	SO3 gm/litre	pH	Rer	marks or other tests
						_						
							<u> </u>					
	GENERALI	REMARKS	-: <del></del>				<del></del>					CETA 16777 TayPig

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Formerly horehole !!o. HA 25/1 Chiselling boulders 25.5 - 26.6m } hour.

SCHEME LOCATION		ion – Haslingi 47¤ offset 48						•		H ND LEMEL
Desc	ription of Strate	ım	Depth	Samp 1 2 3 K	le M	.c. 5	L/PL/Pi ore Rec'y	Class'n	N, Value	Water & Cas
See Sheet No. 3				13 1	SP				N = 38	
			30.6	$\prod \prod$					•	6.5.74 Sal. Casing 30.6m
<del>-</del> :			ŀ							7.5.74 S.W.L. 11.9m
			j				<b>S.</b>			Se Walls 110 Ym
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-										
STRENGTH						<del></del>				
Depth of Sample	Bulk Dens'y (kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	Comp (kN	. Stress /m2)	Coh (kN	esion /m²)	Ø	·	Remarks
						<u> </u>				
,				<del>                                     </del>	-				<del></del>	
						<b> </b>		— <u> </u>		
				-		<del> </del>				
				-					·· ———	
COMPACTIO	TO DNA NO			S		·				
Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	S.G.	Air Voids	C.B.R	SO3 gm/litre	рН	Re	marks or other te
· <del></del>				1	-		-			<del></del>
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Metric		LANCAS	HIRE COUN	ITY C	OU	NCIL	-				JOB No	o <del>35</del>	7
	-	воленоц	E DATA SHEE	T No	.1	OF	2			•		o73	
	SCHEME	A.56 DIVERSIO	N - HASLINGDEN	TO ACCE	RINGT	ON						i	
	LOCATION	CHAINAGE 2747	m OFFSET 12m	/EST	,						GROUI	ND LEYEL.	225.6 m
0	Desc	cription of Shratu	ım	Depth	n   S	ample 3 Ke	<u>.</u> М.	с.	LL/PL/PI Core Rec'y	Class'n	N Value	l	Casing Details
1	FILL Black ash, cl gravel size s				STOPINS.	В		2,6)	_			Started 20	. 9. 73
2	Medium dense dark grey-bro			1.2	re-comes	SP B	9 11.	6.		,	N = 23	WE, 1,5m (	Slight)
	L .	ly clayey mat:	rix.									20.5.73 BH	. †Dryt
. 3						SP B	14. 13.	6	Grading	GC	N = 23	Casing 3.0	. Dry
4	<u>_</u> .				Self-Sec	SP	13.	1			N = 29	WE. 4.5m (	Slight)
				5.6									
6	Loose  mid grey-brow layered sandy and very silty fi	SILT			Director	SP	В 23.	0	Grading	ML \$F ČL	N = 7		
		tings of CLA	ſ.		AY GRAH	SP	В 29.	0		-	N = 9	·	
8	-  -  -				2								
9	-	oken, weathere	ed,	9.2	EC CVA	SP	13.	6	<del></del>		N = 35	21.9.73 BH Casing 9.0 22.9.73 BH 22.9.73 BH Casing 10.0 24.9.73 BH	Dry:
10	STRENGTH	TEST ROSI	II TS			<u> </u>	<u>l</u>				<u> </u>	<u> </u>	
•	Depth of Sample	Bulk Dens'y (kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	С	omp. S (kN/n	Stress n2)	C: (k	ohesion N/m²)	0		Remarks	
	-				-								
	COMPACTIO	TO DNA NO	HER TEST F	RESUL	TS								
	Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	- !	S.ს.	Air Voids	C.B	R. SO3 gm/litre	ρΗ	Re	marks or othe:	tests
								<u> </u>					
	GENERAL	REMARKS											87A L6272 TayFte

LOCATION	CHAINS 2747	u OFFSET 12m	west							GROU	ND LEVEL 225.
Desc	ription of Strate	ım	Depth	Sam 123	ole Key	M.C.	L Co	L/PL/PI pre Recty	C¹ass'n	N Value	Water & Casing (
See Sheet No. Boulder or be					K _e T					N = 50 for 75mm	24.9.75 Casing 10.7m
			10.7		SP					for 75mm	Casing 10.7m  S.W. L. 6.0m 0. V.
STRENGTH Depth or Sample	TEST RESU	Dry Dens'y	M.C. (%)	Com	p. Street	~5	Cohe	esion	o l		Remarks
· ·	(kg/m5i	(kg/m3)	(%)	(kt	V/m²)		(kN/	m2)			
COMPACTIO	N AND OT			ſS							
Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	S.G	Vc	vir oids C	C.B.R.	SO ₃ grn/lit-e	На	Re	: arks or other tests

5 Hours chiselling 10.0 - 10.7m

		E <b>HIRE COL</b> LE DATA SHI						•	B.H. N	o
SCHEME		N = HASLINGDE						0.5		
LOCATION	•••••								ND LESTEL215.4	
Desc	ription of S*rat	um	Depth	Depth Sample			L/PL/PI ire Rec'y	Class'n	N. Value	Water & Casing D
FILL Very dens	brown clays	y gravel		Si					N = 50	Starte1 22.9.75
	t brown fine	grained	8:55							
SANDSTONE,	•	-								
									-	 
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				<b>                                     </b>						
									<b></b>	
STRENGTH				· · · · · · · · · · · · · · · · · · ·						
Depth of Sample	Bulk Dens'y (kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	Comp. (kN/	Stress m2)	Cohes (kN/n	sion n2)	Ø		Reinarks
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			1							
COMPACTIO	או אווי טיז	שרט זבכד שבט זבכד	DECI II	<u> </u>			1			<del></del>
Depth of Sample	Compaction	Dry Dens'y	M.C.	S.G.	Air Voids	CRR	SO ₃	рН	Pa	marks or other tests
Soparior dempie	Jon paction	(kg/m3)	(%)		Voids		gm/iitra		116	
1	l	ļ		<del></del>			<u> </u>	<del> -</del> -		
<del></del>						1	!			

sandstone dips 20 North.

•	Metric	1 miles		HIRE COUN								o <u>367</u>	
•				E DATA SHEE								o	
•		SCHEME	HAINAGE 2761m	- HASLINGDEN T OFFSET 7± EA	37					••••	•	7.2 ND LEVEL 215.6	
į			cription of Stratu		Depth	Sample	1/1.0	r L	L/PL/PI	Class'n	N Value	Water & Casing Detail	
	0					1 2 3 Ke	Y Y	C	ore Rec'y	10103311	T Tulde	Started 22, 9, 75	_
1		Open hole to 5	.Ош.	,	0.2							Uncased hole.	
•	1	Hard					<u> </u>						
		intact mid green-grey	,		-					}			
•		(with ferrugin	ous staining)								ĺ		
1	2	fine grained			·					<del>                                     </del>	<del></del>		
1	•	Bodding dippin									ļ		
	. 3	Becoming softe with clay fill					ļ			<u> </u>	<u> </u>	22.9.75	
;		Occasional ban										23.9.75	
•		sandy mudstone											
:	4		•							1		90% Return of	
1							-	İ				Flushing water. Reducing to	••
	5	Hard mid green	grev cross b	edded fine	5.0				. –	<del> </del>		Zero et 7.0a	
				organic partin	ड़ा 5.5	A Control	İ			1			
Ì	6	Soft to hard very broken to	, hwoken		***			   50°	0 - 7.2m				
		dark grey (wit	h ferrugizous					Re	с'у 45%		ŀ		
1	-	thinly bedded With thin band				15 2						00.00	
4	7	grained SANDS			7.2					-	<del> </del>	23.9.75	
da			es.										-
	8	-					ļ						
7		ţ								j	]		
	9	<u> </u>					ĺ	1					
4	,	-							<del></del> -				
	,	F			ļ								
	10	STRENGTH	TECT DECL	U TC		<u> </u>				1	<u> </u>		
1,		Depth of Sample	Bulk Dens'y (kg/m ³ )	Dry Dens'y (kg/m³)	M.C. (%)	Comp. (kN/r	Stress	Coh	esion	Ø		Remarks	
		Depth of Sample	(kg/m ³⁾	(kg/m3)	(%)	(kN/i	m2)	(kN/	(m2)			Remarks	
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4	ta telu, ee .							L					
d	•	COMPACTION	ON AND OT	HER TEST R	ESUL ⁻	ΓS							_
٠		Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	S.G.	Air Voids	C.B.R.	SO ₃ gm/litre	рН	Re	emarks or other tests	_
ı													
•;													
: . [1			<u> </u>			<u> </u>							
į		GENERAL	REMARKS	Rotary Boreho Description o				5 0- 4	ledward fo		] flushing	, CB7A 16272 Tey	Pig
,				and machine				,,, OH G		Jm Will	wanting	<del>-</del>	

Vietric		LANCAS	HIRE COU	NTY CO	OUN	ICIL						o <u>557</u>	
	÷		E DATA SHE									o	
	SCHEME				INGT	ON	• • • • • • • • • • • • • • • • • • • •	•••••	,			9.5	
	LOCATION	CHAINAGE 2827	EAST	<del></del>					<del></del>	GROUND LEVEL 216, 3		m	
	Desc	cription of Stratu	m .	Depth	Sa  1 2 3	ample 3 Key	-{ м.с.	.   L	LL/PL/PI cre Rec'v	Class'n	N Value	Water & Casing Detail	İs
O	FILL.		_		11	SP	-				N = 29	Started 14.9.73	_
j	Black ash with medium dense si			ŀ	E S		ĺ						
1	very silty sand					В	9.9	-				14.9.73 BH 'Dry'	
								İ			İ	Casing - 1.2m	
					on ad language in the second	SP	26,2				N = 7	15.9.73 FH 'Dry'	
2	. Very soft	<del></del>		2.0		134	34, 2	<del> </del>	38/15/23	- ci			
	mottled orange,					""	742		)0/1 <b>7</b> /23	61	1		
3	with bunds of a	sandy clayey	SILT.	- 3.0			Ì						
	Soft mid grey-h			7.0	HI	КJ	41.8			ML			
	Loose mid grey-		SAND	3.5		U4	36.7	G	rading	SF			
4	with reaty incl	lusions.		4.0				<del> </del>		<del> </del>	<u> </u>	W ₀ E ₀ 4 ₀ Org	
	Medium dense			SP	117.6	1			N = 19	S.W.L. 3.9m (10 mins			
	dark grey-brown				$\prod$	B	(10.	ا الا	rading	GW			
5	clayey silty sa GRAVEL.	andy	•				<u> </u>				<del> </del>		_
				İ		СР	İ		•		N = 11	15.9.73 S.W.L. 3.9m	
6	_				Mary Land	CP	-				11 - 11	Casing - 5.5m	
٠	•				7	В	12.2					17.9.73 S.W.L. 2.0m	;
				1.	Ž		1						
7	- <b>.</b>	· · · · · · · · · · · · · · · · · · ·	•	6.9	E A		ļ						<u></u>
	Loose dark grey-brown	n		Ì	H	U4 KJ	27. 3						
	varved clayey			İ	725.11	SP	-				N = 20		
8	_layered with medium dense da					В	-	G	rading	ML			_
	clayey silty									ML/S	F		
9													
						บ4	24.4	3	3/19/14	CL		17.9.73	
	<u> </u>	9.5	胃	КJ	22.1	1				Casing - 8.0m			
. 10.				L	Ш	<u> </u>	1				<u> </u>	S.W.L. 2.0 O.W.C.	=
	STRENGTH	<del></del>			Τ.				<del> </del>		<del></del>		_
	Depth of Sample	Bulk Dens'y (kg/m3)	Dry Dens'γ (kg/m3)	М С. (%)	C	omp. St (kN/m²	TPSS 2)	Coh (kN	resion /m²)	<u> </u>		Remarks	
	2.00 = 2.45	<u> </u>		34.2				_12	_ 14		LVT (3)		
-	3,50 - 3,95		-	36.7		-	<u> </u>				Sand and s	iR.	
	6,90 - 7,35	-	-	23.4		-		_		-	Silt		
	9.15 - 9.60	_	-	24.4		_		-		_	Silt		
		<b> </b>							***				_
		<del>                                     </del>			1-							·	-
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	COMPACTION	T	<del></del>	RESULT M.C.	7		۸۰. ۱		SO ₃				
	Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	s	.G. ,	Air Voids	C.B.R	SO3 gm/litre	рН	Re	emarks or other tests	
	G.L 1,50	D4.5 C.B.R.	1934	9,9	<u> </u> -		-	473			C.B.R.		
	4.0			*	<u> </u>	_	-	<u> </u>	Sligh Trace	t 7.0/7.5	Water samp	ole	
•		<u> </u>											
	GENERALI	REMARKS					~~~~~					C87A 16272 Tay	, , ,

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•	LANCAS	SHIRE COU	NTY (	cou	NCIL				_	JOB N	o. <u>367</u>		
		LE DATA SHE									o		
SCHEME	A.56 DIVERSIO										GROUND LEVEL214.6		
	CHATHAGI: 2867												
	escription of Strat	ะนทา	Dept	th S	ample 3 Key	M.C	: ,	LL/PL/PI Core Rec'y	Class	'n N Value	Water & Casing Detail		
TOPSOIL (0	.2m) on silty	SUBSCIL		11	3 Key	+-	<del>- -`</del>	JOI C TILL	<del>'                                    </del>	1,4	Started 2, 10, 73		
Soft dark	grey silty CLA	Υ.	0.3	14	<b>ਹ</b> 1 <u>‡</u>	I				•	Uncased hole		
	fibrous PEAT		- c.7	' Ħ	KJ KJ	62. 225	7	87/45/42	Mii/i	H			
becoming s	ilty at 1.5m			-									
				Ħ	V F.J	73.	5				W.E. 1.6m		
GRAV	n		2.0		КJ	_31	2	46/29/17		DI	S.W.L. on completion		
01517	5 <u>1</u>	•	2.1		KJ KJ	-			GU		1.4m		
		•	İ	H		1	.			1	<u> </u>		
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STRENGT	H TEST RES  Bulk Dons'y (kg/m ³ )	ULTS Drv Dens'y	1			<del></del>							
Depth of Samp	M.C. (%)	C	omp. S (kN/m	tiess 2)		nesion (/m2)	Ø	Remarks					
0.32 - 0.3	1733	1250	39.9		38		19	)	-	38 V.C.T.	(2)		
		L								·			
<del></del>										•			
					-								
				_				<del></del>					
COMPACT	ION AND OT	L LUED TEST	DEGIL	<u> </u>		!							
<del></del>		Dry Dens'y	M.C.			Air	C B D	SO ₃	ا باء		naula nu nalina na na		
Depth of Samp		(kg/m3)	(%)	-`	5.G.	Voids	C.B.R	' gm/litre	<u> </u>		narks or other tests		
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#### DETAILED RECOMMENDATIONS

#### Main Route and Adjoining Slip Roads

### Minus 500m to plus 780m (Syke Side)

Shallow to medium cutting - maximum depth 8m on centre line preceding a short length of shallow embankment - maximum height 2m on centre line.

Over this section low to intermediate plasticity clays to the east give way to high plasticity varved clays to the north west. The underlying bedrock is shaley mudstone at a depth of about 20m. Due to past activities connected with roadworks and sewers the surface layers over much of the area near the roundabout consist of filling, mostly firm clays with some broken rock. Water entries were generally slight.

Topsoil where present should be stripped from the whole of the area of the main route and the northbound "entry" slip road. Depths are variable from nil up to 400mm. An average of 110mm is suggested as far as chainage 500m. Between chainages 500m and 780 an average of 225mm would be a better estimate.

Excavation for the cutting will be entirely within the drift and the overlying fill. The strengths of the clays are extremely variable and only 15% of the excavated material is expected to be suitable for re-use arising from mainly the lower third of the cutting south of chainage zero. Standard side slopes of 1 in 3 are proposed.

For standard flexible and composite construction a 400mm thick 'subgrade layer' of S.F.1 material is proposed for the main route as far as chainage 150m. Between there and chainage 630m soft varved clay will be present at excavation level and the 'subgrade layer' will require thickening to 600mm. The short length of main route on embankment should be constructed to formation level entirely in 'rockfill, or S.F.4 the first layer being placed 600mm thick as a starter layer. Standard construction is proposed for the northbound "entry" slip-road, requiring a 'subgrade layer' (S.F.1) thickness of 600mm in cutting.

For rigid construction the 'subgrade layer' thickness would be 225mm throughout.

When constructing tapering widths of less than 3m where the main carriageways tie in to the existing slip roads lean concrete to Clause 807 should be used to replace the sub-base and part of the roadbase to within 160mm below finished road level.

#### Syke Side Southbound "Exit" Slip Road.

Shallow cuttings-maximum depth 3m on centre-line with short lengths of shallow to medium embankment - maximum height 8m on centre-line.

To the west of chainage 350m the underlying material is predominantly soft, high plasticity varved clay whilst to the east there is an abrupt change to stiff low plasticity boulder clay. A thin surface layer of peat was found in the area of borehole 16. Water entries were generally slight.

Topsoil should be stripped from the areas in cutting - an average of 150mm is available. Where the embankment height exceeds 3m topsoil-strip is not necessary technically but could be undertaken if there is a shortage of topsoil.

None of the material excavated from the cuttings is expected to be suitable for re-use. Side slopes of 1 in 3 are proposed.

For excavating the thin surface layer of peat in the vicinity of chainage 400m a quantity of 100m³ should be allowed. For backfilling the excavation to natural ground level 'rock fill' may be used.

Where the embankment between chainages 300m and 375m spills over into Syke Mill Lodge it will be necessary to clean out the soft material from the bottom and vegetation from the sides of the lodge. Filling material tipped below water level should be approved granular material complying with Clause 605 Table 2 "Free Draining Material". The south batter of the same embankment will be unstable between chainages 275m and 380m due to the presence of a surface layer of soft varved clay some 3m - 6m thick. A toe trench will be necessary here, taken down to the stiff boulder clay and backfilled to natural ground level with 'rock fill'. Side slopes of 1 in 2 are proposed for all lengths of fill.

For standard flexible and composite construction a 400mm thick 'subgrade layer' of S.F.1 material is proposed from Rawtenstall Road as far as chainage 400m. West of this point the 'subgrade layer' thickness should be increased to 600mm on account of the soft varved clays present at excavation level.

For standard rigid construction the 'subgrade layer' thickness should be 225mm throughout.

For the short length of embankment between chainages 350m and 410m a 600mm thick starter layer of 'rock fill' material will be required.

For excavating soft material from the pond at chainage 165m a quantity of 50m³ should be allowed. Backfill should be in S.F.1 material.

The strength of the existing culvert which crosses the route near chainage 370m should be checked in relation to the additional 4m of fill which is to be placed in that locality. In view if the toe trench requirement it may be beneficial to re-route this culvert. Also the two sewers which cross the line in the same vicinity will require protection during construction of the embankment.

## 780m to 1225m (Victoria Park)

Medium cutting - maximum depth 9m on centre-line.

The material in this cutting can be considered in two parts. From chainage 780m to Helmshore Road interbedded deposits of soft high plasticity varved clay and loose saturated silts and sands totalling some 30m in thickness overlie firm to stiff high plasticity varved clay. North of Helmshore Road interbedded gravelly sands and silty sands have been proved to depths of up to 12m overlying silt. Although much of the silt and sand appeared to be saturated no strong water entries were evident during drilling.

Topsoil thicknesses are very variable over this length. In Victoria Park topsoil depths average 1.0m. South of the Park some 350mm of topsoil overlie approximately 500mm of peaty organic loam. The latter could be stripped along with the topsoil in the event of a shortfall. North of Helmshore Road the situation is different; depths are much less, averaging only 100mm.

South of Helmshore Road excavation is likely to be extremely difficult and the use of scrapers is not envisaged. In spite of the weak water entries recorded during drilling seepages of groundwater are expected to be considerable during excavation causing a great deal of erosion to batters and slumping of working faces. Attention will have to be paid to temporary drainage and to early soft area treatment on the slopes coupled with permanent face drainage. North of Helmshore Road conditions should be easier and the use of scrapers possible especially if material can be taken downhill towards Waterfoot.

With extensive face drainage it should be possible to bring the ground water sufficiently under control to permitseeding of the slopes to take place. Normal topsoiling is not recommended because of the tendency of topsoil to slide when saturated. Preferably seeding should be carried out hydraulically, coupled with a light scattering of topsoil material, say 25mm. With these provisions standard side slopes of 1 in 3 should be satisfactory.

The material to be excavated north of Helmshore Road would be suitable if drained, but seeing that natural drainage is more likely horizontally than vertically, drainage will be slow. This material has therefore been classified as unsuitable along with that from the remainder of the cutting.

For the carriageway standard construction on a 'subgrade layer' of S.F.1 (400mm flexible, 225mm rigid) is proposed. An additional excavation of 300mm followed by stabilisation and backfilling with S.F.1 will be necessary throughout this cutting in view of the wet silt and sand, and soft varved clays, to be expected at formation level.

Backfilling to formation drains ahould be in Type B material but because of the preponderance of wet silt and fine sand the pipe and filter media together should be completely wrapped in a proprietary non-woven filter fabric.

An external french drain will be required along the top of the east batter where the natural ground falls towards the cutting; backfilling as for formation drains.

# 1225m to 2000m (Waterfoot and Spring Vale)

Medium to high embankment - maximum height 14m on centre line.

This embankment takes the road into Spring Vale to follow the line of the valley and crosses Swinnel Brook twice in the process.

No rock was found along this length. The bridge boreholes which reached depths in the region of 30m revealed mainly loose saturated silts and sands, and very soft to firm varved clays. South-east of Grane Road this material was overlain by a thin layer of gravel, and in the vicinity of Flip Road by up to 8m of boulder clay. Sporadic pockets of gravel were found close to Swinnel Brook. Some surface peat was located in boreholes P3, 40 and 47.

South-east of Grane Road water entries in the boreholes during drilling were not strong although the granular material was clearly saturated below a certain level. North of Grane Road water entries were much stronger and the final standing water level was close to ground level as would be expected close to the Brook. Water entries from the deeper silt tended to rise to a high level and were artesian in the case of poreholes 5615/3 and 5616R/1.

Around Grane Road, Coronation Street and Waterside Road where five blocks of terraced houses are to be demolished shallow depths of fill (mainly ash with sand and soft clay) occur over the site. Underground constructions such as cellars are present. Alongside Spring Vale Mill two underground air-raid shelters are shown on the aerial survey. Elsewhere the building of various structures, some since demolished, has led to the disturbance of the ground surface in several places. Depths of fill of up to 4.7m (B.H. 53) have been recorded. There is a well 24m west of the centre line at chainage 1697m.

Depths of topsoil are variable. Where, encountered i.e. at about half the borehole sites, depths of from 75mm to 400mm were present averaging 145mm, Topsoil should be stripped from the whole of the area between chainages 1225m and 1460m (average 120mm); also from the abandoned railway embankment where the new fill abuts it. Elsewhere topsoil—strip is optional (average 150mm, where it is present).

Although the existing railway embankment which the new route parallels appears to be stable it was probably built slowly. Borehole information obtained along this section indicates that the higher lengths of embankment could pose stability problems during construction if built too quickly. Particularly over the two lengths 1220 - 1480m and 1500 - 1700m the rate of filling may be critical and must therefore be controlled so as not to exceed the rate at which the underlying varved silty clays/clayey silts can gain the required strength by consolidation. It is estimated that a rate which gave steadycompletion over a period greater than twelve months would be satisfactory. The installation of piezometers to measure the changes in pore water pressure as construction proceeds is strongly recommended. All but the top 10m of fill should be in granular material.

Some small amounts of differential settlement can be expected from the alluvium close to Swinnel Brook and from the pockets of old fill which are allowed to remain. It is not thought necessary to remove the old railway embankment where the new route crosses it. It should be sufficient simply to bench the existing slopes as construction of the new embankment proceeds and work any loose material into the new fill. The parts of the old embankment which flank the new may be landscaped if desired. The trapped valley which may still remain between the two fills in the vicinity of Flip Road should be filled with unsuitable material sloped away from the east verge at 1 in 20.

Layers of peat were found near the surface in boreholes P3, 40, 47, 47E, 47H and 47K. Small pockets of peat were found within the soft surface deposits in some of the other boreholes in the same areas. Before any fill is placed, these surface deposits of peat and soft soil must be removed and replaced by free draining granular material to Clause 605 Table 2. Quantities involved are 5500m³ between chainages 1250m and 1360m on the west side (maximum depth around 2.7m) and 5600m³ between chainages 1515m and 1600m on the east side (maximum depth 3.8m).

Provision for underdrainage of the embankment will have to be made between chainages 1220m and 1360m where the line traverses a series of springs in the hillside. Treatment should take the form of 100mm dia. porous pipes laid 600mm deep in herringbone pattern to fall to the nearest watercourse. Trenches should be backfilled with Type B material. Both the porous pipe and the backfill should be completely wrapped in a proprietary non-woven filter fabric.

A starter layer, consisting of 'rock fill' placed 600mm thick in one operation, will be required across the full width of the embankment (except where peat is replaced by free draining granular material) between chainages 1220m and 1360m.

For cleaning out the ditches/watercourses at chainages 1315m and 1600m quantities of 170m³ and 120m³ respectively should be allowed.

The effect of settlement on the existing sewer and proposed culvert at Waterside Road should be taken into consideration, (see foundation report for culvert).

All the material excavated from the short lengths of slip roads which are in cutting will be unsuitable for re-use. For these carriageways standard construction on a 'subgrade layer' of S.F.1 (400mm flexible, 225mm rigid) is proposed.

The proposed shallow retaining wall alongside the northbound "exit" slip road at Grane Road Junction may be satisfactorily rafted in the surface layer of gravel. The wall may be of reinforced earth, or of precast concrete cribbing or a conventional reinforced concrete type, but whatever the type, it should be constructed at a late stage in the contract so as to avoid disfigurement due to settlement of the adjoining embankment.

# 2000m to 2560m (Carrs)

Shallow to medium embankment - maximum height 5m on centre line.

Along this section the proposed route parallels and partly coincides with the abandoned railway line. The site is at present used mainly for playing fields and allotments. The area for the playing fields has been levelled by tipping refuse (mainly black ash, glass, broken stone and some soft clay) to a depth of up to 4m. Unfortunately no attempt was made at the time to strip off the surface layer of peat which now underlies the fill in thicknesses up to 1.4m. There are also small pockets of peat in the underlying gravelly clay.

The lithological structure along this section is very mixed due possibly to the valley having been a glacial outwash channel, Soft, sandy and gravelly clays are interbedded with sands and gravels, sometimes silty or clayey, sometimes well graded and clay free.

Frequent water entries were experienced when drilling along this section and the final standing water level was generally found to be within one or two metres of the natural ground level. Some water entries rose up into the filling.

Topsoil should be stripped from the whole of the area of this embankment. Depths are generally shallow varying from 50mm to 200mm. An average of 100mm should be allowed. It is recommended that the underlying organic sub-soil which exists in some areas should be stripped also. In these areas the combined depth of topsoil and subsoil reaches 300mm - 400mm.

Before any new filling is placed between chainages 2000m and 2100m the old filling should be removed (it can be re-used elsewhere) and the underlying peat and organic material excavated out and replaced by approved free draining material to Clause 605 Table 2. The quantity of old fill which may be re-used after excavation is estimated as 7000m³ and the volume of peat and organic soil requiring removal and replacement 3500m³.

Between chainages 2225m and 2400m on the northbound carriageway and between 2200m and 2560m on the southbound carriageway the filling should be completed to formation level wholly in S.F.1 material, the small areas in cutting being excavated sufficiently to accommodate a minimum of 600mm of S.F.1 material. Elsewhere the embankment should be completed to formation level in the normal way. The appropriate standard construction should be laid thereon in each case.

The strength of the existing culvert which crosses the route near chainage 2100m should be checked in relation to the additional 4m of fill which is to be placed in the locality. It is assumed that a new culvert will be required at chainage 2475m, the existing railway bridge being demolished.

# 2560m to 2800m (North Hag)

Deep cutting - maximum depth 24m on centre line.

Over this short section the new route cuts through a promontory known as North Hag following the line of an abandoned railway tunnel. Here a sequence of flaggy sandstones (Lower Haslingden Flags) rests on sandy shaley mudstone above the Holcombe Brook Coal. Both rotary and shell and auger boreholes were drilled in this location and indicate that whilst the bedding of the rock dips approximatley 5° to the north the rock head dips approximately east - west at about 10°, at a level of about 7m to 2m above the east and west verges respectively.. Only the sandstone will be seen during excavation for the cutting. The mudstone lies a few metres lower. The drift material overlying the rock consists of stratified deposits of silty sand and silty sandy gravel interspersed at mid height with layers of silt and varved clay. The gravel tends to have a slightly clayey binder. Some of the boreholes show a thin layer of boulder clay immediately above the rock.

Water entries in the boreholes were slight, with final standing water levels at or below finished road level except where the rockhead is higher. In contrast the abandoned railway tunnel (which has a formation level similar to the new route) is fairly wet. It is concluded that the line of seepages into the tunnel probably coincides with the intersection of the tunnel lining with the rock-head.

Depths of topsoil over the site vary from 75mm to 275mm with an average of 185mm.

Granular deposits both above and below the silt and varved clay appear to be well drained and have been classified as suitable for re-use as filling. It is thought unlikely that extraction of any of these granular deposits for use as special materials would be economically feasible.

Sandstone rock will be encountered in excavation between chainages 2600m and 2780m approximately. Some of the more weathered layers will be rippable but some of the harder sandstone will require blasting. In view of the granular nature of much of the drift material it is proposed that side slopes of 1 in  $2\frac{1}{2}$  be adopted. The slope in the sound rock on the east side may be steepened to 1 in  $1\frac{1}{2}$  if desired but in either event the sandstone may be stepped along its bedding planes to present an outcropping appearance.

Flatter slopes than these should win additional suitable material. It is suggested also that the area remaining enclosed between the new route, Bridge Street and the diverted Commerce Street could be used as a source of suitable material, and landscaped on completion.

On the basis of slopes of 1 in  $2\frac{1}{2}$  the excavated material from the main cut is expected to comprise:

Soft suitable	50%
Unsuitable	40%
Rock	10%

Care should be taken when excavating around the existing tunnelto unload the structure equally on both sides.

The area of rock at formation level is considered to be sufficient to make it worthwhile modifying the carriageway construction, as shown in Tables 3 and 6 on pages 14 and 15. Although the rock is not frost susceptible it will be susceptible to weathering. It is therefore recommended that as soon as the rock has been excavated to formation level it should be covered with a blinding and regulating layer, 160mm thick, of lean concrete to Clause 807S.

Excavation for formation drains will encounter rock between chainages 2615m and 2790m in the west verge and 2590m and 2770m in the east verge.

Some allowance should be made for face drainage where silt is exposed in the batters, and where sand overlies clay.

North of chainage 3900m peat will be found below formation level to a depth of 5.0m and 20,000m³ will require excavation and replacement by free draining granular material to Clause 605 Table 2. The depths to which the excavation of peat is to be taken are summarised at the end of the report. The width of the peat excavation and the temporary side slopes should be determined as described for Holden Vale (page 31). It is assumed that the existing H.P. gas main to the west of this length will have been diverted before excavation commences otherwise its safety will be in question.

For the finished cross-section standard side slopes of 1 in 3 (cut) and 1 in 2 (fill) are proposed except in the vicinity of Hud Hey Road Bridge and Carterplace Hall where cutting slopes of 1 in 2 are preferred in order to limit the land take and the demolition of private property.

To maintain a 1 in 2 slope between chainages 3440m and 3550m, is, on the west side, a drainage problem basically. Borehole No. L94 shows soft to firm clay to 2.5m, well-drained slightly clayey silty sandy gravel to 6.1m, and silty sand to 10.5m, (saturated below 6.9m); formation level being at 8.2m. nearby bridge boreholes both show relatively slightly higher water tables, 2.9m and 3.1m above formation level, in silty sandy gravel. It is envisaged that verge drains, set at the normal level for draining the formation, will be adequate for permanently lowering the water table in this area to a satisfactory level. It would be prudent, however, to make provision (on the west side only) for 5% replacement of the cutting slope material by heavy buttress drains rising from the toe to the recorded standing water level. On the east side the batter below the bridge bank seat requires making up in fill material in which case a slope of 1 in 2 can be safely achieved by specifying suitable granular material. A small pocket of peat found in borehole 5617/5 will require removal before the approach fill is placed - see Part II.

Most of the glacial deposits along this section are granular and have been classified as suitable where above the standing water table. Allowance has been made for the effect of cohesive layers in the areas where these occur. It is thought unlikely that extraction of any of the granular deposits for use as special materials would be economically feasible.

The excavated material is expected to comprise:

Soft suitable 80% Unsuitable 20%

For the carriageways throughout this section standard construction on a 'subgrade layer' of S.F.1 material (400m flexible, 225m rigid) is proposed. In the areas of fill the void between original ground level after topsoil strip and the underside of the 'subgrade layer' should be made up using suitable granular material. Where any of this fill abuts a side slope of the existing railway cutting the old side slope should be benched as construction proceeds and any loose material there worked in with the new fill.

Backfilling to formation drains should be in Type B material. Both the porous pipe and the backfill together should be completely wrapped in a proprietary non-woven filter fabric.

## Rising Bridge Roundabout

Part cut and part fill - maximum depth of cut 16m maximum depth of fill 9m.

The site for the roundabout is best considered in two parts. The part which lies to the west of Blackburn Road is in cut and the ground conditions are similar to those for the previous section - hummocky glacial deposits of mainly granular soil with occasional pockets of peat. The soil appears to be very well drained - no water entries were found in any of the boreholes.

The part of the roundabout which lies to the east of Blackburn Road is in fill occupying part of the site of a glacial drainage channel. Three boreholes (P11 - 13) show up to 3m of peat overlying mainly granular material. A fourth borehole L103 shows only firm to very stiff boulder clay before bedrock at 6.8m. Although this channel is now a trapped valley it appears to be relatively well drained, possibly via the underlying Lower Haslingden Flags. During the winter months standing water level appears to be approximately at ground level.

Considering firstly the western part of the site, topsoil depths vary considerably from 100mm to 400mm with an average of 250mm. Topsoil should be stripped from the whole of this area.

Standard cutting slopes of 1 in 3 are proposed for this part of the roundabout area.

The material to be excavated is mainly of a gravelly nature (soft to hard weathered sandstones and mudstones) but is layered with several lenses of sand, silt and clay. Although all this material has been classified as suitable some allowance has been made for the difficulties which will be experienced in working with it in wet weather, and for the occasional pocket of peat. The excavated material is expected to comprise:

Soft suitable

80%

Unsuitable

20%

For the carriageways standard construction on a 'subgrade layer' of S.F.1 material (400mm flexible, 225mm rigid) is proposed. No peat was found below formation level in any of the boreholes.

For backfilling the verge drains Type B material is proposed with both the porous pipe and the backfill together completely wrapped in a proprietary non-woven filter fabric.

Considering secondly the eastern part of the site, topsoil should be stripped from the whole of this area. Depths vary from 150mm to 500mm with an average of 200mm.

A surface layer of peat up to 3m thick is present over much of this area and should be removed before any fill is placed. The quantity is estimated as 15,750m³. For backfilling the excavation it is recommended that the granular material to be excavated from the opposite part of the roundabout be used in view of its close proximity. This material will be suitable for placing below standing water level if necessary.

Standard side slopes of 1 in 2 are proposed for the fill in this area. Where the new fill abuts the existing embankment carrying Blackburn Road the old batter should be benched as construction proceeds and any loose material worked in with the new fill. In any location where the height of fill required is less than 1.5m, measured from existing ground level prior to soil strip to proposed finished road level, 'rock fill' should beused as the fill material.

It is assumed that the existing H.P. gas main and sewer which cross the site will be diverted or given adequate protection before any fill is placed.

Where the new carriageways join into the existing Blackburn Road the latter surface will require regrading to the new, higher, levels. Where the amount of lift required is between 0mm and 100mm the existing surfacing should be broken out sufficiently to accommodate 100mm of new surfacing. Where the amount of lift is between 100mm and the standard construction depth (as in Table 1, page 13) the required regulation should be carried out in roadbase material. For greater lifts the appropriate standard construction should be used.

When constructing tapering widths of less than 3m where the new carriageways join the existing lean concrete to Clause 807 S should be used to replace the sub-base and part of the road base to within 160mm below finished road level.

At this site the route of the by-pass follows the line of the disused Haslingden to Accrington railway and has a similar formation level. Commerce Street is at present carried over the railway line by a single span bridge. Just a few metres north of this bridge the railway line runs into a tunnel through a promontory known as North Hag.

Commerce Street, which is a single carriageway unclassified road, is to be diverted to the north of its present alignment and is to be carried over the by-pass on a three span composite concrete bridge (deck continuous for live load) at a skew of approximely 30°. The line of the new bridge passes over the south portal of the existing railway tunnel.

## SIME IMPESTIGATION

Considerable difficulty was experienced in siting the boreholes for this bridge on account of the steep nature of the ground and the lack of reasonable access. North Mag rises to a height of 27m above the proposed road level and falls away on three sides. Four shell and auger holes were drilled from natural ground level along the line of the bridge and in two of these rock was proved by rotary coring. In addition one shell and auger and three rotary holes were drilled from the level of the railway formation in the vicinity of the east verge pier position.

A sandstone - Lower Taslingden Flags - overlies mudstone on this site. From the borehole information the bedding dips gently to the north at about 50 but the rock-head dips much more steeply, at about 100 to the west. The erosion is such that at the west bankseat the sandstone has been completely removed. The degree of weathering of the sandstone is very variable resulting in large flags separated by bands of soft rock. Joints which have opened up both vertically and along bedding planes are mostly clay-filled. The rock-head lies about two to three metres above finished road level at the west verge pier and about seven metres above at the east verge pier so that rock will be encountered during excavation both for the main carriageway and for the verge pier foundations. The rock-head is also about four metres above side road level at the site of the east bank-seat but about eleven metres below at the west bank-seat.

The drift material overlying the bedrock varies in depth from twenty-two metres at the west bank-seat to five metres at the east bank-seat and is a stratified clacial deposit of silty sand and silty sandy gravel. Much of the gravel and some of the sand has a slightly clayev binder. There is a layer of stiff boulder clay immediately above the rock-head and thin lenses occur elsewhere. There are also a few thin (<0.1m) lenses of firm high plasticity varved clay within the sand and gravel strata.

The water table in the drift material appears to be standing at a level around 215m a.O.D. (B.H. 5616/3), slightly above finished road level on the main route. The few water entries recorded above this level were only slight. In contrast the abandoned railway tunnel (which has a formation level similar to the main carriageway) is fairly wet. It is concluded that the line of seepages into the tunnel probably coincides with the intersection of the tunnel lining with the rock-head.

## FOUNDATION DESIGN

# <u>West Bank-seat</u>

At a proposed founding level of 217.0m A.O.D. a spread footing would be in medium dense silty fine to medium sand containing small pockets or lenses of sandy silt, underlain at a level of 211.9m A.O.D. by medium dense silty fine sand. The highest standing water level was found to be at 215.0m A.O.D., a level which is unlikely to be lowered during construction.

The low standard penetration test results recorded in borehole 5616/1 are probably due to disturbance of the saturated sand by the drilling operations and should be disregarded for design purposes. In the repeat borehole 5616/3, great care was taken to ensure that there was no out of balance hydrostatic head between the inside and outside of the cased borehole. In this instance the lowest S.P.T. value recorded was M = 18.

Calculations based on an N value of 18 indicate that the allowable bearing pressure should be based on considerations of settlement rather than ultimate bearing capacity. For an acceptable settlement of 25mm the allowable bearing pressure should be limited to 120 kM/m 2  (net), and for 50mm limited to 240 kM/m 2  (net). Intermediate values can be obtained by interpolation.

## Verge Diers and East Bank-seat

At proposed founding levels of 212.5m  $^{\circ}$ .0.D. for the verge piers and 217.0m  $^{\circ}$ .0.D. for the bank-seat it will be possible to construct footings in the sandstone bedrock. Taking into account the variable degrees of weathering of this rock and the presence of clay filled joints it is considered that the net allowable bearing pressure should be limited to  $^{\circ}$ 00 km/m².

## CENERAL REMARKS

Side slopes of 1 in 3 as shown on the strip plan are satisfactory. On the east side where the slope will be in sandstone bedrock a steeper slope could be employed but it has been decided elsewhere (see Part I, page 29) that, considering this location (Worth Hag) is one of the few sources of suitable material on the scheme, a flatter slope could be justified. Mevertheless, the bands of harder sandstone which will be found in the cutting slope could be left exposed as outcrop features if desired.

The soft excavated material should be classified as 55' suitable for re-use. All the rock to be excavated should be classified as 100' suitable for re-use.

Excavations in bedrock should be taken out net and the structural concrete compacted up to the sides of the excavation. Backfilling to the west bank-seat should be in selected suitable filling Type S.F.2.

Samples of ground water taken from the boreholes have been tested for soluble sulphates and only a slight trace found. We special precautions are necessary with structural classes of concrete.

The likelihood of shallow mine workings below this structure can be discounted.

This retaining wall is required in order to maintain access around Plantation Mill where the main-route embankment, 8m high, would otherwise encroach on the property. On the site for the wall once stood another mill building long since demolished.

A planned diversion of Swinnel Brook which runs alongside the mill will take it under the retaining wall in a box culvert at a skew angle of approximately 47°.

Construction of the wall is to take the form of two levels of pre-cast concrete crib-walling set at a rake of 4 in 1, on mass concrete base slabs. The maximum height of the lower wall is about 2.8m above final ground level which is slightly higher than existing. The maximum height of the upper wall is approximately 1.7m.

#### SITE INVESTIGATION

Four Shell and Auger boreholes have been drilled for this structure, during the course of the site investigation, to a maximum depth of 22.4m. Bedrock was not encountered within this depth nor any sign of the strata normally found within close proximity of bedrock.

At the surface, shallow depths of made ground, soft and firm weathered clays, and some organic silt overlie a bed of medium dense silty, sandy, and partly clayey gravel, found to be variable in thickness from 1.9m to 8.3m. The upper surface of the gravel appears to have a fairly constant level of around 197.0m A.O.D. Beneath the gravel is a bed of firm to stiff, low to medium plasticity boulder clay varying in thickness between the boreholes from 0.4m to 4.5m. (In borehole 5616R/4 it appears to be missing altogether). Below a fairly constant level of 188m to 191m A.O.D. is an extensive deposit of glacial varved silts and clays which was proved for a depth of 14m. Great difficulty was experienced in drilling through these varved silts and clays due to considerable adhesion on the side of the borehole casing, and to artesian pore water pressures tending to blow the silt up inside the casing. An attempt to counter this latter effect was made by keeping the casing full of water during drilling, but even so, some disturbance of the natural state of the ground took place prior to sampling and in-situ testing.

Ground water first became noticeable at depths of around 1m to 2m, the highest standing level recorded being at 0.8m (197.5m A.O.D.). The pore water pressure in the deep silts was sufficient in borehole 5616R/1 to give a standing level equal to ground level (198.6m A.O.D.) and in 5616R/4 equal to 0.9m above ground level (199.4m A.O.D.).

## **FOUNDATIONS**

The lower mass concrete foundation block, with its upper surface battered at a slope of 1 in 4, is to be founded at stepped levels varying from 197.706m A.O.D. at the north end, to 199.191m at the south end. At these levels the northern part of the wall will be founded in either made-ground or in the soft surface layers of the natural ground. The southern part of the wall will be founded above existing ground level. These surface layers of soft clay, organic silt, and made-ground will require digging out and replacing with selected granular filling type S.F.2. It is not expected that the depth of additional excavation will anywhere exceed 2m. The width of the bottom of the excavation should be greater than the combined width of foundation block and S.F.2 backing by an amount equal to twice the excavation depth. The total amount of additional excavation is estimated to be 450m³.

The filling around and immediately behind the crib-walling units should be carried out in S.F.2 material, the back slope of which (up against the suitable filling forming the remainder of the embankment) should be no steeper than 1 in 1. The horizontal width of this S.F.2 filling behind the lower foundation block is shown on the drawings as varying between 0.6m and 2.2m. These widths will be satisfactory where the bulk filling to the main embankment is in suitable granular material but will be inadequate, as regards overall stability, if the contractor opts to use suitable cohesive fill. It is therefore recommended that the bulk filling to the west half of the main embankment be specified as suitable granular material for the whole length of the retaining wall.

The maximum bearing pressure at the toe of the wall at its highest point is given as  $110 \text{ kN/m}^2$  which will be satisfactory on the gravel layer and the underlying boulder clay. Some of the varved clay lenses in the thick silt bed beneath may be overstressed leading to a certain amount of lateral creep as the main embankment is built up, but this should not have a detrimental affect on a retaining wall of this type.

Stability analyses carried out on the main embankment, at the position of maximum height of the upper wall, show that there could be an instability problem during construction if built too quickly. Calculations based on a circular type of failure have given factors of safety of the order of 1.25 in the short term and 1.5 in the long term.

The rate of filling may be critical and must therefore be controlled so as not to exceed the rate at which the underlying varved silty clays/clayey silts can gain the required strength by consolidation. Standard laboratory oedometer tests are not appropriate in this case, for estimating the rate of consolidation, but a filling rate of 0.3m (vertically) per week, as is proposed for the contract specification, should be satisfactory, provided this approach is coupled with in-situ instrumentation which can be monitored as construction proceeds.

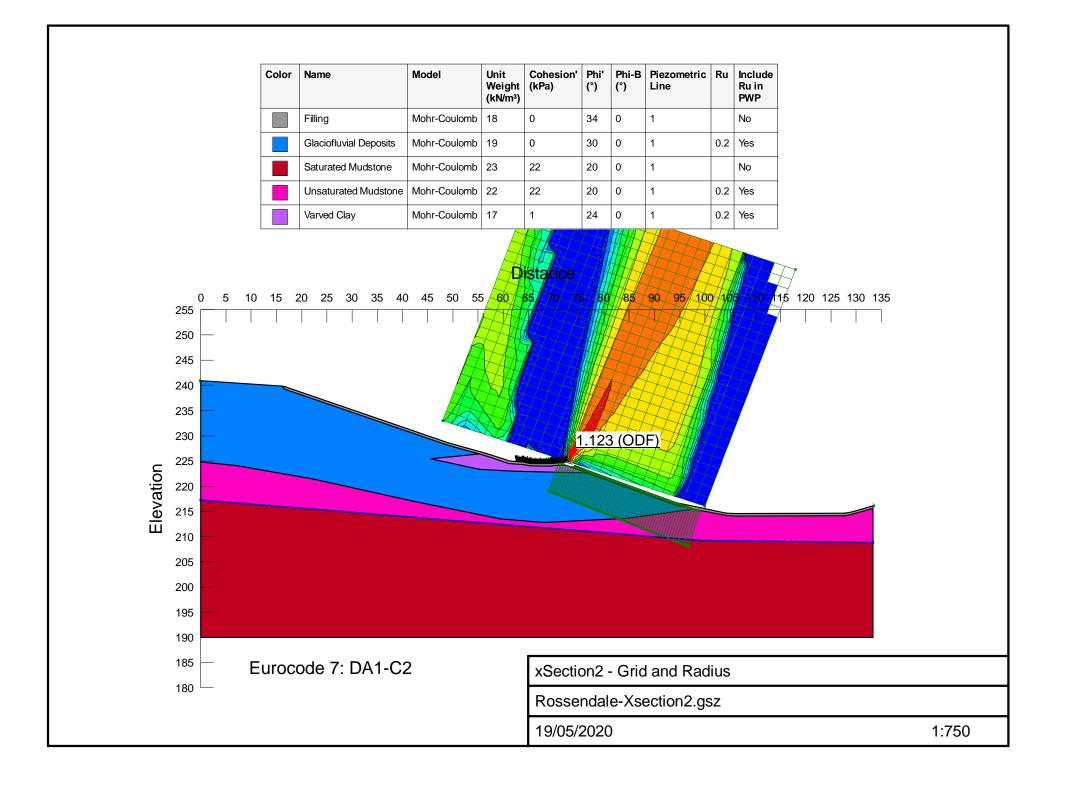
## GENERAL REMARKS

The side slopes of the main-route embankment above each section of wall are assumed to be set at 1 in 2.5.

All the material to be excavated for the lower foundation block should be classified as unsuitable for re-use and carted to tip.

A total of six samples of ground water have been taken from the boreholes and in all but one only a trace of soluble sulphates found when tested in the laboratory. The exception was in borehole 5616R/4 at 1.8m where a soluble sulphate content of 48 parts per 100,000 (Class 2) was recorded. This relatively high figures may be due to the ashy back-fill on the site of the old mill. Considering that to avoid this contamination it would be necessary to remove the ash over a wide area, it would be cheaper and safer to specify sulphate resisting cement for the concrete in the lower foundation block. The pre-cast units should be safe in ordinary portland cement.

# F. Slope Stability Assessment Outputs



Color	Name	Model	Unit Weight (kN/m³)	Cohesion' (kPa)	Phi' (°)	Phi-B (°)	Piezometric Line	Ru	Include Ru in PWP
	Filling	Mohr-Coulomb	18	0	34	0	1		No
	Glaciofluvial Deposits	Mohr-Coulomb	19	0	30	0	1	0.2	Yes
	Saturated Mudstone	Mohr-Coulomb	23	22	20	0	1		No
	Unsaturated Mudstone	Mohr-Coulomb	22	22	20	0	1	0.2	Yes
	Varved Clay	Mohr-Coulomb	17	1	24	0	1	0.2	Yes



