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About this Report

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Introduction

These notes have been provided to amplify DP's report in regard to classification methods, field procedures and the comments section. Not all are necessarily relevant to all reports.

DP's reports are based on information gained from limited subsurface excavations and sampling, supplemented by knowledge of local geology and experience. For this reason, they must be regarded as interpretive rather than factual documents, limited to some extent by the scope of information on which they rely.

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Borehole and Test Pit Logs

The borehole and test pit logs presented in this report are an engineering and/or geological interpretation of the subsurface conditions, and their reliability will depend to some extent on frequency of sampling and the method of drilling or excavation. Ideally, continuous undisturbed sampling or core drilling will provide the most reliable assessment, but this is not always practicable or possible to justify on economic grounds. In any case the boreholes and test pits represent only a very small sample of the total subsurface profile.

Interpretation of the information and its application to design and construction should therefore take into account the spacing of boreholes or pits, the frequency of sampling, and the possibility of other than 'straight line' variations between the test locations.

Groundwater

Where groundwater levels are measured in boreholes there are several potential problems, namely:

- In low permeability soils groundwater may enter the hole very slowly or perhaps not at all during the time the hole is left open;
- A localised, perched water table may lead to an erroneous indication of the true water table;
- Water table levels will vary from time to time with seasons or recent weather changes. They may not be the same at the time of construction as are indicated in the report; and
- The use of water or mud as a drilling fluid will mask any groundwater inflow. Water has to be blown out of the hole and drilling mud must first be washed out of the hole if water measurements are to be made.

More reliable measurements can be made by installing standpipes which are read at intervals over several days, or perhaps weeks for low permeability soils. Piezometers, sealed in a particular stratum, may be advisable in low permeability soils or where there may be interference from a perched water table.

Reports

The report has been prepared by qualified personnel, is based on the information obtained from field and laboratory testing, and has been undertaken to current engineering standards of interpretation and analysis. Where the report has been prepared for a specific design proposal, the information and interpretation may not be relevant if the design proposal is changed. If this happens, DP will be pleased to review the report and the sufficiency of the investigation work.

Every care is taken with the report as it relates to interpretation of subsurface conditions, discussion of geotechnical and environmental aspects, and recommendations or suggestions for design and construction. However, DP cannot always anticipate or assume responsibility for:

- Unexpected variations in ground conditions. The potential for this will depend partly on borehole or pit spacing and sampling frequency;
- Changes in policy or interpretations of policy by statutory authorities; or
- The actions of contractors responding to commercial pressures.

If these occur, DP will be pleased to assist with investigations or advice to resolve the matter.

About this Report

Site Anomalies

In the event that conditions encountered on site during construction appear to vary from those which were expected from the information contained in the report, DP requests that it be immediately notified. Most problems are much more readily resolved when conditions are exposed rather than at some later stage, well after the event.

Information for Contractual Purposes

Where information obtained from this report is provided for tendering purposes, it is recommended that all information, including the written report and discussion, be made available. In circumstances where the discussion or comments section is not relevant to the contractual situation, it may be appropriate to prepare a specially edited document. DP would be pleased to assist in this regard and/or to make additional report copies available for contract purposes at a nominal charge.

Site Inspection

The company will always be pleased to provide engineering inspection services for geotechnical and environmental aspects of work to which this report is related. This could range from a site visit to confirm that conditions exposed are as expected, to full time engineering presence on site.

Sampling Methods

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Sampling

Sampling is carried out during drilling or test pitting to allow engineering examination (and laboratory testing where required) of the soil or rock.

Disturbed samples taken during drilling provide information on colour, type, inclusions and, depending upon the degree of disturbance, some information on strength and structure.

Undisturbed samples are taken by pushing a thin-walled sample tube into the soil and withdrawing it to obtain a sample of the soil in a relatively undisturbed state. Such samples yield information on structure and strength, and are necessary for laboratory determination of shear strength and compressibility. Undisturbed sampling is generally effective only in cohesive soils.

Test Pits

Test pits are usually excavated with a backhoe or an excavator, allowing close examination of the in-situ soil if it is safe to enter into the pit. The depth of excavation is limited to about 3 m for a backhoe and up to 6 m for a large excavator. A potential disadvantage of this investigation method is the larger area of disturbance to the site.

Large Diameter Augers

Boreholes can be drilled using a rotating plate or short spiral auger, generally 300 mm or larger in diameter commonly mounted on a standard piling rig. The cuttings are returned to the surface at intervals (generally not more than 0.5 m) and are disturbed but usually unchanged in moisture content. Identification of soil strata is generally much more reliable than with continuous spiral flight augers, and is usually supplemented by occasional undisturbed tube samples.

Continuous Spiral Flight Augers

The borehole is advanced using 90-115 mm diameter continuous spiral flight augers which are withdrawn at intervals to allow sampling or in-situ testing. This is a relatively economical means of drilling in clays and sands above the water table. Samples are returned to the surface, or may be collected after withdrawal of the auger flights, but they are disturbed and may be mixed with soils from the sides of the hole. Information from the drilling (as distinct from specific sampling by SPTs or undisturbed samples) is of relatively low reliability, due to the remoulding, possible mixing or softening of samples by groundwater.

Non-core Rotary Drilling

The borehole is advanced using a rotary bit, with water or drilling mud being pumped down the drill rods and returned up the annulus, carrying the drill cuttings. Only major changes in stratification can be determined from the cuttings, together with some information from the rate of penetration. Where drilling mud is used this can mask the cuttings and reliable identification is only possible from separate sampling such as SPTs.

Continuous Core Drilling

A continuous core sample can be obtained using a diamond tipped core barrel, usually with a 50 mm internal diameter. Provided full core recovery is achieved (which is not always possible in weak rocks and granular soils), this technique provides a very reliable method of investigation.

Standard Penetration Tests

Standard penetration tests (SPT) are used as a means of estimating the density or strength of soils and also of obtaining a relatively undisturbed sample. The test procedure is described in Australian Standard 1289, Methods of Testing Soils for Engineering Purposes - Test 6.3.1.

The test is carried out in a borehole by driving a 50 mm diameter split sample tube under the impact of a 63 kg hammer with a free fall of 760 mm. It is normal for the tube to be driven in three successive 150 mm increments and the 'N' value is taken as the number of blows for the last 300 mm. In dense sands, very hard clays or weak rock, the full 450 mm penetration may not be practicable and the test is discontinued.

The test results are reported in the following form.

- In the case where full penetration is obtained with successive blow counts for each 150 mm of, say, 4, 6 and 7 as:

  4,6,7
  N=13

- In the case where the test is discontinued before the full penetration depth, say after 15 blows for the first 150 mm and 30 blows for the next 40 mm as:

  15, 30/40 mm

The results of the SPT tests can be related empirically to the engineering properties of the soils.

Dynamic Cone Penetrometer Tests / Perth Sand Penetrometer Tests

Dynamic penetrometer tests (DCP or PSP) are carried out by driving a steel rod into the ground using a standard weight of hammer falling a specified distance. As the rod penetrates the soil the number of blows required to penetrate each successive 150 mm depth are recorded. Normally there is a depth limitation of 1.2 m, but this may be extended in certain conditions by the use of extension rods. Two types of penetrometer are commonly used.

- Perth sand penetrometer - a 16 mm diameter flat ended rod is driven using a 9 kg hammer dropping 600 mm (AS 1289, Test 6.3.3). This test was developed for testing the density of sands and is mainly used in granular soils and filling.
- Cone penetrometer - a 16 mm diameter rod with a 20 mm diameter cone end is driven using a 9 kg hammer dropping 510 mm (AS 1289, Test 6.3.2). This test was developed initially for pavement subgrade investigations, and correlations of the test results with California Bearing Ratio have been published by various road authorities.

Soil Descriptions

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Description and Classification Methods

The methods of description and classification of soils and rocks used in this report are based on Australian Standard AS 1726, Geotechnical Site Investigations Code. In general, the descriptions include strength or density, colour, structure, soil or rock type and inclusions.

Soil Types

Soil types are described according to the predominant particle size, qualified by the grading of other particles present:

Type	Particle size (mm)
Boulder	>200
Cobble	63 - 200
Gravel	2.36 - 63
Sand	0.075 - 2.36
Silt	0.002 - 0.075
Clay	<0.002

The sand and gravel sizes can be further subdivided as follows:

Type	Particle size (mm)
Coarse gravel	20 - 63
Medium gravel	6 - 20
Fine gravel	2.36 - 6
Coarse sand	0.6 - 2.36
Medium sand	0.2 - 0.6
Fine sand	0.075 - 0.2

The proportions of secondary constituents of soils are described as:

Term	Proportion	Example
And	Specify	Clay (60%) and Sand (40%)
Adjective	20 - 35%	Sandy Clay
Slightly	12 - 20%	Slightly Sandy Clay
With some	5 - 12%	Clay with some sand
With a trace of	0 - 5%	Clay with a trace of sand

Definitions of grading terms used are:

- Well graded - a good representation of all particle sizes
- Poorly graded - an excess or deficiency of particular sizes within the specified range
- Uniformly graded - an excess of a particular particle size
- Gap graded - a deficiency of a particular particle size with the range

Cohesive Soils

Cohesive soils, such as clays, are classified on the basis of undrained shear strength. The strength may be measured by laboratory testing, or estimated by field tests or engineering examination. The strength terms are defined as follows:

Description	Abbreviation	Undrained shear strength (kPa)
Very soft	vs	<12
Soft	s	12 - 25
Firm	f	25 - 50
Stiff	st	50 - 100
Very stiff	vst	100 - 200
Hard	h	>200

Cohesionless Soils

Cohesionless soils, such as clean sands, are classified on the basis of relative density, generally from the results of standard penetration tests (SPT), cone penetration tests (CPT) or dynamic penetrometers (PSP). The relative density terms are given below:

Relative Density	Abbreviation	SPT N value	CPT qc value (MPa)
Very loose	vl	<4	<2
Loose	l	4 - 10	2 -5
Medium dense	md	10 - 30	5 - 15
Dense	d	30 - 50	15 - 25
Very dense	vd	>50	>25

Soil Descriptions

Soil Origin

It is often difficult to accurately determine the origin of a soil. Soils can generally be classified as:

- Residual soil - derived from in-situ weathering of the underlying rock;
- Transported soils - formed somewhere else and transported by nature to the site; or
- Filling - moved by man.

Transported soils may be further subdivided into:

- Alluvium - river deposits
- Lacustrine - lake deposits
- Aeolian - wind deposits
- Littoral - beach deposits
- Estuarine - tidal river deposits
- Talus - scree or coarse colluvium
- Slopewash or Colluvium - transported downslope by gravity assisted by water. Often includes angular rock fragments and boulders.

Symbols & Abbreviations

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Introduction

These notes summarise abbreviations commonly used on borehole logs and test pit reports.

Drilling or Excavation Methods

C	Core Drilling
R	Rotary drilling
SFA	Spiral flight augers
NMLC	Diamond core - 52 mm dia
NQ	Diamond core - 47 mm dia
HQ	Diamond core - 63 mm dia
PQ	Diamond core - 81 mm dia

Water

▷	Water seep
▽	Water level

Sampling and Testing

A	Auger sample
B	Bulk sample
D	Disturbed sample
E	Environmental sample
U_{50}	Undisturbed tube sample (50mm)
W	Water sample
pp	pocket penetrometer (kPa)
PID	Photo ionisation detector
PL	Point load strength Is(50) MPa
S	Standard Penetration Test
V	Shear vane (kPa)

Description of Defects in Rock

The abbreviated descriptions of the defects should be in the following order: Depth, Type, Orientation, Coating, Shape, Roughness and Other. Drilling and handling breaks are not usually included on the logs.

Defect Type

B	Bedding plane
Cs	Clay seam
Cv	Cleavage
Cz	Crushed zone
Ds	Decomposed seam
F	Fault
J	Joint
Lam	lamination
Pt	Parting
Sz	Sheared Zone
V	Vein

Orientation

The inclination of defects is always measured from the perpendicular to the core axis.

h	horizontal
v	vertical
sh	sub-horizontal
sv	sub-vertical

Coating or Infilling Term

cln	clean
co	coating
he	healed
inf	infilled
stn	stained
ti	tight
vn	veneer

Coating Descriptor

ca	calcite
cbs	carbonaceous
cly	clay
fe	iron oxide
mn	manganese
slt	silty

Shape

cu	curved
ir	irregular
pl	planar
st	stepped
un	undulating

Roughness

po	polished
ro	rough
sl	slickensided
sm	smooth
vr	very rough

Other

fg	fragmented
bnd	band
qtz	quartz

Symbols & Abbreviations

Graphic Symbols for Soil and Rock

General


Asphalt


Road base


Concrete


Filling

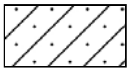
Soils


Topsoil

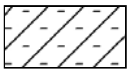

Peat


Clay

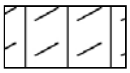

Silty clay

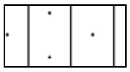

Sandy clay

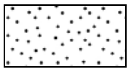

Gravelly clay

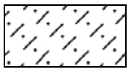

Shaly clay

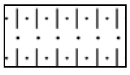

Silt


Clayey silt


Sandy silt

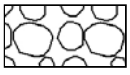

Sand

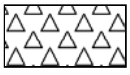

Clayey sand


Silty sand


Gravel


Sandy gravel


Cobbles, boulders

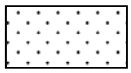

Talus

Sedimentary Rocks

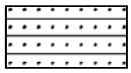

Boulder conglomerate

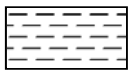

Conglomerate


Conglomeratic sandstone

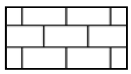

Sandstone


Siltstone


Laminite

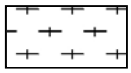

Mudstone, claystone, shale

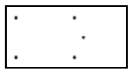

Coal


Limestone

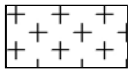
Metamorphic Rocks

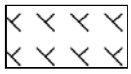

Slate, phyllite, schist

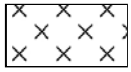

Gneiss

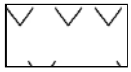

Quartzite

Igneous Rocks


Granite


Dolerite, basalt, andesite


Dacite, epidote


Tuff, breccia


Porphyry

BOREHOLE LOG

CLIENT: Queensland Rail
PROJECT: PCA, Proposed Redevelopment
LOCATION: Maitland Road and Woodlands Close, Hexham

SURFACE LEVEL: 2.6 AHD
EASTING: 377124
NORTHING: 6365965
DIP/AZIMUTH: 90°/--

BORE No: 101
PROJECT No: 39798.02
DATE: 01 Apr 08
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
	0.0			A,PID	0.0		<1 ppm		Stickup = 0.49m
					0.1				from 0m to 0.05m, concrete
	0.3	FILLING - Generally comprising brown fine grained gravelly silty sand, gravel predominantly subrounded, humid							from 0.05m to 0.45m, bentonite plug
		FILLING - Generally comprising dark brown fine grained silty sand with some clay and some medium grained sand and gravel sized coal reject (10%), humid		A,PID	0.3		<1 ppm		
					0.5				
				A,PID	0.8		<1 ppm		
1					1.0			1	
	1.2	FILLING - Generally comprising dark grey silty, clayey gravel, angular gravel predominantly comprising coal reject (80%), damp							
					1.3				
				A,PID			<1 ppm		
					1.5				
					1.8				
				A,PID			<1 ppm		
2					2.0			2	
	2.3	SILTY CLAY - Stiff, dark grey silty clay, slight organic odour, M>Wp							from 0.45m to 3.95m, gravel filter
					2.4				
				A,PID,pp	2.5		<1 ppm, 110 kPa		from 0.95m to 3.95m, 50mm diameter class 18 machine slotted PVC screen
					2.7				
	2.8	CLAYEY SAND / SANDY CLAY - (soft / medium dense) grey clayey sand / sandy clay with some silt, M>>Wp		A,PID,pp			<1 ppm, 50 kPa		
3					3.0			3	
		From 3.2m, grading to clayey sand							
					3.3				
				A,PID			<1 ppm		
					3.5				
					3.8				
		From 3.8m, with some shell fragments		A,PID			<1 ppm		
4	4.0				4.0			4	end cap
		Bore discontinued at 4.0m, limit of investigation							
5								5	

RIG: 4WD mounted drill rig **DRILLER:** Atkins **LOGGED:** Karpiel **CASING:** Uncased

TYPE OF BORING: Solid Flight Auger, 125mm

WATER OBSERVATIONS: No free goundwater observed during drilling

REMARKS: Fitted with lockable stainless steel well monument cover

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED
Initials:
Date:

Douglas Partners
Geotechnics · Environment · Groundwater

BOREHOLE LOG

CLIENT: Queensland Rail
PROJECT: PCA, Proposed Redevelopment
LOCATION: Maitland Road and Woodlands Close, Hexham

SURFACE LEVEL: 2.6 AHD
EASTING: 376979
NORTHING: 6366102
DIP/AZIMUTH: 90°/--

BORE No: 102
PROJECT No: 39798.02
DATE: 01 Apr 08
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
	0.0	FILLING - Generally comprising dark brown fine to medium grained silty sand with some subangular gravel, humid		A,PID	0.1		<1 ppm		Stickup = 0.62m from 0m to 0.05m, concrete from 0.05m to 0.25m, bentonite plug
					0.3				
				A,PID	0.5		<1 ppm	▼	
		From 0.6m, with some gravel and sand sized coal reject			0.8				
				A,PID	1.0		<1 ppm		
1								1	
	1.2	FILLING - Generally comprising black angular gravel sized coal reject (80%) with some fine to medium grained sand and clay, damp			1.3				
		From 1.3m, saturated		A,PID	1.5		<1 ppm		
					1.8				from 0.25m to 3.35m, gravel filter from 0.35m to 3.35m, 50mm diameter class 18 machine slotted PVC screen
				A,PID	2.0		<1 ppm		
2								2	
					2.3				
				A,PID	2.5		<1 ppm		
	2.7	SILTY CLAY - Firm, grey mottled orange silty clay, M>Wp			2.8				
				A, PID, pp	3.0		<1 ppm 90 kPa		
3								3	
					3.3				end cap
				A, PID			<1 ppm		
	3.5	Bore discontinued at 3.5m, limit of investigation			3.5				
4								4	
5								5	

RIG: 4WD mounted drill rig **DRILLER:** Atkins **LOGGED:** Karpiel **CASING:** Uncased

TYPE OF BORING: Solid Flight Auger, 125mm

WATER OBSERVATIONS: Free groundwater observed at 0.5m below ground level during drilling

REMARKS: Fitted with lockable stainless steel well monument cover

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED
Initials:
Date:

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Geotechnics · Environment · Groundwater

BOREHOLE LOG

CLIENT: Queensland Rail
PROJECT: PCA, Proposed Redevelopment
LOCATION: Maitland Road and Woodlands Close, Hexham

SURFACE LEVEL: 3.1 AHD
EASTING: 376598
NORTHING: 6366198
DIP/AZIMUTH: 90°/--

BORE No: 103
PROJECT No: 39798.02
DATE: 01 Apr 08
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
	0.0	FILLING - Generally comprising medium grained gravelly silty sand, abundant rootlets to 0.1m, humid		A,PID	0.1		<1 ppm		Stickup = 0.65m from 0m to 0.2m, concrete
				A,PID	0.3 0.5		<1 ppm		from 0.2m to 0.4m, bentonite plug
	0.7	FILLING - Generally comprising grey-brown medium grained clayey sand with some angular gravel (coal reject), moist		A,PID	0.8 1.0		<1 ppm	▼	
1				A,PID	1.3 1.5		<1 ppm		1
	1.8	FILLING - Generally comprising dark grey fine grained sandy silt with some clay and angular gravel (coal reject), wet		A,PID	1.9 2.0		<1 ppm		
2				A,PID	2.3 2.5		<1 ppm		2 from 0.4m to 3.65m, gravel filter from 0.68m to 3.65m, 50mm diameter class 18 machine slotted PVC screen
	2.7	SILTY CLAY / CLAYEY SILT - (Soft), dark brown silty clay / clayey silt, M>>Wp		A,PID	2.8 3.0		<1 ppm		
3	3.2	SILTY CLAY - (Firm), grey silty clay, M>>Wp		A,PID	3.3 3.5		<1 ppm		3
	3.65	Bore discontinued at 3.65m, limit of investigation							end cap
4									4
5									5

RIG: 4WD mounted drill rig **DRILLER:** Atkins **LOGGED:** Karpiel **CASING:** Uncased

TYPE OF BORING: Solid Flight Auger, 125mm

WATER OBSERVATIONS: Free groundwater observed at 0.89m below ground level during drilling

REMARKS: Fitted with lockable stainless steel well monument cover

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED
Initials:
Date:

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BOREHOLE LOG

CLIENT: Queensland Rail
PROJECT: PCA, Proposed Redevelopment
LOCATION: Maitland Road and Woodlands Close, Hexham

SURFACE LEVEL: 1.5 AHD
EASTING: 376251
NORTHING: 6366435
DIP/AZIMUTH: 90°/--

BORE No: 104
PROJECT No: 39798.02
DATE: 01 Apr 08
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
	0.15	FILLING - Generally comprising brown clayey silt with trace angular gravel and rootlets		A,PID	0.0 0.1		<1 ppm	▼	Stickup = 0.64m from 0m to 0.1m, bentonite plug
		FILLING - Generally comprising fine to medium grained gravelly sandy clay with some silt, gravel predominantly angular coal reject (20%), humid to damp		A,PID	0.3 0.5		<1 ppm		
	0.6	FILLING - Generally comprising brown / black, silty gravel, gravel predominantly angular coal chitter, saturated		A,PID	0.8 1.0		<1 ppm		
1	1.2	SILTY CLAY - (stiff) dark brown silty clay, M>>Wp From 1.3m colour change to grey mottled orange brown		A,PID	1.3 1.5		<1 ppm		from 0.1m to 3.0m, gravel filter from 0.2m to 3.0m, 50mm diameter class 18 machine slotted PVC screen
				A,PID	1.8 2.0		<1 ppm		
2	2.1	CLAYEY SAND - (Loose), light brown fine grained clayey sand, slightly silty, wet, M>>Wp		A,PID	2.3 2.5		<1 ppm		
		From 2.7m, with trace shell fragments		A,PID	2.8		<1 ppm		
3	3.0	Bore discontinued at 3.0m, limit of investigation			3.0				end cap
4									
5									

RIG: 4WD mounted drill rig **DRILLER:** Atkins **LOGGED:** Karpiel **CASING:** Uncased

TYPE OF BORING: Solid Flight Auger, 125mm

WATER OBSERVATIONS: Free groundwater observed at 0.25m below ground level during drilling

REMARKS: Fitted with lockable stainless steel well monument cover

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED
Initials:
Date:

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BOREHOLE LOG

CLIENT: Queensland Rail
PROJECT: PCA, Proposed Redevelopment
LOCATION: Maitland Road and Woodlands Close, Hexham

SURFACE LEVEL: 4.1 AHD
EASTING: 376855
NORTHING: 6366431
DIP/AZIMUTH: 90°/--

BORE No: 105
PROJECT No: 39798.02
DATE: 02 Apr 08
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
									Stickup = 0.73m
		FILLING - Generally comprising brown fine grained gravelly sandy silt, trace rootlets, gravel subrounded, humid		A,PID	0.0 - 0.1		<1 ppm		from 0m to 0.15m, bentonite plug
	0.25	FILLING - Generally comprising brown fine to medium grained silty sand with some clay and angular gravel (coal reject), humid		A,PID	0.3 - 0.5		<1 ppm		
	0.75	FILLING - Generally comprising black/dark grey fine grained silty sand (predominately coal fines), damp		A,PID	0.8 - 1.0		<1 ppm		
1		From 1.2m, with trace angular gravel (coal reject)		A,PID	1.3 - 1.5		<1 ppm		
				A,PID	1.8 - 2.0		<1 ppm	▼	
2		From 2.2m, saturated		A,PID	2.3 - 2.5		<1 ppm		from 0.15m to 4.2m, gravel filter from 0.2m to 4.2m, 50mm diameter class 18 machine slotted PVC screen
				A,PID	2.8 - 3.0		<1 ppm		
3				A,PID	3.3 - 3.5		<1 ppm		
		From 3.8m, with trace angular carbonaceous siltstone		A,PID	3.8 - 4.0		<1 ppm		
4	4.3	CLAYEY SILT - Soft dark grey clayey silt, M>>Wp		A,PID,pp	4.3 - 4.5		<1 ppm, 30 kPa		end cap
	4.7	SILTY CLAY - Stiff grey mottled orange silty clay, M>>Wp		A,PID,pp	4.8		<1 ppm, 110 kPa		
5	5.0	Bore discontinued at 5.0m, limit of investigation			5.0				

RIG: 4WD mounted drill rig **DRILLER:** Atkins **LOGGED:** Karpiel **CASING:** Uncased

TYPE OF BORING: Solid Flight Auger, 125mm

WATER OBSERVATIONS: Free groundwater observed at 1.93m below ground level during drilling

REMARKS: Fitted with lockable stainless steel well monument cover

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED
Initials:
Date:

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BOREHOLE LOG

CLIENT: Queensland Rail
PROJECT: PCA, Proposed Redevelopment
LOCATION: Maitland Road and Woodlands Close, Hexham

SURFACE LEVEL: 2.0 AHD
EASTING: 376661
NORTHING: 6366957
DIP/AZIMUTH: 90°/--

BORE No: 106
PROJECT No: 39798.02
DATE: 02 Apr 08
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
	0.0	FILLING - Generally comprising brown fine grained silty sandy gravel, with trace inclusions gravel sized coal reject, humid		A,PID	0.0-0.1		<1 ppm		Stickup = 0.52m
	0.3	FILLING - Generally comprising black fine grained sandy silt (coal fines), trace coarse grained coal reject, humid		A,PID	0.4-0.5		<1 ppm	▼	from 0m to 0.3m, bentonite plug
	0.85	FILLING - Generally comprising grey mottled orange brown fine grained sandy clay with trace gravel (possibly natural)		A,PID	0.9-1.0		<1 ppm		
1	1.2	SILTY CLAY - Stiff grey mottled orange brown silty clay with some fine grained sand M>Wp		A,PID,pp	1.3-1.5		<1 ppm, 110 kPa		
				A,PID,pp	1.8-2.0		<1 ppm, 130 kPa		from 0.3m to 3.05m, gravel filter from 0.4m to 3.05m, 50mm diameter class 18 machine slotted PVC screen
2				A,PID,pp	2.3-2.5		<1 ppm, 100 kPa		
	2.7	CLAYEY SILTY SAND - Light brown/grey, clayey silty sand, saturated		A,PID	2.8-3.0		<1 ppm		
3	3.05	Bore discontinued at 3.05m							end cap
4									
5									

RIG: 4WD mounted drill rig **DRILLER:** Atkins **LOGGED:** Karpiel **CASING:** Uncased

TYPE OF BORING: Solid Flight Auger, 125mm

WATER OBSERVATIONS: Free groundwater observed at 0.67m below ground level during drilling

REMARKS:

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED
Initials:
Date:

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BOREHOLE LOG

CLIENT: Queensland Rail
PROJECT: PCA, Proposed Redevelopment
LOCATION: Maitland Road and Woodlands Close, Hexham

SURFACE LEVEL: 1.8 AHD
EASTING: 376778
NORTHING: 6366997
DIP/AZIMUTH: 90°/--

BORE No: 107
PROJECT No: 39798.02
DATE: 01 Apr 08
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
	0.0			A,PID	0.0		<1 ppm		Stickup = 0.60m
	0.2	FILLING - Generally comprising brown fine grained sandy silt with trace angular gravel (rail ballast), humid			0.1				from 0m to 0.1m, concrete
		FILLING - Generally comprising grey fine to coarse grained gravelly silty sand, gravel predominantly angular sandstone, humid		A,PID	0.3		<1 ppm		from 0.1m to 0.4m, bentonite plug
					0.5				
	0.8	FILLING - Generally comprising dark brown gravelly silty clay with trace sand, gravel and sand predominantly coal reject, damp to moist		A,PID	0.8		<1 ppm	▼	
1					1.0				1
	1.3	SILTY CLAY - Stiff dark grey, silty clay, M>Wp		A,PID,pp	1.4		<1 ppm, 180 kPa		
		from 1.55m, colour change to grey mottled orange			1.5				
	1.7	CLAYEY SILTY SAND - Grey mottled orange-brown fine grained clayey sand, damp to moist							from 0.4m to 3.0m, gravel filter
				A,PID	1.9		<1 ppm		from 0.5m to 3.0m, 50mm diameter class 18 machine slotted PVC screen
2					2.0				2
				A,PID	2.3		<1 ppm		
					2.5				
3	3.0	Bore discontinued at 3.0m, limit of investigation							3 end cap
4									4
5									5

RIG: 4WD mounted drill rig **DRILLER:** Atkins **LOGGED:** Karpiel **CASING:** Uncased

TYPE OF BORING: Solid Flight Auger, 125mm

WATER OBSERVATIONS: Free groundwater observed at 1.0m below ground level during drilling

REMARKS: Fitted with lockable stainless steel well monument cover

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED
Initials:
Date:

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BOREHOLE LOG

CLIENT: Queensland Rail
PROJECT: PCA, Proposed Redevelopment
LOCATION: Maitland Road and Woodlands Close, Hexham

SURFACE LEVEL: 3.3 AHD
EASTING: 376089
NORTHING: 6366959
DIP/AZIMUTH: 90°/--

BORE No: 108
PROJECT No: 39798.02
DATE: 02 Apr 08
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
	0.15	FILLING - Generally comprising brown fine grained clayey silty sand with some angular gravel, gravel predominately coal chitter, humid		A	0.0 0.1				Stickup = 0.68m from 0m to 0.05m, concrete from 0.05m to 0.25m, bentonite plug
		FILLING - Generally comprising dark brown clayey silt with some fine grained sand and gravel, gravel predominately coal reject, humid		A	0.3 0.5			▼	
	0.6	FILLING - Generally comprising grey silty gravel with trace fine to coarse grained sand, gravel predominantly coal reject (90%), carbonaceous siltstone (5%), wet to saturated		A	0.8 1.0				
1				A	1.3 1.5				1
	1.7	CLAYEY SILTY SAND - Brown fine grained clayey silty sand, with trace dark brown silty inclusions, moist		A	1.8 2.0				from 0.25m to 3.15m, gravel filter from 0.35m to 3.15m, 50mm diameter class 18 machine slotted PVC screen
2	2.2	CLAYEY SILT - Firm, dark grey clayey silt, M>Wp		A, pp	2.3 2.5		50-70 kPa		2
		From 2.7m, with trace clayey sand lenses		A	2.8 3.0				
3	3.2	Bore discontinued at 3.2m, limit of investigation							3 end cap
4									4
5									5

RIG: 4WD mounted drill rig **DRILLER:** Atkins **LOGGED:** Karpiel **CASING:** Uncased

TYPE OF BORING: Solid Flight Auger, 125mm

WATER OBSERVATIONS: Free groundwater observed at 0.43m during drilling

REMARKS: Fitted with lockable stainless steel well monument cover

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED
Initials:
Date:

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BOREHOLE LOG

CLIENT: Queensland Rail
PROJECT: PCA, Proposed Redevelopment
LOCATION: Maitland Road and Woodlands Close, Hexham

SURFACE LEVEL: 1.5 AHD
EASTING: 376273
NORTHING: 6368095
DIP/AZIMUTH: 90°/--

BORE No: 109
PROJECT No: 39798.02
DATE: 02 Apr 08
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
	0.0			A,PID	0.1		<1 ppm		Stickup = 0.66m
	0.2	FILLING - Generally comprising brown gravelly silty sand, including trace gravel sized coal reject, trace rootlets, humid							from 0m to 0.4m, bentonite plug
		FILLING - Generally comprising dark brown fine grained silty sand with some medium grained gravel (coal reject), humid		A,PID	0.3		<1 ppm		
	0.6	FILLING - Generally comprising grey mottled red brown silty clay with some fine grained sand and trace angular coal reject, trace rootlets, M>Wp			0.5				
1				A,PID	0.8		<1 ppm		1
	1.1	SILTY CLAY - Stiff, grey mottled brown, silty clay, M>Wp			1.0				
				A,PID,pp	1.3		<1 ppm, 110 kPa		
		From 1.65m, colour change to grey grading to clayey silt, firm			1.5				
				A,PID,pp	1.8		<1 ppm, 70 kPa		
2					2.0				2
	2.1	CLAYEY SILT - (firm) grey clayey silt with some fine grained sand, M>Wp							from 0.4m to 3.67m, gravel filter from 0.67m to 3.67m, 50mm diameter class 18 machine slotted PVC screen
				A,PID	2.3		<1 ppm		
					2.5				
				A,PID	2.8		<1 ppm		
3					3.0				3
		From 3.1m, M>Wp							
				A,PID	3.3		<1 ppm		
					3.5				end cap
				A,PID	3.8		<1 ppm		
4	4.0				4.0				4
		Bore discontinued at 4.0m, limit of investigation							
5									5

RIG: 4WD mounted drill rig **DRILLER:** Atkins **LOGGED:** Karpiel **CASING:** Uncased

TYPE OF BORING: Solid Flight Auger, 125mm

WATER OBSERVATIONS: No free groundwater observed during drilling

REMARKS: Fitted with lockable stainless steel well monument cover

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED
Initials:
Date:

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TEST PIT LOG

CLIENT: Queensland Rail
PROJECT: PCA, Proposed Redevelopment
LOCATION: Maitland Road and Woodlands Close, Hexham

SURFACE LEVEL: 6.5 AHD
EASTING: 376748
NORTHING: 6366328
DIP/AZIMUTH: 90°/--

PIT No: 110
PROJECT No: 39798.02
DATE: 02 Apr 08
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0.04	FILLING - Grey brown clayey silt with some sand, fine to medium sized gravel and rootlets, moist		D, PID	0.2		<1 ppm		
		FILLING - Grey and orange/brown coal reject generally comprising of clay, coal and crushed sandstone, damp							
		From 0.3m, dark grey to black, generally comprising of clayey gravel to cobble sized coal and carbonaceous siltstone (predominately coal)							
	1.1	FILLING - Dark grey/black silt generally comprising of coal fines		D, PID	1.15		<1 ppm		
	1.2	FILLING- Dark grey silty clay with trace organics, generally comprising coal fines, M>Wp		D, PID, pp	1.3		<1 ppm, 10-30 kPa		
		from 1.8m, with trace gravel (coal fines)		D, PID	2.0		<1 ppm		
	2.2	FILLING - Very soft dark grey silty clay filling, M>>Wp		pp	2.6		10-30 kPa		
	2.8	Pit discontinued at 2.8m, limit of investigation							

RIG: CASE CX 130 Excavator, 600mm bucket with teeth

LOGGED: Collins

WATER OBSERVATIONS: No free groundwater observed during test pitting

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ⧭ Water level

CHECKED
Initials:
Date:

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TEST PIT LOG

CLIENT: Queensland Rail
PROJECT: PCA, Proposed Redevelopment
LOCATION: Maitland Road and Woodlands Close, Hexham

SURFACE LEVEL: 11.3 AHD
EASTING: 376571
NORTHING: 6366283
DIP/AZIMUTH: 90°/--

PIT No: 111
PROJECT No: 39798.02
DATE: 02 Apr 08
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0.03	FILLING / TOPSOIL - Grey brown clayey silt with some sand, fine to medium sized gravel and rootlets, moist		D, PID	0.1		<1 ppm		
		FILLING - Dark grey to black coal reject generally comprising of clayey gravel to cobble sized coal and carbonaceous siltstone (predominately coal), moist From 0.25m, grey brown generally comprising of clayey gravel to cobble size coal, carbonaceous siltstone and crushed rock		D, PID	0.8		<1 ppm		
	1								1
		From 1.3m, grey to dark grey, generally comprising of fine to coarse size gravel and cobble sized carbonaceous siltstone with some clay and coal, moist to wet		D, PID	1.5		<1 ppm		
	2								2
				D, PID	2.2		<1 ppm	▼	
	2.5	FILLING - Dark grey to black silty clay / clayey silt filling with trace to some sand, trace coal fines, wet		D, PID	2.6		<1 ppm		
	3 3.0	Pit discontinued at 3.0m, pit wall collapsing							3
	4								4
	5								5

RIG: CASE CX 130 Excavator, 600mm bucket with teeth

LOGGED: Collins

WATER OBSERVATIONS: Free groundwater observed at 2.2m during test pitting

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED
Initials:
Date:

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TEST PIT LOG

CLIENT: Queensland Rail
PROJECT: PCA, Proposed Redevelopment
LOCATION: Maitland Road and Woodlands Close, Hexham

SURFACE LEVEL: 4.9 AHD
EASTING: 376695
NORTHING: 6366549
DIP/AZIMUTH: 90°/--

PIT No: 112
PROJECT No: 39798.02
DATE: 02 Apr 08
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0	FILLING - Grey/brown coal reject with some rootlets, generally consisting of clay and gravel to cobble sized carbonaceous siltstone		D, PID	0.2		<1 ppm		
		From 0.5m, dark grey to black generally consisting of clayey gravel to cobble sized coal and carbonaceous siltstone (predominately coal)		D, PID	0.7		<1 ppm		
	1.7	FILLING - Dark grey silty fine to coarse grained sand with some fine sized sandy gravel filling with trace clay predominantly coal fines, wet		D, PID	1.8		<1 ppm	▼	
	2.4	FILLING - Dark grey silty fine to course grained sand predominantly coal fines, wet		pp	2.6		10-20 kPa		
	2.8	Pit discontinued at 2.8m, limit of investigation							

RIG: CASE CX 130 Excavator, 600mm bucket with teeth

LOGGED: Collins

WATER OBSERVATIONS: Free groundwater observed at 2.1m during test pitting

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED
Initials:
Date:

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TEST PIT LOG

CLIENT: Queensland Rail
PROJECT: PCA, Proposed Redevelopment
LOCATION: Maitland Road and Woodlands Close, Hexham

SURFACE LEVEL: 10.8 AHD
EASTING: 376535
NORTHING: 6366447
DIP/AZIMUTH: 90°/--

PIT No: 113
PROJECT No: 39798.02
DATE: 02 Apr 08
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0.2	FILLING - Light brown sand filling generally comprising of medium to coarse grained sand with trace fine to coarse sized gravel including rock, coal and brick fragments		D, PID	0.1		<1 ppm		
	1.2	FILLING - Grey gravelly sand filling generally comprising of sand, gravel and cobbles (including trace coal) with some clay lumps and brick inclusions, moist at 0.5m, 1.2m long steel beam From 0.6m, moist to wet at 1.0m, steel bar inclusion		D, PID	0.5		<1 ppm	▼	
	2.0	FILLING - Dark grey to black silt filling generally comprising of clay to sand sized coal fines, moist		D, PID	1.5		<1 ppm		
	3.5	FILLING - Dark grey/brown silty clay filling, predominantly coal fines, moist		D,PID	2.2		<1 ppm		
		Pit discontinued at 3.5m, refusal							

RIG: CASE CX 130 Excavator, 600mm bucket with teeth

LOGGED: Collins

WATER OBSERVATIONS: Perched groundwater observed at 1.2m during test pitting

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED	
Initials:	
Date:	

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TEST PIT LOG

CLIENT: Queensland Rail
PROJECT: PCA, Proposed Redevelopment
LOCATION: Maitland Road and Woodlands Close, Hexham

SURFACE LEVEL: 8.2 AHD
EASTING: 376687
NORTHING: 6366675
DIP/AZIMUTH: 90°/--

PIT No: 114
PROJECT No: 39798.02
DATE: 02 Apr 08
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
		FILLING - Grey/brown coal reject generally comprising of clay, gravel and cobbles, coal, damp		D, PID	0.2		<1 ppm		
	0.8	FILLING - Dark grey gravelly clay filling generally comprising of fine to coarse sized sandy gravel including coal, silty clay with some cobbles and trace shell fragments, moist/M>Wp		D, PID	1.0		<1 ppm		
	1.5	FILLING - Dark grey to black clayey silt/ silty clay filling generally comprising of clay to sand sized coal fines, moist, M>Wp		D, PID	2.0		<1 ppm		
		From 3.0m, moist to wet/ M>>Wp		D, PID	3.0		<1 ppm		
				D, PID	4.0		<1 ppm		
	5.5	Pit discontinued at 5.5m, limit of excavator reach							

Dynamic Penetrometer Test (blows per mm): 5, 10, 15, 20

RIG: CASE CX 130 Excavator, 600mm bucket with teeth

LOGGED: Collins

WATER OBSERVATIONS: No free groundwater observed during test pitting

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ⧗ Water level

CHECKED
Initials:
Date:

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TEST PIT LOG

CLIENT: Queensland Rail
PROJECT: PCA, Proposed Redevelopment
LOCATION: Maitland Road and Woodlands Close, Hexham

SURFACE LEVEL: 8.8 AHD
EASTING: 376599
NORTHING: 6366685
DIP/AZIMUTH: 90°/--

PIT No: 115
PROJECT No: 39798.02
DATE: 02 Apr 08
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0	FILLING - Brown sandy gravel fill generally comprising of sandy gravel and cobbles with numerous brick, concrete and ceramic inclusions		D, PID	0.1		<1 ppm		
		From 0.4m, predominately comprising of building rubble (brick, concrete, ceramic and metal)							
	1			D, PID	1.0		<1 ppm		1
	1.5	FILLING - Dark grey to black clayey silt filling generally comprising of clay to sand sized coal fines, moist to wet							
	2			D, PID	1.8		<1 ppm		2
	3								3
				D, PID	3.5		<1 ppm		
	4								4
	4.5	Pit discontinued at 4.5m, pit walls collapsing							
	5								5

Dynamic Penetrometer Test (blows per mm): 5, 10, 15, 20

RIG: CASE CX 130 Excavator, 600mm bucket with teeth

LOGGED: Collins

WATER OBSERVATIONS: No free groundwater observed during test pitting

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ⧭ Water level

CHECKED	
Initials:	
Date:	

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TEST PIT LOG

CLIENT: Queensland Rail
PROJECT: PCA, Proposed Redevelopment
LOCATION: Maitland Road and Woodlands Close, Hexham

SURFACE LEVEL: 9.1 AHD
EASTING: 376588
NORTHING: 6366706
DIP/AZIMUTH: 90°/--

PIT No: 115A
PROJECT No: 39798.02
DATE: 02 Apr 08
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm) 5 10 15 20
		FILL - dark grey coal reject generally comprising of clayey gravel to cobble sized coal and carbonaceous siltstone, moist		D, PID	0.2		<1 ppm	▼	
		From 0.2m, brick and ceramic inclusions							
		From 0.4m, predominately coarse gravel and cobble sized with numerous brick concrete and ceramic inclusions		D, PID	0.6		<1 ppm		
	1								1
	1.2	Pit discontinued at 1.2m, pit walls collapsing							
	2								2
	3								3
	4								4
	5								5

RIG: CASE CX 130 Excavator, 600mm bucket with teeth
LOGGED: Collins

WATER OBSERVATIONS: Perched groundwater observed at 0.4m while test pitting

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED
Initials:
Date:

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TEST PIT LOG

CLIENT: Queensland Rail
PROJECT: PCA, Proposed Redevelopment
LOCATION: Maitland Road and Woodlands Close, Hexham

SURFACE LEVEL: 10.4
EASTING: 376420
NORTHING: 6366670
DIP/AZIMUTH: 90°/--

PIT No: 116
PROJECT No: 39798.02
DATE: 02 Apr 08
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
10	0.0	FILLING - Dark grey to black coal reject generally comprising of silty sandy gavel and cobbles (coal fines, coal and carbonaceous siltstone), moist		D, PID	0.0		<1 ppm		
		From 0.3m, grey/ brown generally comprising of gravel and cobble sized rock, carbonaceous siltstone and coal, with some clay, moist		D, PID	0.5		<1 ppm		
9	1.4	FILLING - Dark grey to black clayey silt filling generally comprising of clay to sand sized coal fines, moist to wet		D, PID	1.5		<1 ppm		
8									
7	3.0	From 3.0m, wet		D, PID	3.0		<1 ppm	▼	
		From 3.6m, generally comprising of clayey gravel to cobble sized carbonaceous siltstone and coal, saturated							
6									
5	5.0	From 5.0m, clayey silt (coal fines)							
	5.5	Pit discontinued at 5.5m, limit of excavator reach							

RIG: CASE CX 130 Excavator, 600mm bucket with teeth

LOGGED: Collins

WATER OBSERVATIONS: Free groundwater observed at ~3.6m during test pitting

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED
Initials:
Date:

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TEST PIT LOG

CLIENT: Queensland Rail
PROJECT: PCA, Proposed Redevelopment
LOCATION: Maitland Road and Woodlands Close, Hexham

SURFACE LEVEL: 9.7 AHD
EASTING: 376296
NORTHING: 6366773
DIP/AZIMUTH: 90°/--

PIT No: 117
PROJECT No: 39798.02
DATE: 02 Apr 08
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0.0	FILLING - Dark grey coal reject generally comprising of clayey gravel to cobble sized carbonaceous siltstone and coal		D, PID	0.3		<1 ppm		
		From 0.6m, reduced clay content							
	1	From 1.0m, saturated		D, PID	1.0		<1 ppm	▼	1
	1.3	FILLING - Dark grey to black clayey silt filling generally comprising intermixed silty clay and silt to sand sized coal fines, wet							
	2			D, PID	2.0		<1 ppm		2
	3								3
				D, PID	3.5		<1 ppm		
	4								4
	5								5
	5.0	Pit discontinued at 5.0m, pit walls collapsing							

Dynamic Penetrometer Test (blows per mm): 5, 10, 15, 20

RIG: CASE CX 130 Excavator, 600mm bucket with teeth

LOGGED: Collins

WATER OBSERVATIONS: Perched groundwater observed at 1.0m during test pitting

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED
Initials:
Date:

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TEST PIT LOG

CLIENT: Queensland Rail
PROJECT: PCA, Proposed Redevelopment
LOCATION: Maitland Road and Woodlands Close, Hexham

SURFACE LEVEL: 7.8 AHD
EASTING: 376547
NORTHING: 6366987
DIP/AZIMUTH: 90°/--

PIT No: 118
PROJECT No: 39798.02
DATE: 03 Apr 08
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0.0	FILLING - Light grey brown fine to medium grained sand filling, damp		D, PID	0.2		<1 ppm		
	0.4	FILLING - Dark grey coal reject generally comprising of gravel and cobbles (predominately carbonaceous siltstone with some coal) and some clay and sand, damp		D, PID	1.0		<1 ppm		
	2.0	From 2.0m, decreased cobble content, moist		D, PID	2.2		<1 ppm		
				D, PID	3.5		<1 ppm		
	5.0	Pit discontinued at 5.0m, limit of excavator reach							

Dynamic Penetrometer Test (blows per mm): 5, 10, 15, 20

RIG: CASE CX 130 Excavator, 600mm bucket with teeth

LOGGED: Collins

WATER OBSERVATIONS: No free groundwater observed during test pitting

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ⧭ Water level

CHECKED
Initials:
Date:

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TEST PIT LOG

CLIENT: Queensland Rail
PROJECT: PCA, Proposed Redevelopment
LOCATION: Maitland Road and Woodlands Close, Hexham

SURFACE LEVEL: 9.1 AHD
EASTING: 376316
NORTHING: 6366932
DIP/AZIMUTH: 90°/--

PIT No: 119
PROJECT No: 39798.02
DATE: 03 Apr 08
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
		FILLING - Dark grey coal reject, generally comprising of clayey gravel to cobble size coal and carbonaceous siltstone, moist		D, PID	0.2		<1 ppm		
		From 0.4m, generally comprising of gravel to cobble sized carbonaceous siltstone with some coal and clay, moist							
	1			D, PID	1.0		<1 ppm		1
		From 1.5m, increased coal content							
	2			D, PID	2.0		<1 ppm		2
	2.9	FILLING - Dark grey to black clayey silt filling generally comprising of intermixed silty clay and silt to sand sized coal fines, wet						▼	
	3			D, PID	3.5		<1 ppm		3
	4			D, PID	4.5		<1 ppm		4
	5								5
	5.5	Pit discontinued at 5.5m, limit of excavator reach							

RIG: CASE CX 130 Excavator, 600mm bucket with teeth

LOGGED: Collins

WATER OBSERVATIONS: Perched groundwater observed at 2.9m during test pitting

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED
Initials:
Date:

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TEST PIT LOG

CLIENT: Queensland Rail
PROJECT: PCA, Proposed Redevelopment
LOCATION: Maitland Road and Woodlands Close, Hexham

SURFACE LEVEL: 1.3 AHD
EASTING: 377012
NORTHING: 6365733
DIP/AZIMUTH: 90°/--

PIT No: 120
PROJECT No: 39798.02
DATE: 03 Apr 08
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0.15	FILLING - Generally comprising black medium grained sandy silty gravel, gravel predominantly angular coal reject (80%) and trace concrete cobble sized fragments, humid		D, PID	0.0 0.05		<1 ppm		
		FILLING - Generally comprising dark brown clayey silty gravel, gravel predominantly coal chitter (60%) with some angular rail ballast, humid		D, PID	0.5		<1 ppm	▷	
1	1.0	SILTY SAND / SANDY SILT - (medium dense / firm) grey mottled orange fine grained silty sand / sandy silt, with some clay, damp		D, PID	1.1		<1 ppm		1
	1.5	SILTY SAND - Grey mottled orange / brown fine to medium grained silty sand, with some clay, moist to wet							
2				D, PID	2.0		<1 ppm		2
		From 2.3m, grading to silty sand, saturated							
	2.6	Pit discontinued at 2.6m, limit of investigation							
3									3
4									4
5									5

RIG: 6 tonne backhoe, 90mm bucket with teeth

LOGGED: Karpiel

WATER OBSERVATIONS: Seepage at 0.85m to 1.0m, free groundwater observed at 2.5m during test pitting

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep
		⧗	Water level

CHECKED
Initials:
Date:

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TEST PIT LOG

CLIENT: Queensland Rail
PROJECT: PCA, Proposed Redevelopment
LOCATION: Maitland Road and Woodlands Close, Hexham

SURFACE LEVEL: 3.5 AHD
EASTING: 377167
NORTHING: 6365913
DIP/AZIMUTH: 90°/--

PIT No: 121
PROJECT No: 39798.02
DATE: 04 Apr 08
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0.0			D, PID	0.0		<1 ppm		
	0.15	FILLING - Generally comprising black medium to coarse grained sandy gravel (coal reject), trace rootlets, humid			0.05				
		FILLING - Generally comprising brown medium to coarse grained, sandy gravel, humid		D, PID	0.3		<1 ppm		
	0.45	FILLING - Generally comprising grey clayey silty gravel, gravel predominantly coal reject (80 - 90%), humid							
	1			D, PID	1.0		<1 ppm		
	1.3	FILLING - Generally comprising grey gravelly clayey silt, trace cobbles, gravel predominantly coal reject (30 - 40%), damp		D, PID	1.5		<1 ppm	▼	
	2								
	2.6	FILLING - Generally comprising grey gravel, with trace cobbles, silt and fine grained sand, gravel, cobbles, predominantly coal reject, saturated		D, PID	2.7		<1 ppm		
	3								
	3.1	Pit discontinued at 3.1m, limit of investigation							
	4								
	5								

RIG: 6 tonne backhoe, 90mm bucket with teeth

LOGGED: Karpiel

WATER OBSERVATIONS: Free groundwater observed at 2.25m during test pitting

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED
Initials:
Date:

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TEST PIT LOG

CLIENT: Queensland Rail
PROJECT: PCA, Proposed Redevelopment
LOCATION: Maitland Road and Woodlands Close, Hexham

SURFACE LEVEL: 2.6 AHD
EASTING: 377185
NORTHING: 6365818
DIP/AZIMUTH: 90°/--

PIT No: 122
PROJECT No: 39798.02
DATE: 03 Apr 08
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0.1	FILLING - Generally comprising light brown silty sandy gravel, gravel pedominantly subrounded, trace rootlets, humid		D, PID	0.0 0.05		<1 ppm		
		FILLING - Generally comprising black and light brown fine to medium grained sandy clayey gravel, gravel pedominantly angular coal chiter (70%) with some caronaceous siltstone (10 - 15%)		D, PID	0.5		<1 ppm		
1	1.0	FILLING - Generally comprising dark brown sandy silty gravel, gravel predominantly coal reject (60%) and carbonaceous siltstone (35%)		D, PID	1.1		<1 ppm	▼	
	1.35	CLAYEY SILT - Dark grey / brown clayey silt, slight organic (sulphur) odour, M>>Wp		D, PID	1.5		21 ppm		
	1.6	Pit discontinued at 1.6m, limit of investigation							
2									
3									
4									
5									

Dynamic Penetrometer Test (blows per mm): 5, 10, 15, 20

RIG: 6 tonne backhoe, 90mm bucket with teeth
LOGGED: Karpiel

WATER OBSERVATIONS: Free groundwater observed at 1.15m during test pitting

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED
Initials:
Date:

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TEST PIT LOG

CLIENT: Queensland Rail
PROJECT: PCA, Proposed Redevelopment
LOCATION: Maitland Road and Woodlands Close, Hexham

SURFACE LEVEL: 5.0 AHD
EASTING: 376987
NORTHING: 6365866
DIP/AZIMUTH: 90°/--

PIT No: 123
PROJECT No: 39798.02
DATE: 03 Apr 08
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
		FILLING - Generally comprising dark brown and black course grained clayey sandy gravel with some silt, sand and gravel and predominantly coal reject, humid		D, PID	0.0 0.05		<1 ppm		
				D	0.5		<1 ppm		
	1	From 1.1m, with some angular gravel and cobbles (rail ballast)							
				D	1.5		<1 ppm		
	2								
				D	2.7		<1 ppm		
		From 2.8m, wet to saturated						▼	
	3 3.0	FILLING - Generally comprising dark grey gravel and cobbles with trace silt, gravel and cobbles predominantly carbonaceous siltstone, trace coal reject, saturated		D	3.1		<1 ppm		
	3.3	Pit discontinued at 3.3m, slow progress							
	4								
	5								

RIG: 6 tonne backhoe, 90mm bucket with teeth

LOGGED: Karpiel

WATER OBSERVATIONS: Free groundwater observed at 2.95m during test pitting

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED
Initials:
Date:

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TEST PIT LOG

CLIENT: Queensland Rail
PROJECT: PCA, Proposed Redevelopment
LOCATION: Maitland Road and Woodlands Close, Hexham

SURFACE LEVEL: 3.1 AHD
EASTING: 376666
NORTHING: 6365823
DIP/AZIMUTH: 90°/--

PIT No: 124
PROJECT No: 39798.02
DATE: 03 Apr 08
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0.0	FILLING - Generally comprising (compacted) brown silty sandy gravel, gravel predominantly angular (rail ballast), trace concrete fragments and rootlets, humid		D, PID	0.0 0.05		<1ppm		
	0.4	FILLING - Generally comprising (compacted) black gravel, with some brown clayey silt, gravel predominantly angular coal reject (90%) with some carbonaceous siltstone (5%), damp		D, PID	0.5		<1ppm		
1				D, PID	1.0		<1ppm		1
	1.5	FILLING - Generally comprising (compacted), black and brown angular gravel, with some cobbles (rail ballast), saturated		D, PID	1.6		<1ppm	▼	
	1.8	FILLING - Generally comprising (compacted), black clayey silty gravel, with some medium to course grained sand, gravel predominantly coal reject, saturated		D, PID	2.0		<1ppm		
2				D, PID	2.5		<1ppm		2
3				D, PID	3.0		<1ppm		3
	3.2	Pit discontinued at 3.2m, refusal in fill							
4									4
5									5

RIG: 6 tonne backhoe, 90mm bucket with teeth

LOGGED: Karpiel

WATER OBSERVATIONS: Free groundwater observed at 1.5m during test pitting

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED
Initials:
Date:

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TEST PIT LOG

CLIENT: Queensland Rail
PROJECT: PCA, Proposed Redevelopment
LOCATION: Maitland Road and Woodlands Close, Hexham

SURFACE LEVEL: 2.5 AHD
EASTING: 377096
NORTHING: 6366017
DIP/AZIMUTH: 90°/--

PIT No: 125
PROJECT No: 39798.02
DATE: 04 Apr 08
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0.0			PID	0.0		<1 ppm		
					0.05				
	0.2	FILLING - Generally comprising brown silty sandy gravel, gravel predominantly coal reject with some rounded gravel, humid		D	0.3		<1 ppm		
	0.4	FILLING - Generally comprising brown medium grained gravelly sand, gravel predominatly rounded with some coal reject, fragments of terracotta pipe, humid							
		FILLING - Generally comprising black medium grained clayey sandy gravel, gravel predominantly coal reject (90%), humid							
1				D	1.0		<1 ppm	▼	1
	1.4	FILLING - Generally comprising black cobbly gravel, with trace sand and silt, cobbles and gravel predominantly coal reject, with some carbonaceous siltstone, saturated							
2	2.0	SILTY CLAY - Firm grey mottled orange silty clay with some grey sand, M>>Wp		D	2.2		<1 ppm		2
	2.35	Pit discontinued at 2.35m, limit of investigation							
3									3
4									4
5									5

RIG: 6 tonne backhoe, 90mm bucket with teeth

LOGGED: Karpiel

WATER OBSERVATIONS: Free groundwater observed at 1.25m during test pitting

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED
Initials:
Date:

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TEST PIT LOG

CLIENT: Queensland Rail
PROJECT: PCA, Proposed Redevelopment
LOCATION: Maitland Road and Woodlands Close, Hexham

SURFACE LEVEL: 2.3 AHD
EASTING: 377050
NORTHING: 6366075
DIP/AZIMUTH: 90°/--

PIT No: 126
PROJECT No: 39798.02
DATE: 04 Apr 08
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0.2	FILLING - Generally comprised brown fine to medium grained gravelly silty sand, gravel predominantly rounded, trace rootlets, humid		D, PID	0.0 0.05		<1 ppm		
		FILLING - Generally comprising grey medium grained clayey sandy gravel, gravel predominantly coal reject, humid		D, PID	0.5		<1 ppm		
		From 0.7m to 0.75m, stained green From 0.7m to 0.8m, trace plastic and metal pipework		D, PID	0.7		<1 ppm	▼	
	1.0	FILLING - Generallly comprising black gravel (coal reject), with trace silt and sand, saturated		D, PID	1.1		<1 ppm		
	1.2	Pit discontinued at 1.2m, refusal on piece of scrap metal							

RIG: 6 tonne backhoe, 90mm bucket with teeth

LOGGED: Karpiel

WATER OBSERVATIONS: Free groundwater observed at 0.8m during test pitting

REMARKS: Pit located near sewer tank

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED
Initials:
Date:

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TEST PIT LOG

CLIENT: Queensland Rail
PROJECT: PCA, Proposed Redevelopment
LOCATION: Maitland Road and Woodlands Close, Hexham

SURFACE LEVEL: 3.5 AHD
EASTING: 377095
NORTHING: 6366114
DIP/AZIMUTH: 90°/--

PIT No: 127
PROJECT No: 39798.02
DATE: 04 Apr 08
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0.1	FILLING - Generally comprising brown fine to medium grained gravelly silty sand, occasional large rail sleepers (timber), humid		D, PID	0.0		<1 ppm		
				D, PID	0.05		<1 ppm		
				D, PID	0.15				
		FILLING - Generally comprising brown medium grained sandy gravel, gravel predominantly coal reject, humid		D, PID	0.4		<1 ppm		
	0.5	FILLING - Generally comprising brown medium to coarse grained sandy gravel, humid at 0.6m, trace electrical cable							
	0.9	FILLING - Generally comprising grey black medium grained sandy gravel with trace cobbles, gravel and cobbles predominantly coal reject, trace brick fragments, humid		D, PID	1.0		<1 ppm		
1	1.2	FILLING - Generally comprising grey clayey sandy gravel, trace cobbles, gravel and cobbles predominantly coal reject, humid							1
2				D, PID	2.0		<1 ppm	▼	2
3	3.0								3
	3.1	FILLING - Generally comprising grey / black gravelly silty sand, gravel predominantly coal reject, wet							
	3.2	SILTY CLAY - Firm grey mottled orange silty clay, M>Wp		D, PID	3.2		<1 ppm		
		Pit discontinued at 3.2m, limit of investigation							
4									4
5									5

RIG: 6 tonne backhoe, 90mm bucket with teeth

LOGGED: Karpiel

WATER OBSERVATIONS: Free goundwater observed at 2.65m during test pitting

REMARKS: Rail sleepers at surface, test pit adjacent to concrete slab, possibly old signal lights

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED
Initials:
Date:

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TEST PIT LOG

CLIENT: Queensland Rail
PROJECT: PCA, Proposed Redevelopment
LOCATION: Maitland Road and Woodlands Close, Hexham

SURFACE LEVEL: 1.6 AHD
EASTING: 377060
NORTHING: 6366127
DIP/AZIMUTH: 90°/--

PIT No: 128
PROJECT No: 39798.02
DATE: 04 Apr 08
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0	FILLING - Generally comprising grey medium grained silty sand, stained black, strong hydrocarbon odour, saturated		D, PID	0.05		<1 ppm		
				D, PID	0.5		<1 ppm		
	1	From 1.0m, with some gravel (coal reject)							
	1.5	CLAYEY SILT - Stiff, dark brown clayey silt, trace rootlets, M>Wp		D, PID, pp	1.6		<1 ppm, 160 kPa		
	1.8	SILTY CLAY - Soft, grey mottled orange silty clay, trace fine grained sand, M>>Wp		D, PID, pp	1.9		<1 ppm, 30 kPa		
	2 2.0	Pit discontinued at 2.0m, limit of investigation							
	3								
	4								
	5								

RIG: 6 tonne backhoe, 90mm bucket with teeth

LOGGED: Karpiel

WATER OBSERVATIONS: Ponded surface water encountered with hydrocarbon odour and slick

REMARKS: Test pit excavated in former A/G tank pit approx 0.55m deep, with 0.2m of surface water in base pit

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ⧭ Water level

CHECKED
Initials:
Date:

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TEST PIT LOG

CLIENT: Queensland Rail
PROJECT: PCA, Proposed Redevelopment
LOCATION: Maitland Road and Woodlands Close, Hexham

SURFACE LEVEL: 2.5 AHD
EASTING: 376984
NORTHING: 6366091
DIP/AZIMUTH: 90°/--

PIT No: 129
PROJECT No: 39798.02
DATE: 04 Apr 08
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0.0			A,PID	0.0		<1 ppm		
	0.15	FILLING - Generally comprising brown fine to medium grained silty sandy gravel, gravel predominately rounded, trace rootlets, humid			0.05				
				D,PID	0.3		2 ppm		
	0.4	FILLING - Generally comprising intermixed brown medium grained clayey sand and black clayey silty gravel (coal reject), humid						▼	
		FILLING - Generally comprising dark grey fine to medium grained clayey sandy gravel, gravel predominately coal reject, slight hydrocarbon odour, damp							
	1			D,PID	1.0		5 ppm		1
	1.4								
		FILLING - Generally comprising black gravel with some fine to medium grained sand and silt, gravel predominately coal chitter (98%) slight hydrocarbon odour, saturated		D,PID	1.5		4 ppm		
		From 1.8m, with some cobbles							
	2								2
				D,PID	2.5		2 ppm		
	2.8								
		SILTY CLAY - Firm, grey mottled orange, silty clay M>>Wp		D,PID,pp	2.9		<1 ppm, 70 kPa		
	3 3.0	Pit discontinued at 3.0m, limit of investigation							3
	4								4
	5								5

RIG: 6 tonne backhoe, 90mm bucket with teeth

LOGGED: Karpiel

WATER OBSERVATIONS: Free groundwater observed at 0.65m during test pitting

REMARKS: Strong seepage from 1.4m

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED
Initials:
Date:

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TEST PIT LOG

CLIENT: Queensland Rail
PROJECT: PCA, Proposed Redevelopment
LOCATION: Maitland Road and Woodlands Close, Hexham

SURFACE LEVEL: 4.5 AHD
EASTING: 376756
NORTHING: 6366008
DIP/AZIMUTH: 90°/--

PIT No: 130
PROJECT No: 39798.02
DATE: 03 Apr 08
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0.2	FILLING - Generally comprising black clayey silty gravel, predominately coal reject and coal fines with some siltstone fragments, trace rootlets		D, PID	0.2		<1ppm		
	0.6	FILLING - Generally comprising brown clayey silty gravel with some coarse grained sand, sand and gravel predominately coal reject (90%), humid		D	0.5		<1ppm		
		FILLING - Generally comprising dark grey black clayey sandy gravel, predominately coal reject (60%) and carbonaceous siltstone (35%), humid		D	1.0		<1ppm		
	2.0	FILLING - Generally comprising gravel with some cobbles, trace silt, predominately coal reject (45%) with some carbonaceous siltstone (45%), saturated		D	2.5		<1ppm	▼	
	3.1	Pit discontinued at 3.1m, limit of investigation							

Dynamic Penetrometer Test (blows per mm): 5, 10, 15, 20

RIG: 6 tonne backhoe, 90mm bucket with teeth

LOGGED: Karpiel

WATER OBSERVATIONS: Free groundwater observed at 2.45m during test pitting

REMARKS: Test pit sidewall collapse from 1.7m

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED
Initials:
Date:

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TEST PIT LOG

CLIENT: Queensland Rail
PROJECT: PCA, Proposed Redevelopment
LOCATION: Maitland Road and Woodlands Close, Hexham

SURFACE LEVEL: 5.5 AHD
EASTING: 376747
NORTHING: 6366008
DIP/AZIMUTH: 90°/--

PIT No: 130A
PROJECT No: 39798.02
DATE: 03 Apr 08
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
		FILLING - Generally comprising black silty sandy gravel, predominantly coal fines and coal reject, humid		D/PID	0.5		<1ppm		
	1.1	Pit discontinued at 1.1m, limit of investigation		D	1.1		<1ppm		

RIG: 6 tonne backhoe, 90mm bucket with teeth

LOGGED: Karpiel

WATER OBSERVATIONS: No free groundwater observed during test pitting

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ⧭ Water level

CHECKED
Initials:
Date:

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TEST PIT LOG

CLIENT: Queensland Rail
PROJECT: PCA, Proposed Redevelopment
LOCATION: Maitland Road and Woodlands Close, Hexham

SURFACE LEVEL: 1.7 AHD
EASTING: 377038
NORTHING: 6366173
DIP/AZIMUTH: 90°/--

PIT No: 131
PROJECT No: 39798.02
DATE: 04 Apr 08
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0.0	FILLING - Generally comprising dark brown medium grained sandy silt with trace gravel and rootlets, humid to damp		D,PID	0.0		<1 ppm		
	0.2	FILLING - Generally comprising brown, medium grained sandy gravel, gravel predominately rounded, humid		D,PID	0.3		<1 ppm		
	0.6	FILLING - Generally comprising dark grey and brown silty sandy gravel, gravel predominately coal reject From 0.7m to 0.9m, broken terracotta pipe with moderate hydrocarbon odour		D,PID D,PID D,PID	0.8 0.9 1.1		<1 ppm <1 ppm <1 ppm		
	1.2	CLAYEY SILT - Stiff dark brown clayey silt, trace rootlets, M >Wp		D,PID,pp	1.3		<1 ppm,160kPa		
	1.4	Pit discontinued at 1.4m, limit of investigation							

RIG: 6 tonne backhoe, 90mm bucket with teeth

LOGGED: Karpiel

WATER OBSERVATIONS: No free groundwater observed during test pitting

REMARKS: Water from pipe exhibited hydrocarbon odour, and green slick on surface of water, water at 0.75m

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ⧗ Water level

CHECKED
Initials:
Date:

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TEST PIT LOG

CLIENT: Queensland Rail
PROJECT: PCA, Proposed Redevelopment
LOCATION: Maitland Road and Woodlands Close, Hexham

SURFACE LEVEL: 2.0 AHD
EASTING: 377003
NORTHING: 6366179
DIP/AZIMUTH: 90°/--

PIT No: 132
PROJECT No: 39798.02
DATE: 04 Apr 08
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm) 5 10 15 20
		FILLING - Generally comprising brown fine to medium grained sandy silty gravel, gravel predominately coal reject, humid							
	0.3	Pit discontinued at 0.3m, refusal on concrete							
	1								1
	2								2
	3								3
	4								4
	5								5

RIG: 6 tonne backhoe, 90mm bucket with teeth

LOGGED: Karpiel

WATER OBSERVATIONS: No free groundwater observed during test pitting

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ⧭ Water level

CHECKED
Initials:
Date:

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TEST PIT LOG

CLIENT: Queensland Rail
PROJECT: PCA, Proposed Redevelopment
LOCATION: Maitland Road and Woodlands Close, Hexham

SURFACE LEVEL: 2.1 AHD
EASTING: 377000
NORTHING: 6366176
DIP/AZIMUTH: 90°/--

PIT No: 132A
PROJECT No: 39798.02
DATE: 04 Apr 08
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm) 5 10 15 20
		FILLING - Generally comprising brown fine to medium grained sandy silty gravel, gravel predominately coal reject and trace terracotta tiles, humid		D	0.0 0.05				
	0.2	Pit discontinued at 0.2m, refusal on concrete							
	1								1
	2								2
	3								3
	4								4
	5								5

RIG: 6 tonne backhoe, 90mm bucket with teeth

LOGGED: Karpiel

WATER OBSERVATIONS: No free groundwater observed during test pitting

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ⧭ Water level

CHECKED
Initials:
Date:

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TEST PIT LOG

CLIENT: Queensland Rail
PROJECT: PCA, Proposed Redevelopment
LOCATION: Maitland Road and Woodlands Close, Hexham

SURFACE LEVEL: 2.4 AHD
EASTING: 377034
NORTHING: 6366223
DIP/AZIMUTH: 90°/--

PIT No: 133
PROJECT No: 39798.02
DATE: 07 Apr 08
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
									5 10 15 20
		FILLING - Generally comprising brown fine to medium grained silty sand, with some angular gravel, (rail ballast), rootlets to 0.1m, humid to damp		D,PID	0.0		<1 ppm		
	0.25								
		FILLING - Generally comprising orange brown medium grained sand, trace angular gravel (coal reject and rail ballast), damp		D,PID	0.4		<1 ppm		
	0.55								
		FILLING - Generally comprising grey gravel with trace silt and sand, gravel predominately coal reject (85-90%) with some rail ballast (5-10%), damp							
		From 0.8m, grading to cobble and gravel sized coal reject and rail ballast		D,PID	1.0		<1 ppm	▼	
1		From 1.3m, with some dark grey silt and increase in cobbles							1
2		From 2.2m, some grey medium grained clayey sand inclusions							2
	2.7	CLAYEY SILT - Soft, dark grey clayey silt, trace organic with fine grained sandy matter, M >Wp		D,PID	2.8		<1 ppm		
	2.9	Pit discontinued at 2.9m, limit of investigation							
3									3
4									4
5									5

RIG: 6 tonne backhoe, 90mm bucket with teeth

LOGGED: Karpiel

WATER OBSERVATIONS: Free groundwater observed at 0.95m during test pitting

REMARKS: Test pit side wall collapse from 0.6m

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED
Initials:
Date:

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TEST PIT LOG

CLIENT: Queensland Rail
PROJECT: PCA, Proposed Redevelopment
LOCATION: Maitland Road and Woodlands Close, Hexham

SURFACE LEVEL: 2.5 AHD
EASTING: 377025
NORTHING: 6366234
DIP/AZIMUTH: 90°/--

PIT No: 134
PROJECT No: 39798.02
DATE: 07 Apr 08
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0.0	FILLING - Generally comprising brown medium grained gravelly sand, damp		D,PID	0.1		<1 ppm		
	0.3	FILLING - Generally comprising brown/grey clayey sandy gravel, gravel predominately coal reject, damp		D,PID	0.5		<1 ppm		
	1.05	FILLING - Generally comprising grey gravel trace silt and sand, gravel predominately coal reject, saturated		D,PID	1.2		<1 ppm	▼	
	1.7	CLAYEY SILT - soft, dark grey clayey silt with some fine grained sand, M >>Wp		D,PID	2.0		<1 ppm		
	2.8	Pit discontinued at 2.8m, limit of investigation							

RIG: 6 tonne backhoe, 90mm bucket with teeth

LOGGED: Karpiel

WATER OBSERVATIONS: Free groundwater observed at 1.05m during test pitting

REMARKS: Test pit side wall collapse from 1.15m

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED
Initials:
Date:

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TEST PIT LOG

CLIENT: Queensland Rail
PROJECT: PCA, Proposed Redevelopment
LOCATION: Maitland Road and Woodlands Close, Hexham

SURFACE LEVEL: 2.8 AHD
EASTING: 376965
NORTHING: 6366188
DIP/AZIMUTH: 90°/--

PIT No: 135
PROJECT No: 39798.02
DATE: 04 Apr 08
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0.05	FILLING - Generally comprising brown fine grained gravelly silty sand, gravel predominately coal reject, humid		D,PID	0.0		<1 ppm		
	0.1	FILLING - Generally comprising brown medium grained gravelly sand, humid			0.05				
		FILLING - Generally comprising black fine to coarse grained silty sandy gravel, predominately coal reject, humid		D,PID	0.5		<1 ppm		
	1	From 1.0m, wet						▼	
	1.5	FILLING - Generally comprising black/dark grey gravel and cobbles (coal reject), with trace silt and sand, saturated							
	2	From 2.0m, occasional large boulders (carbonaceous siltstone) up to 0.7m							
	2.4	FILLING - Generally comprising soft grey silty clay with trace siltstone fragments, saturated		D,PID	2.6		<1 ppm		
	2.7	FILLING - Generally comprising boulders up to 0.8m length, with trace gravel saturated		D,PID	2.9				
	3 3.0	Pit discontinued at 3.0m, reach / extent of backhoe							
	4								
	5								

RIG: 6 tonne backhoe, 90mm bucket with teeth

LOGGED: Karpiel

WATER OBSERVATIONS: Free groundwater observed at 0.95m during test pitting

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED
Initials:
Date:

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TEST PIT LOG

CLIENT: Queensland Rail
PROJECT: PCA, Proposed Redevelopment
LOCATION: Maitland Road and Woodlands Close, Hexham

SURFACE LEVEL: 2.8 AHD
EASTING: 376990
NORTHING: 6366223
DIP/AZIMUTH: 90°/--

PIT No: 136
PROJECT No: 39798.02
DATE: 07 Apr 08
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0.2	FILLING - Generally comprising brown sandy silty gravel, predominately coal reject, trace scrap metal and rootlets, damp		D,PID	0.1		<1 ppm		
		Pit discontinued at 0.2m, refusal on concrete							

RIG: 6 tonne backhoe, 90mm bucket with teeth

LOGGED: Karpiel

WATER OBSERVATIONS: No free groundwater observed while during test pitting

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED
Initials:
Date:

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TEST PIT LOG

CLIENT: Queensland Rail
PROJECT: PCA, Proposed Redevelopment
LOCATION: Maitland Road and Woodlands Close, Hexham

SURFACE LEVEL: 2.7 AHD
EASTING: 376988
NORTHING: 6366231
DIP/AZIMUTH: 90°/--

PIT No: 136A
PROJECT No: 39798.02
DATE: 07 Apr 08
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0.0	FILLING - Generally comprising brown gravelly sandy silt, gravel, predominately coal reject, trace scrap metal, and rootlets, damp		D,PID	0.0 0.05		<1 ppm		
				D,PID	0.5		<1 ppm		
	0.6	FILLING - Generally comprising grey brown and orange brown, clayey sandy gravel, gravel predominately coal reject, humid							
	1	From 1.3m timber rail sleeper approximately 1.5m long		D,PID	1.5		<1 ppm	▼	
	2	From 1.9m, saturated							
	2.0	Pit discontinued at 2.0m, refusal on concrete							
	3								
	4								
	5								

RIG: 6 tonne backhoe, 90mm bucket with teeth

LOGGED: Karpiel

WATER OBSERVATIONS: Free groundwater observed at 1.6m during test pitting

REMARKS: Pit orientated north-south, southern end comprised intermixed grey clayey silt and clayey sand

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED
Initials:
Date:

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TEST PIT LOG

CLIENT: Queensland Rail
PROJECT: PCA, Proposed Redevelopment
LOCATION: Maitland Road and Woodlands Close, Hexham

SURFACE LEVEL: 4.1 AHD
EASTING: 376899
NORTHING: 6366140
DIP/AZIMUTH: 90°/--

PIT No: 137
PROJECT No: 39798.02
DATE: 03 Apr 08
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
		FILLING - Generally comprising light brown fine to medium grained gravelly silty sand, gravel predominately rounded, humid		D	0.1		<1 ppm		
	0.3	Pit discontinued at 0.3m, refusal on concrete slab (dipping to north)							

Dynamic Penetrometer Test (blows per mm): 5 10 15 20; 1 2 3 4 5

RIG: 6 tonne backhoe, 90mm bucket with teeth

LOGGED: Karpiel

WATER OBSERVATIONS: No free groundwater observed during test pitting

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ⧭ Water level

CHECKED
Initials:
Date:

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TEST PIT LOG

CLIENT: Queensland Rail
PROJECT: PCA, Proposed Redevelopment
LOCATION: Maitland Road and Woodlands Close, Hexham

SURFACE LEVEL: 4.6 AHD
EASTING: 376820
NORTHING: 6366119
DIP/AZIMUTH: 90°/--

PIT No: 138
PROJECT No: 39798.02
DATE: 03 Apr 08
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0.2	FILLING - Generally comprising black/grey fine grained gravelly sandy silt, gravel predominately coal chitter, trace rootlets, white staining to 0.02m (salt scald), humid		D/PID	0.0 0.05		<1ppm		
		FILLING - Generally comprising black clayey silty gravel, gravel predominately coal chitter, damp		D	0.5		<1ppm		
	1			D	1.0		<1ppm		
	1.2	Pit discontinued at 1.2m, refusal on concrete							

Dynamic Penetrometer Test (blows per mm): 5, 10, 15, 20

RIG: 6 tonne backhoe, 90mm bucket with teeth

LOGGED: Karpiel

WATER OBSERVATIONS: No free groundwater observed during test pitting

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED
Initials:
Date:

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TEST PIT LOG

CLIENT: Queensland Rail
PROJECT: PCA, Proposed Redevelopment
LOCATION: Maitland Road and Woodlands Close, Hexham

SURFACE LEVEL: ~4.6 AHD
EASTING:
NORTHING:
DIP/AZIMUTH: 90°/--

PIT No: 138A
PROJECT No: 39798.02
DATE: 03 Apr 08
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm) 5 10 15 20
		FILLING - Generally comprising black/grey fine grained gravelly sandy silt, gravel predominately coal chitter, trace rootlets, white staining to 0.02m (salt scald), humid							
	0.45	Pit discontinued at 0.45m, refusal on concrete slab (dipping to north)							
	1								1
	2								2
	3								3
	4								4
	5								5

RIG: 6 tonne backhoe, 90mm bucket with teeth

LOGGED: Karpiel

WATER OBSERVATIONS: No free groundwater observed during test pitting

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ⧗ Water level

CHECKED
Initials:
Date:

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TEST PIT LOG

CLIENT: Queensland Rail
PROJECT: PCA, Proposed Redevelopment
LOCATION: Maitland Road and Woodlands Close, Hexham

SURFACE LEVEL: 3.3 AHD
EASTING: 376943
NORTHING: 6366257
DIP/AZIMUTH: 90°/--

PIT No: 139
PROJECT No: 39798.02
DATE: 04 Apr 08
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0.0			D,PID	0.0		<1 ppm		
					0.05				
	0.2	FILLING - Generally comprising dark brown/black fine grained gravelly sandy silty (coal fines), trace rootlets, humid							
		FILLING - Generally comprising dark brown black fine to medium grained sandy silty gravel (coal reject), humid		D,PID	0.5		<1 ppm		
		From 0.8m, with trace cobbles (coal reject)							
	1								1
		From 1.1m to 1.2m, trace timber							
	1.3								
		FILLING - Generally comprising black gravel, trace silt and sand, gravel predominantly coal reject, moist		D,PID	1.4		<1 ppm		
	1.6	From 1.55m to 1.6m, water seepage						▷	
		FILLING - Generally comprising grey mottled orange brown fine grained sandy silty clay with some angular gravel (coal reject) and occasional cobbles (carbonaceous siltstone), wet		D,PID	1.8		<1 ppm		
	2								2
	2.2								
		FILLING - Generally comprising intermixed light grey clayey silt and light brown silty clayey sand with some angular carbonaceous siltstone gravel, wet		D,PID	2.3		<1 ppm		
				D,PID	2.7		<1 ppm		
	3								3
	3.2	Pit discontinued at 3.2m, limit of backhoe reach							
	4								4
	5								5

RIG: 6 tonne backhoe, 90mm bucket with teeth

LOGGED: Karpiel

WATER OBSERVATIONS: Seepage at 1.55m to 1.6m during test pitting

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep
		⧩	Water level

CHECKED
Initials:
Date:

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TEST PIT LOG

CLIENT: Queensland Rail
PROJECT: PCA, Proposed Redevelopment
LOCATION: Maitland Road and Woodlands Close, Hexham

SURFACE LEVEL: 2.1 AHD
EASTING: 376990
NORTHING: 6366399
DIP/AZIMUTH: 90°/--

PIT No: 140
PROJECT No: 39798.02
DATE: 07 Apr 08
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0.0	FILLING - Generally comprising black medium to coarse grained gravelly sand, gravel and sand predominately comprising coal reject and ash, damp		D,PID	0.1		<1 ppm		
	0.7	FILLING - Generally comprising brown medium grained gravelly sand, damp		D,PID	0.75		<1 ppm		
	0.8			D,PID	0.9		<1 ppm		
	1	FILLING - Generally comprising grey gravel with some sand and silt, gravel predominately coal reject, trace ash, damp						▷	
	1.2	From 1.1m to 1.2m, seepage							
		CLAY - Soft, grey clay with some silt, M >Wp		D,PID,pp	1.5		<1 ppm, 30kPa		
	1.8	Pit discontinued at 1.8m, limit of investigation							
	2								
	3								
	4								
	5								

RIG: 6 tonne backhoe, 90mm bucket with teeth

LOGGED: Karpiel

WATER OBSERVATIONS: Seepage at 1.1m to 1.2m during test pitting

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep
		⧩	Water level

CHECKED
Initials:
Date:

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TEST PIT LOG

CLIENT: Queensland Rail
PROJECT: PCA, Proposed Redevelopment
LOCATION: Maitland Road and Woodlands Close, Hexham

SURFACE LEVEL: 4.1 AHD
EASTING: 376897
NORTHING: 6366335
DIP/AZIMUTH: 90°/--

PIT No: 141
PROJECT No: 39798.02
DATE: 08 Apr 08
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0.0	FILLING - Generally comprising grey brown fine to medium grained sandy clayey silt with some gravel and cobbles, gravel and cobbles predominately angular siltstone, humid		D,PID	0.0 0.05		<1 ppm		
	0.75	FILLING - Generally comprising brown fine to medium to coarse grained gravelly sand (predominately coal fines), humid		D,PID	0.8		<1 ppm		
	1.1	FILLING - Generally comprising intermixed medium to coarse grained sandy gravel with trace silt, gravel predominately coal reject (85%) and siltstone (20%) with some grey silty clay inclusions, damp		D,PID	1.3		<1 ppm		
	1.4	FILLING - Generally comprising grey silty clay with some black medium grained sandy coal reject inclusions, humid							
		FILLING - Generally comprising intermixed medium to coarse grained sandy gravel with trace silt, gravel predominately coal reject (85%) and siltstone (20%) with some grey silty clay inclusions, damp From 1.8m, coal reject content increasing (90%) From 2.0m, saturated		D,PID	1.9		<1 ppm	▼	
	3.0	Pit discontinued at 3.0m, limit of backhoe reach							

RIG: 6 tonne backhoe, 90mm bucket with teeth

LOGGED: Karpiel

WATER OBSERVATIONS: Free groundwater observed from 2.2m during test pitting

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED
Initials:
Date:

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TEST PIT LOG

CLIENT: Queensland Rail
PROJECT: PCA, Proposed Redevelopment
LOCATION: Maitland Road and Woodlands Close, Hexham

SURFACE LEVEL: 2.0 AHD
EASTING: 376851
NORTHING: 6366687
DIP/AZIMUTH: 90°/--

PIT No: 142
PROJECT No: 39798.02
DATE: 08 Apr 08
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0.0	FILLING - Generally comprising brown gravelly sand, trace clay (crushed sandstone) and trace gravel sized coal reject, damp		D,PID	0.1		<1 ppm		
	0.3	At 0.15m large concrete piece approximately 0.8m in length by 0.10m thick							
	0.35	FILLING - Generally comprising yellow brown medium grained sand, damp		D,PID	0.5		<1 ppm		
	0.7	FILLING - Generally comprising grey/brown silty clay with some gravel, gravel predominately coal reject, trace siltstone, damp							
	1	FILLING - Generally black gravel with trace silt and sand, gravel predominately coal reject (95%) with some carbonaceous siltstone, saturated		D,PID	1.1		<1 ppm	▼	
	1.45	CLAYEY SILT - Firm dark grey clayey silt, trace rootlets, M >Wp		D,PID,pp	1.5		<1 ppm, 90 kPa		
	1.55	SILTY CLAY - Firm grey mottled orange brown silty clay, M >Wp		pp	1.6		90 kPa		
	1.7	Pit discontinued at 1.7m, limit of investigation							
	2								
	3								
	4								
	5								

RIG: 6 tonne backhoe, 90mm bucket with teeth

LOGGED: Karpiel

WATER OBSERVATIONS: Free groundwater observed from 1.3m during test pitting

REMARKS: Pit side wall collapse from 0.95m

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED
Initials:
Date:

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TEST PIT LOG

CLIENT: Queensland Rail
PROJECT: PCA, Proposed Redevelopment
LOCATION: Maitland Road and Woodlands Close, Hexham

SURFACE LEVEL: 2.5 AHD
EASTING: 376820
NORTHING: 6366722
DIP/AZIMUTH: 90°/--

PIT No: 143
PROJECT No: 39798.02
DATE: 08 Apr 08
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0.0	FILLING - Generally comprising dark brown/grey medium to coarse grained gravelly clayey silty sand, gravel predominately coal reject (30%) with trace sandstone, damp		D,PID	0.0 0.05		<1 ppm		
	0.4								
	0.5	FILLING - Generally comprising yellow brown medium grained gravelly sand, some clay (crushed sandstone), damp		D,PID	0.65		<1 ppm		
	0.9	FILLING - Generally comprising dark brown/grey gravelly medium to coarse grained clayey silty sand, gravel predominately coal reject (30%) with trace sandstone, damp From 0.6m, with trace inclusions of grey silty clay							
1		FILLING - Generally comprising dark grey black medium to coarse grained silty sandy gravel, sand and gravel predominately coal reject (90%) with some carbonaceous siltstone (10%), damp		D,PID	1.3		<1 ppm	▼	1
	1.6	FILLING - Generally comprising dark grey fine to medium grained clayey silty sand, sand predominately coal fines, wet		D,PID	1.8		<1 ppm		
2									2
	2.5	CLAYEY SILT - Stiff grey clayey silt, trace rootlets, M>Wp		D,PID,pp	2.6		<1 ppm,130kPa		
	2.7	Pit discontinued at 2.7m, limit of investigation							
3									3
4									4
5									5

RIG: 6 tonne backhoe, 90mm bucket with teeth

LOGGED: Karpiel

WATER OBSERVATIONS: Free groundwater observed at 1.5m during test pitting

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED	
Initials:	
Date:	

Douglas Partners
Geotechnics · Environment · Groundwater

TEST PIT LOG

CLIENT: Queensland Rail
PROJECT: PCA, Proposed Redevelopment
LOCATION: Maitland Road and Woodlands Close, Hexham

SURFACE LEVEL: 2.6 AHD
EASTING: 376808
NORTHING: 6366730
DIP/AZIMUTH: 90°/--

PIT No: 144
PROJECT No: 39798.02
DATE: 08 Apr 08
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
		FILLING - Generally comprising brown medium grained gravelly silty sand, gravel predominately coal reject, humid		D,PID	0.0		<1 ppm		
	0.15			D,PID	0.2		<1 ppm		
		FILLING - Generally comprising grey medium to coarse grained silty gravelly sand, gravel and sand predominately coal reject, humid From 0.4m, colour change to grey/brown		D,PID	0.6		<1 ppm		
		From 0.8m to 1.0m, some sandstone / siltstone cobbles							
	1.35	FILLING - Generally comprising dark grey black medium to coarse grained sandy gravel, gravel predominately coal reject (85%) with some carbonaceous siltstone cobbles (15%), saturated		D, PID	1.5		<1 ppm	▼	
	2.85								
	2.9	CLAYEY SILT - Stiff dark grey clayey silt, trace rootlets, M >Wp		D, PID,pp	2.9		<1 ppm, 130 kPa		
		Pit discontinued at 2.9m, limit of investigation							

RIG: 6 tonne backhoe, 90mm bucket with teeth

LOGGED: Karpiel

WATER OBSERVATIONS: Free groundwater observed at 1.40m during test pitting

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED
Initials:
Date:

Douglas Partners
Geotechnics · Environment · Groundwater

TEST PIT LOG

CLIENT: Queensland Rail
PROJECT: PCA, Proposed Redevelopment
LOCATION: Maitland Road and Woodlands Close, Hexham

SURFACE LEVEL: 1.9 AHD
EASTING: 376736
NORTHING: 6367020
DIP/AZIMUTH: 90°/--

PIT No: 145
PROJECT No: 39798.02
DATE: 08 Apr 08
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0.15	FILLING - Generally comprising dark brown gravelly sandy silt, gravel predominately coal reject, trace rootlets, damp		D,PID	0.1		<1 ppm		
	0.4	FILLING - Generally comprising brown silty sand, trace gravel sized coal reject, damp							
		FILLING - Generally comprising intermixed light yellow and brown sand with trace gravel (crushed sandstone) and gravelly sized coal reject, humid		D,PID	0.6		<1 ppm		
		From 0.6m, trace bricks and siltstone / sandstone cobbles							
	0.9	FILLING - Generally comprising dark grey medium to coarse grained sandy gravel, trace silt, sand and gravel predominantly coal reject, wet						▼	
				D,PID	1.3		<1 ppm		
	1.6	SILTY CLAY - Firm grey mottled orange brown grey silty clay, trace fine grained sand, M >Wp		D,PID,pp	1.75		<1 ppm,60kPa		
	1.75	Pit discontinued at 1.75m, limit of investigation							

RIG: 6 tonne backhoe, 90mm bucket with teeth

LOGGED: Karpiel

WATER OBSERVATIONS: Free groundwater observed at 1.2m during test pitting

REMARKS: Refusal at 1.55m at southern end of pit on concrete (?)

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED
Initials:
Date:

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TEST PIT LOG

CLIENT: Queensland Rail
PROJECT: PCA, Proposed Redevelopment
LOCATION: Maitland Road and Woodlands Close, Hexham

SURFACE LEVEL: 1.6 AHD
EASTING: 376410
NORTHING: 6367073
DIP/AZIMUTH: 90°/--

PIT No: 146
PROJECT No: 39798.02
DATE: 07 Apr 08
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0.25	FILLING - Generally comprising dark brown / black medium to coarse grained silty sand, trace gravel, sand and gravel predominately coal reject, trace rootlets, occasional large timber rail sleepers to 0.15m, humid		D, PID	0.0		<1 ppm		
	0.5	FILLING - Generally comprising dark brown/black medium coarse grained sandy gravel (coal reject), damp to moist		D, PID	0.4		<1 ppm		
		SILTY CLAY - Stiff, grey mottled orange silty clay, M>Wp		D, PID, pp	0.7		<1 ppm, 110 kPa		
		From 1.9m, firm with trace fine grained sand						▼	
	2.1	Pit discontinued at 2.1m, limit of investigation		D, PID, pp	2.1		<1 ppm, 70kPa		

RIG: 6 tonne backhoe, 90mm bucket with teeth

LOGGED: Karpiel

WATER OBSERVATIONS: Free groundwater observed at 1.95 m during test pitting

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED
Initials:
Date:

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TEST PIT LOG

CLIENT: Queensland Rail
PROJECT: PCA, Proposed Redevelopment
LOCATION: Maitland Road and Woodlands Close, Hexham

SURFACE LEVEL: 1.6 AHD
EASTING: 376440
NORTHING: 6367079
DIP/AZIMUTH: 90°/--

PIT No: 147
PROJECT No: 39798.02
DATE: 07 Apr 08
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0.2	FILLING - Generally comprising fine to medium grained gravelly silty sand gravel and sand predominantly coal reject (70%), trace large timber rail sleepers and scrap metal to 0.15m , humid to damp		D,PID	0.0		<1 ppm		
		FILLING - Generally comprising dark brown black silty sandy gravel (coal reject), damp							
		From 0.8m, saturated		D,PID	0.9		<1 ppm	▼	
	1.4	SILTY CLAY - Firm grey mottled orange silty clay, M>Wp		D,PID,pp	1.5		<1 ppm,80kPa		
	1.6	Pit discontinued at 1.6m, limit of investigation							

RIG: 6 tonne backhoe, 90mm bucket with teeth

LOGGED: Karpiel

WATER OBSERVATIONS: Free groundwater observed at 0.85m during test pitting

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED
Initials:
Date:

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TEST PIT LOG

CLIENT: Queensland Rail
PROJECT: PCA, Proposed Redevelopment
LOCATION: Maitland Road and Woodlands Close, Hexham

SURFACE LEVEL: 1.7 AHD
EASTING: 376566
NORTHING: 6367087
DIP/AZIMUTH: 90°/--

PIT No: 148
PROJECT No: 39798.02
DATE: 07 Apr 08
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0.0	FILLING - Generally comprising dark medium to coarse grained sand (coal reject) trace gravel, humid		D,PID	0.0 0.05		<1 ppm		
	0.25	Trace porcelain fragments to 0.02m							
		FILLING - Generally comprising black medium to course grained gravel (coal reject), trace silt, moist From 0.55m, saturated		D,PID	0.8		<1 ppm	▼	
	1			D,PID	1.0		<1 ppm		1
	1.1	SILTY CLAY - Firm grey mottled orange brown silty clay, trace fine grained sand, M >Wp		D,PID,pp	1.2		<1 ppm,70kPa		
	1.3	Pit discontinued at 1.3m, limit of investigation							
	2								2
	3								3
	4								4
	5								5

RIG: 6 tonne backhoe, 90mm bucket with teeth

LOGGED: Karpiel

WATER OBSERVATIONS: Free groundwater observed at 0.58m during test pitting

REMARKS: Blue rubber pipe at surface near pit

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED
Initials:
Date:

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TEST PIT LOG

CLIENT: Queensland Rail
PROJECT: PCA, Proposed Redevelopment
LOCATION: Maitland Road and Woodlands Close, Hexham

SURFACE LEVEL: 2.0 AHD
EASTING: 376704
NORTHING: 6367120
DIP/AZIMUTH: 90°/--

PIT No: 149
PROJECT No: 39798.02
DATE: 07 Apr 08
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0.1	FILLING - Generally comprising brown medium grained gravelly clayey sand, gravel predominately crushed siltstone and sandstone with some coal reject, damp		D, PID	0.0 0.05		<1 ppm		
	0.2	FILLING - Generally comprising grey gravelly sand, gravel predominately crushed siltstone and sandstone with some coal reject inclusions, humid		D, PID	0.5		<1 ppm		
		FILLING - Generally comprising brown medium grained gravelly clayey sand, gravel predominately crushed siltstone and sandstone with some coal reject, damp							
		From 0.9m, trace timber and brick fragments		D, PID	0.95		<1 ppm		
1	1.0	Pit discontinued at 1.0m, refusal on concrete							

Dynamic Penetrometer Test (blows per mm): 5, 10, 15, 20

RIG: 6 tonne backhoe, 90mm bucket with teeth

LOGGED: Karpiel

WATER OBSERVATIONS: No free groundwater observed during test pitting

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ⧭ Water level

CHECKED
Initials:
Date:

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TEST PIT LOG

CLIENT: Queensland Rail
PROJECT: PCA, Proposed Redevelopment
LOCATION: Maitland Road and Woodlands Close, Hexham

SURFACE LEVEL: 1.7 AHD
EASTING: 376569
NORTHING: 6367114
DIP/AZIMUTH: 90°/--

PIT No: 150
PROJECT No: 39798.02
DATE: 07 Apr 08
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0.0	FILLING - Generally comprising grey gravelly silty sand, silty sand predominately ash, gravel predominately coal reject, dry		D,PID	0.1		<1 ppm		
	0.4	FILLING - Generally comprising intermixed brown clayey sandy gravel (crushed sandstone) and black sandy gravel (coal reject), trace cobbles (coal reject) and scrap metal, damp to moist		D,PID	0.5		<1 ppm		
	1	From 1.1m, predominately gravelly coal reject with trace clay and silt		D,PID	1.0		<1 ppm	▼	
	1.5	SILTY CLAY - Firm grey mottled orange brown silty clay, M>Wp		D,PID,pp	1.6		<1 ppm,90kPa		
	1.8	Pit discontinued at 1.8m, limit of investigation							
	2								
	3								
	4								
	5								

Dynamic Penetrometer Test (blows per mm): 5, 10, 15, 20

RIG: 6 tonne backhoe, 90mm bucket with teeth

LOGGED: Karpiel

WATER OBSERVATIONS: Free groundwater observed at 1.3m during test pitting

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED
Initials:
Date:

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TEST PIT LOG

CLIENT: Queensland Rail
PROJECT: PCA, Proposed Redevelopment
LOCATION: Maitland Road and Woodlands Close, Hexham

SURFACE LEVEL: 1.2 AHD
EASTING: 376228
NORTHING: 6367211
DIP/AZIMUTH: 90°/--

PIT No: 151
PROJECT No: 39798.02
DATE: 07 Apr 08
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0.0	FILLING - Generally comprising grey mottled orange brown gravelly silty clay with some fine grained sand, gravel predominately fine grained sandstone, humid		D,PID	0.0		<1 ppm		
	0.45	FILLING - Generally comprising brown cobbles with some grey silty clay, cobbles predominately rail ballast, trace timber and plastic (PVC), damp		D,PID	0.5		<1 ppm		
	0.65	SILTY CLAY - Stiff grey mottled orange silty clay trace fine grained sand, M>Wp		D,PID,pp	0.9		<1 ppm,140kPa		
	1	From 1.2m, grading to clayey sand							1
	1.4	CLAYEY SAND - Grey mottled orange brown fine to medium grained clayey sand, slightly silty, damp to moist							
		From 1.7m, wet with trace shells							
	2								2
	2.1	Pit discontinued at 2.1m, limit of investigation							
	3								3
	4								4
	5								5

RIG: 6 tonne backhoe, 90mm bucket with teeth

LOGGED: Karpiel

WATER OBSERVATIONS: No free groundwater observed during test pitting

REMARKS: Side wall collapses from 1.7m

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED
Initials:
Date:

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TEST PIT LOG

CLIENT: Queensland Rail
PROJECT: PCA, Proposed Redevelopment
LOCATION: Maitland Road and Woodlands Close, Hexham

SURFACE LEVEL: 1.6 AHD
EASTING: 376223
NORTHING: 6367210
DIP/AZIMUTH: 90°/--

PIT No: 151A
PROJECT No: 39798.02
DATE: 07 Apr 08
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm) 5 10 15 20
		FILLING - Generally comprising light brown medium grained sand, trace silt and rounded gravel, trace fragments of terracotta pipe, moist		D,PID	0.3		<1 ppm		
	0.7	Pit discontinued at 0.7m, limit of investigation							
	1								
	2								
	3								
	4								
	5								

RIG: 6 tonne backhoe, 90mm bucket with teeth

LOGGED: Karpiel

WATER OBSERVATIONS: No free groundwater observed during test pitting

REMARKS: Test pit excavated into stockpile approximately 0.7m high

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ⧭ Water level

CHECKED
Initials:
Date:

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TEST PIT LOG

CLIENT: Queensland Rail
PROJECT: PCA, Proposed Redevelopment
LOCATION: Maitland Road and Woodlands Close, Hexham

SURFACE LEVEL: 1.2 AHD
EASTING: 376156
NORTHING: 6367431
DIP/AZIMUTH: 90°/--

PIT No: 152
PROJECT No: 39798.02
DATE: 07 Apr 08
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0.05	FILLING - Generally comprising dark brown clayey sandy silt with abundant rootlets, damp							
		FILLING - Generally comprising orange brown medium grained clayey sand with some gravel (crushed sandstone), trace rootlets, damp		D,PID	0.3		<1 ppm		
	0.45	FILLING - Generally comprising dark brown gravelly clayey silt, gravel predominately coal reject, trace inclusions of grey silty clay, trace rootlets, damp		D,PID	0.6		<1 ppm		
	0.7	SILTY CLAY - Stiff grey mottled orange brown silty clay, slightly sandy, M>Wp		D,PID,pp	0.9		<1 ppm,160kPa		
	1.3	CLAYEY SAND - Grey mottled orange clayey sand with some silt, moist to wet From 1.7m, saturated						▷	
	2.0	Pit discontinued at 2.0m, limit of investigation							

RIG:

LOGGED: Karpiel

WATER OBSERVATIONS: Seepage at 1.7m during test pitting

REMARKS: Pit side wall collapsing from 1.3m

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ⧗ Water level

CHECKED
Initials:
Date:

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TEST PIT LOG

CLIENT: Queensland Rail
PROJECT: PCA, Proposed Redevelopment
LOCATION: Maitland Road and Woodlands Close, Hexham

SURFACE LEVEL: 1.6 AHD
EASTING: 376155
NORTHING: 6367434
DIP/AZIMUTH: 90°/--

PIT No: 152A
PROJECT No: 39798.02
DATE: 07 Apr 08
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
		FILLING - Generally comprising dark brown clayey silt/silty clay with some sand, trace rootlets, humid		A,PID	0.3		<1 ppm		
	0.6	Pit discontinued at 0.6m, limit of investigation							

RIG: 6 tonne backhoe, 90mm bucket with teeth

LOGGED: Karpiel

WATER OBSERVATIONS: No free groundwater observed during test pitting

REMARKS: Test pit excavated into stockpile approximately 0.6m high

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ⧗ Water level

CHECKED
Initials:
Date:

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TEST PIT LOG

CLIENT: Queensland Rail
PROJECT: PCA, Proposed Redevelopment
LOCATION: Maitland Road and Woodlands Close, Hexham

SURFACE LEVEL: 1.0 AHD
EASTING: 376107
NORTHING: 6367377
DIP/AZIMUTH: 90°/--

PIT No: 153
PROJECT No: 39798.02
DATE: 07 Apr 08
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0.0			P,PID	0.0		<1 ppm		
					0.05				
	0.2	FILLING - Generally comprising dark brown intermixed clayey silt and dark brown/black gravelly sand (coal reject) with abundant rootlets, humid							
		CLAYEY SILT - Stiff dark brown clayey silt, M >Wp		P,PID	0.3		<1 ppm		
	0.45	SILTY CLAY - Stiff, grey mottled orange brown silty clay, with trace fine grained sand, M >Wp							
		From 0.7m, grading to clayey sand		pp	0.7		130 kPa		
	0.9	CLAYEY SAND - Grey mottled orange brown fine to medium grained clayey sand, slightly silty, moist							
	1.4	Pit discontinued at 1.4m, limit of investigation							

Dynamic Penetrometer Test (blows per mm): 5, 10, 15, 20

RIG: 6 tonne backhoe, 90mm bucket with teeth

LOGGED: Karpiel

WATER OBSERVATIONS: No free groundwater observed during test pitting

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ⧩ Water level

CHECKED
Initials:
Date:

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TEST PIT LOG

CLIENT: Queensland Rail
PROJECT: PCA, Proposed Redevelopment
LOCATION: Maitland Road and Woodlands Close, Hexham

SURFACE LEVEL: 1.1 AHD
EASTING: 376610
NORTHING: 6367434
DIP/AZIMUTH: 90°/--

PIT No: 154
PROJECT No: 39798.02
DATE: 09 Apr 08
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
		FILLING - Generally comprising brown gravelly clayey silt with some coarse grained sand sized coal reject, gravel predominantly angular, (rail ballast), abundant rootlets, wet		D,PID	0.05		<1 ppm	▼	
		From 0.2m, grading to trace gravel		D,PID	0.45		<1 ppm		
		at 0.35m, trace plastic inclusion							
	0.7	SILTY CLAY - Dark grey-brown silty clay with abundant rootlets, M>>Wp							
	0.8								
	0.9	SILTY CLAY - Grey mottled orange-brown silty clay, M>Wp		D,PID	0.9		<1 ppm		
		Pit discontinued at 0.9m, limit of investigation							

RIG: Hand tools

LOGGED: Collins/Karpiel

WATER OBSERVATIONS: Free groundwater observed at 0.2m during test pitting

REMARKS: From 0.2m possibly impregnated natural material

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED
Initials:
Date:

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TEST PIT LOG

CLIENT: Queensland Rail
PROJECT: PCA, Proposed Redevelopment
LOCATION: Maitland Road and Woodlands Close, Hexham

SURFACE LEVEL: --
EASTING:
NORTHING:
DIP/AZIMUTH: 90°/--

PIT No: 155
PROJECT No: 39798.02
DATE: 08 Apr 08
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
		FILLING - Generally comprising dark grey-brown gravelly silty clay filling, gravel predominantly grey ash, moist / M>Wp		D, PID	0.1		<1 ppm		
	0.25	FILLING - Generally comprising grey-brown clay with trace gravel sized, coal and charcoal, M>Wp		D, PID	0.3		<1 ppm		
	0.5	CLAY - (firm) Grey-brown clay with some silt, M>Wp		D, PID	0.6		<1 ppm		
	0.75	From 0.7m, light grey-brown, increased silt content							
		Pit discontinued at 0.75m, limit of investigation							

RIG: Hand tools

LOGGED: Collins/Karpiel

WATER OBSERVATIONS: No free groundwater observed during test pitting

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ⧩ Water level

CHECKED
Initials:
Date:

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TEST PIT LOG

CLIENT: Queensland Rail
PROJECT: PCA, Proposed Redevelopment
LOCATION: Maitland Road and Woodlands Close, Hexham

SURFACE LEVEL: 1.5 AHD
EASTING: 376423
NORTHING: 6367806
DIP/AZIMUTH: 90°/--

PIT No: 156
PROJECT No: 39798.02
DATE: 08 Apr 08
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
		FILLING - Generally comprising dark grey-brown silty clay and coarse sized subangular gravel (rail ballast including trace concrete), with some rootlets, moist to wet		D,PID	0.0 0.05		<1 ppm		
		From 0.2m, generally comprising sized subangular gravel with some silt, wet to saturated		D,PID	0.3		<1 ppm		
	0.4	Pit discontinued at 0.4m, refusal							

RIG: Hand tools

LOGGED: Collins/Karpiel

WATER OBSERVATIONS: No free groundwater observed during test pitting

REMARKS: >1m of fill (based on site observations)

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ⧭ Water level

CHECKED
Initials:
Date:

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TEST PIT LOG

CLIENT: Queensland Rail
PROJECT: PCA, Proposed Redevelopment
LOCATION: Maitland Road and Woodlands Close, Hexham

SURFACE LEVEL: 2.1 AHD
EASTING: 376010
NORTHING: 6368316
DIP/AZIMUTH: 90°/--

PIT No: 157
PROJECT No: 39798.02
DATE: 08 Apr 08
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0.35	FILLING - Generally comprising light brown medium grained silty sand with some clay, damp		D, PID	0.2		<1 ppm		
	0.65	FILLING - Generally comprising intermixed dark brown clayey silt/silty clay and light brown medium grained silty sand, damp At 0.4m trace scrap metal		D, PID	0.4		<1 ppm		
	0.85	FILLING - Generally comprising dark brown gravelly silty sand, gravel and sand with some sand sized ash, damp		D, PID	0.7		<1 ppm		
	1	FILLING - Generally comprising light brown medium grained silty sand with some inclusions of light grey silty clay, damp		D, PID	1.0		<1 ppm		
	1.6	CLAYEY SILT - (firm) red brown mottled grey clayey silt, trace fine grained sand and rootlets, M >Wp (possibly fill)		D, PID	1.7		<1 ppm		
	1.8	SILTY CLAY - (firm) grey mottled orange brown silt clay, trace fine grained sand, M >Wp							
	2								
	2.3	Pit discontinued at 2.3m, limit of investigation							
	3								
	4								
	5								

Dynamic Penetrometer Test (blows per mm): 5, 10, 15, 20

RIG: 6 tonne backhoe, 90mm bucket with teeth

LOGGED: Karpiel

WATER OBSERVATIONS: No free groundwater observed during test pitting

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ⧩ Water level

CHECKED
Initials:
Date:

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TEST PIT LOG

CLIENT: Queensland Rail
PROJECT: PCA, Proposed Redevelopment
LOCATION: Maitland Road and Woodlands Close, Hexham

SURFACE LEVEL: 0.8 AHD
EASTING: 375701
NORTHING: 6368460
DIP/AZIMUTH: 90°/--

PIT No: 158
PROJECT No: 39798.02
DATE: 08 Apr 08
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0.07	FILLING - Generally comprising dark brown clayey silt filling with abundant rootlets, moist		D,PID	0.0		<1 ppm		
				D,PID	0.2		<1 ppm		
		FILLING - Generally comprising light brown silty gravelly fine to medium grained sand with some clay, gravel predominantly subrounded (crushed sandstone / conglomerate), well compacted, damp							
	0.5	Pit discontinued at 0.5m, refusal							
	1								
	2								
	3								
	4								
	5								

Dynamic Penetrometer Test (blows per mm): 5, 10, 15, 20

RIG: Hand tools

LOGGED: Collins/Karpiel

WATER OBSERVATIONS: No free groundwater observed during test pitting

REMARKS: Approximately 1 m of fill based on site observations

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ⧩ Water level

CHECKED
Initials:
Date:

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TEST PIT LOG

CLIENT: Queensland Rail
PROJECT: PCA, Proposed Redevelopment
LOCATION: Maitland Road and Woodlands Close, Hexham

SURFACE LEVEL: 1.2 AHD
EASTING: 375534
NORTHING: 6368667
DIP/AZIMUTH: 90°/--

PIT No: 159
PROJECT No: 39798.02
DATE: 07 Apr 08
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0.05	FILLING - Generally comprising brown fine grained silty sand with abundant rootlets, humid to damp		D,PID	0.0		<1 ppm		
		FILLING - Generally comprising gravel, with trace sand, gravel predominately angular claystone / siltstone fragments, humid		D,PID	0.5		<1 ppm		
	0.8	CLAYEY SILT - Firm dark brown clayey silt, M >Wp							
	1			D,PID,pp	1.0		<1 ppm, 60kPa		
	1.1	SILTY CLAY - Stiff grey mottled orange brown silty clay with trace fine grained sand, M >Wp							
		From 1.5m, with some fine grained sand, M >Wp						▼	
	2.2	Pit discontinued at 2.2m, limit of investigation							

RIG: 6 tonne backhoe, 90mm bucket with teeth

LOGGED: Karpiel

WATER OBSERVATIONS: Free groundwater observed at 2.0m during test pitting

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED
Initials:
Date:

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TEST PIT LOG

CLIENT: Queensland Rail
PROJECT: PCA, Proposed Redevelopment
LOCATION: Maitland Road and Woodlands Close, Hexham

SURFACE LEVEL: 8.7 AHD
EASTING: 376660
NORTHING: 6366806
DIP/AZIMUTH: 90°/--

PIT No: 160
PROJECT No: 39798.02
DATE: 03 Apr 08
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
		FILLING - Generally comprising grey brown gravelly clay filling generally comprising of clay, gravel and cobbles including trace coal, M~Wp		D, PID	0.1		<1 ppm		
				D, PID	0.6		<1 ppm		
	0.7	FILLING - Generally comprising dark grey coal reject generally comprising of clayey gravel to cobble size coal and carbonaceous siltstone, moist							
	1								1
	1.5	FILLING - Generally comprising dark grey to black clayey silt filling generally comprising of intermixed silty clay and silt to sand sized coal fines, moist		D, PID	1.6		<1 ppm		
	2								2
				D, PID	2.8		<1 ppm		
	3								3
	4	From 4.0m, moist to wet		D, PID	4.0		<1 ppm		4
	5								5
	5.5	Pit discontinued at 5.5m, limit of excavator reach							

RIG: CASE CX 130 Excavator, 600mm bucket with teeth

LOGGED: Collins

WATER OBSERVATIONS: No free groundwater observed during test pitting

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ⧩ Water level

CHECKED
Initials:
Date:

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TEST PIT LOG

CLIENT: Queensland Rail
PROJECT: PCA, Proposed Redevelopment
LOCATION: Maitland Road and Woodlands Close, Hexham

SURFACE LEVEL: 3.8 AHD
EASTING: 376914
NORTHING: 6366148
DIP/AZIMUTH: 90°/--

PIT No: 161
PROJECT No: 39798.02
DATE: 03 Apr 08
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
		FILLING - Generally comprising black fine to medium grained gravelly silty sand (coal fines), humid		D	0.1				
	0.25	Pit discontinued at 0.25m, refusal on concrete slab (dipping to north)							

RIG: 6 tonne backhoe, 90mm bucket with teeth

LOGGED: Karpiel

WATER OBSERVATIONS: No free groundwater observed during test pitting

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ⧭ Water level

CHECKED
Initials:
Date:

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TEST PIT LOG

CLIENT: Queensland Rail
PROJECT: PCA, Proposed Redevelopment
LOCATION: Maitland Road and Woodlands Close, Hexham

SURFACE LEVEL: 1.7 AHD
EASTING: 376814
NORTHING: 6366899
DIP/AZIMUTH: 90°/--

PIT No: 162
PROJECT No: 39798.02
DATE: 08 Apr 08
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0.2	FILLING - Generally comprising grey and orange gravel and cobbles, rail ballast, humid From 0.1m, saturated						▷	
	0.7	FILLING - Generally comprising dark brown clayey silt with trace sand and gravel, gravel predominately rail ballast and coal reject, saturated		D,PID	0.5		<1 ppm		
	1	FILLING - Generally comprising grey gravelly clayey sand with some silt, gravel generally comprising coal reject and carbonaceous siltstone, wet		D,PID	1.0		<1 ppm		1
	1.2	FILLING - Generally comprising black sandy gravel trace silt, sandy gravel predominately coal reject, saturated		D,PID	1.3		<1 ppm		
	1.5	SILTY CLAY - Stiff, grey mottled orange brown silty clay, M >Wp		D,PID,pp	1.55		<1 ppm,130kPa		
	1.65	Pit discontinued at 1.65m, limit of investigation							
	2								2
	3								3
	4								4
	5								5

RIG: 6 tonne backhoe, 90mm bucket with teeth

LOGGED: Karpiel

WATER OBSERVATIONS: Seepage at 0.1m during test pitting

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ⧗ Water level

CHECKED
Initials:
Date:

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TEST PIT LOG

CLIENT: Queensland Rail
PROJECT: PCA, Proposed Redevelopment
LOCATION: Maitland Road and Woodlands Close, Hexham

SURFACE LEVEL: 1.8 AHD
EASTING: 376819
NORTHING: 6366837
DIP/AZIMUTH: 90°/--

PIT No: 163
PROJECT No: 39798.02
DATE: 08 Apr 08
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0.0	FILLING - Generally comprising dark brown gravelly silty clay with some fine sand, gravel predominately rail ballast, trace coal reject and ash, humid		D,PID	0.1		<1 ppm		
	0.5	FILLING - Generally comprising brown medium grained gravelly clayey sand (crushed sandstone) trace gravel and sand sized coal reject, humid From 0.85m, inclusions of sandstone boulders up to 0.6m in diameter and some gravel and cobble sized coal reject		D,PID	0.7		<1 ppm	▷	
	1.25	FILLING - Generally comprising grey mottled orange and red brown sand and silty clay with trace medium grained sand and gravel coal reject, damp		D,PID	1.3		<1 ppm		
	1.5	CLAYEY SILT - Firm dark brown clayey silt, M >Wp		pp	1.6		70 kPa		
	1.65	SILTY CLAY - Stiff grey mottled orange brown silty clay, M >Wp		pp	1.7		120 kPa		
	1.8	From 1.7m, with some fine grained sand CLAYEY SAND - Grey mottled orange brown clayey sand, saturated		D,PID	1.9		<1 ppm	▼	
	2.45	Pit discontinued at 2.45m, limit of investigation							

RIG: 6 tonne backhoe, 90mm bucket with teeth

LOGGED: Karpiel

WATER OBSERVATIONS: Seepage at 1.1m, free groundwater observed at 2.3m during test pitting

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED	
Initials:	
Date:	

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TEST PIT LOG

CLIENT: Queensland Rail
PROJECT: PCA, Proposed Redevelopment
LOCATION: Maitland Road and Woodlands Close, Hexham

SURFACE LEVEL: 1.6 AHD
EASTING: 376841
NORTHING: 6366820
DIP/AZIMUTH: 90°/--

PIT No: 164
PROJECT No: 39798.02
DATE: 08 Apr 08
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0.0	FILLING - Generally comprising brown gravelly sandy silt, gravel predominately rail ballast, trace coal reject, and abundant rootlets, wet		D,PID	0.0		<1 ppm		
	0.35								
	0.45	FILLING - Generally comprising grey medium to coarse grained silty sandy gravel, including some ash, damp		D,PID	0.4		<1 ppm		
	0.6	FILLING - Generally dark grey/black clayey silty sandy gravel, gravel predominately coal reject (90%) and trace carbonaceous siltstone, damp							
1		FILLING - Generally comprising grey mottled red silty clay trace gravel (coal reject) and organic material, M>Wp From 0.8m, minor dark grey straining (possibly organics)		D,PID	1.0		<1 ppm	▷	1
	1.45	CLAYEY SILT - (firm) dark grey clayey silt, M>Wp		D,PID,pp	1.5		<1 ppm,70kPa		
	1.6	SILTY CLAY - (stiff) grey mottled orange silty clay, M>Wp							
	1.8	CLAYEY SAND - Grey mottled orange brown clayey fine grained sand, with some silt, saturated							
2									2
	2.7	Pit discontinued at 2.7m, limit of investigation							
3									3
4									4
5									5

RIG: 6 tonne backhoe, 90mm bucket with teeth

LOGGED: Karpiel

WATER OBSERVATIONS: Seepage at 1.3m during test pitting

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ⧗ Water level

CHECKED
Initials:
Date:

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TEST PIT LOG

CLIENT: Queensland Rail
PROJECT: PCA, Proposed Redevelopment
LOCATION: Maitland Road and Woodlands Close, Hexham

SURFACE LEVEL: --
EASTING:
NORTHING:
DIP/AZIMUTH: 90°/--

PIT No: 165
PROJECT No: 39798.02
DATE: 09 Apr 08
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0.01	FILLING - Generally comprising brown fine grained gravelly silty sand, minor grey hydrocarbon staining, humid		D,PID	0.0		<1 ppm		
	0.15			D,PID	0.02		<1 ppm		
	0.25	FILLING - Generally comprising brown medium to coarse grained sandy gravel, (crushed sandstone), slight hydrocarbon odour, damp From 0.12m, wet		D,PID	0.1		<1 ppm		
		FILLING - Generally comprising intermixed grey silty clay and brown clayey silt, trace gravel, damp			0.2				
		Pit discontinued at 0.25m, limit of investigation							
	1								
	2								
	3								
	4								
	5								

Dynamic Penetrometer Test (blows per mm): 5, 10, 15, 20

RIG: Hand tools
LOGGED: Collins/Karpiel

WATER OBSERVATIONS: No free groundwater observed during test pitting

REMARKS: Within Dairy Farmers shed, adjacent to above ground diesel tank fitted with concrete bund

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ⧗ Water level

CHECKED
Initials:
Date:

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TEST PIT LOG

CLIENT: Queensland Rail
PROJECT: PCA, Proposed Redevelopment
LOCATION: Maitland Road and Woodlands Close, Hexham

SURFACE LEVEL: 1.9 AHD
EASTING: 376893
NORTHING: 6366687
DIP/AZIMUTH: 90°/--

PIT No: 166
PROJECT No: 39798.02
DATE: 09 Apr 08
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0.2	FILLING - Generally comprising light brown silty gravelly medium grained sand with some clay, gravel predominantly subrounded, abundant organics in upper 50mm, moist to wet		D,PID	0.0 0.02		<1 ppm		
		Pit discontinued at 0.2m, limit of investigation							

RIG: Hand tools

LOGGED: Collins/Karpiel

WATER OBSERVATIONS: No free groundwater observed during test pitting

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ⧭ Water level

CHECKED
Initials:
Date:

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TEST PIT LOG

CLIENT: Queensland Rail
PROJECT: PCA, Proposed Redevelopment
LOCATION: Maitland Road and Woodlands Close, Hexham

SURFACE LEVEL: 1.8 AHD
EASTING: 376919
NORTHING: 6366613
DIP/AZIMUTH: 90°/--

PIT No: 167
PROJECT No: 39798.02
DATE: 09 Apr 08
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0.2	FILLING - Generally comprising light brown silty gravelly medium grained sand with some clay, gravel predominantly subrounded, abundant organics in upper 50mm, moist to wet		D,PID	0.0 0.02		<1 ppm		
		Pit discontinued at 0.2m, limit of investigation							

RIG: Hand tools

LOGGED: Collins/Karpiel

WATER OBSERVATIONS: No free groundwater observed during test pitting

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ⧭ Water level

CHECKED
Initials:
Date:

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TEST PIT LOG

CLIENT: Queensland Rail
PROJECT: PCA, Proposed Redevelopment
LOCATION: Maitland Road and Woodlands Close, Hexham

SURFACE LEVEL: 1.9 AHD
EASTING: 376948
NORTHING: 6366536
DIP/AZIMUTH: 90°/--

PIT No: 168
PROJECT No: 39798.02
DATE: 09 Apr 08
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0.03	FILLING - Generally comprising brown silty fine to medium grained sand with abundant organics, moist to wet		D,PID	0.0 0.02		<1 ppm		
	0.2	FILLING - Generally comprising light brown silty gravelly medium grained sand with some clay, gravel predominantly subrounded (roadbase), abundant organics in upper 50mm (some rootlets), moist to wet							
		Pit discontinued at 0.2m, limit of investigation							

RIG: Hand tools

LOGGED: Collins/Karpiel

WATER OBSERVATIONS: No free groundwater observed during test pitting

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ⧩ Water level

CHECKED
Initials:
Date:

Douglas Partners
Geotechnics · Environment · Groundwater

TEST PIT LOG

CLIENT: Queensland Rail
PROJECT: PCA, Proposed Redevelopment
LOCATION: Maitland Road and Woodlands Close, Hexham

SURFACE LEVEL: --
EASTING:
NORTHING:
DIP/AZIMUTH: 90°/--

PIT No: 169
PROJECT No: 39798.02
DATE: 09 Apr 08
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0.1	FILLING - Generally comprising brown silty sandy fine to coarse sized gravel including rail ballast and trace coal reject with abundant organics, moist		D,PID	0.0		<1 ppm		
	0.25			D,PID	0.02		<1 ppm		
		FILLING - Generally comprising light brown silty gravelly medium grained sand with some clay, gravel predominantly subrounded (roadbase), abundant organics in upper 50mm (some rootlets), moist to wet			0.15				
		Pit discontinued at 0.25m, limit of investigation							

Dynamic Penetrometer Test (blows per mm): 5, 10, 15, 20

RIG: Hand tools

LOGGED: Collins/Karpiel

WATER OBSERVATIONS: No free groundwater observed during test pitting

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED
Initials:
Date:

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BOREHOLE LOG

CLIENT: Queensland Rail
PROJECT: Proposed Maintenance Facility
LOCATION: Off Woodlands Close, Hexham

SURFACE LEVEL: 1.53 AHD
EASTING: 364313
NORTHING: 1364847
DIP/AZIMUTH: 90°/--

BORE No: TP14
PROJECT No: 39798
DATE: 06 Aug 07
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per 150mm)
	0.0	FILLING: Dark grey/black gravelly sand (coal reject) some silt, damp		A,PID	0.1		< 1 ppm		
				B,PID			< 1 ppm		
	0.4	FILLING: Orange, fine to medium grained gravelly fine to coarse grained sand (roadbase), humid			0.5				
	0.6	FILLING: Dark grey/brown, fine gravelly clay, M>Wp		A, PID	0.8		< 1 ppm		
	1.3	SILTY CLAY: Soft to firm, grey silty clay, M>Wp		A	1.3				
					1.5				
		From 1.7m depth, sandy clay		S			1,1,3 N = 4		
	2.0	SILTY SAND: Very soft, grey silty fine grained sand, saturated		pp	1.95		120-150kPa		
				A	2.4				
		From 2.9m depth, sandy silt, some shells		A	2.9				
					3.0				
				S			0,0,1 N = 1 under hammer 300mm		
					3.45				
					4.0				
				S			0,0,1 N = 1 under hammer 300mm		
					4.45				
	4.95	Bore discontinued at 4.95m, limit of investigation							

RIG: 4WD Mounted Drill Rig **DRILLER:** Atkins (Foody) **LOGGED:** Rice **CASING:** Uncased

TYPE OF BORING: Solid flight auger

WATER OBSERVATIONS: Free groundwater observed at 1.1m

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☒ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED
Initials:
Date:

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BOREHOLE LOG

CLIENT: Queensland Rail
PROJECT: Proposed Maintenance Facility
LOCATION: Off Woodlands Close, Hexham

SURFACE LEVEL: 2.21 AHD
EASTING: 364027
NORTHING: 1365593
DIP/AZIMUTH: 90°/--

BORE No: TP18
PROJECT No: 39798
DATE: 06 Aug 07
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per 150mm)
2	0.0	FILLING: Dark grey/black, fine to medium gravelly fine to coarse grained (coal reject), some silt, humid							
				B A,PID	0.5		<1ppm		
1	1.0			A,PID	1.0		<1ppm		1
	1.5				1.5				
				S			3,4,3 N = 7		
	1.95				1.95				
0	2							▼	2
				A.PID	2.5		<1 ppm		
		Some cobbles from 2.6m depth							
	2.8	SILTY CLAY: Stiff, grey silty clay, M>Wp							
-1	3			pp	3.0		130-150kPa		3
							2,2,2 N = 4		
		From 3.3m depth, sandy clay, firm							
				pp	3.45		70-90kPa		
	4								4
-2	4.1	SANDY SILT: Very soft to soft, fine grained sandy silt, saturated							
					4.5				
				S			0,0,1 N = 1		
	4.95				4.95				
	5	Bore discontinued at 4.95m, limit of investigation							5

RIG: 4WD Mounted Drill Rig **DRILLER:** Atkins (Foody) **LOGGED:** Rice **CASING:** Uncased

TYPE OF BORING: Solid flight auger

WATER OBSERVATIONS: Free groundwater observed at 2.2m

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☒ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED
Initials:
Date:

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BOREHOLE LOG

CLIENT: Queensland Rail
PROJECT: Proposed Maintenance Facility
LOCATION: Off Woodlands Close, Hexham

SURFACE LEVEL: 3.05 AHD
EASTING: 364053
NORTHING: 1365366
DIP/AZIMUTH: 90°/--

BORE No: TP28
PROJECT No: 39798
DATE: 06 Aug 07
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per 150mm)
3		FILLING: Dark grey/black, fine to medium gravelly fine to coarse grained sand (coal reject), humid		A,PID	0.1		<1ppm		
	0.3	FILLING: Orange, fine gravelly, fine to coarse sand (roadbase)							
	0.5	FILLING: Dark grey, fine to medium grained sand, some site, moist							
2	1			A,PID	1.0		<1ppm		1
	1.3	FILLING: Grey/brown, fine to medium gravelly clay, M>Wp							
				A,PID	1.5		<1ppm	▼	
				S			7,7,9 N = 16		
1	2				1.95				2
				A,PID	2.5		<1ppm		
	2.7	SILTY CLAY: Firm to stiff, grey silty clay, M>Wp							
0	3				3.0				3
				S			3,7/100,ref refusal bouncing on backfill		
					3.25				
				pp	3.3		120-140kPa		
	3.8	SANDY SILT: Very soft to soft grey, fine grained sandy silt, saturated							
-1	4								4
					4.5				
				S					
-2	4.95				4.95				
	5	Bore discontinued at 4.95m, limit of investigation							5

RIG: 4WD Mounted Drill Rig **DRILLER:** Atkins (Foody) **LOGGED:** Rice **CASING:** Uncased

TYPE OF BORING: Solid flight auger

WATER OBSERVATIONS: Free groundwater observed at 1.5m

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☒ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED	
Initials:	
Date:	

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BOREHOLE LOG

CLIENT: Queensland Rail
PROJECT: Proposed Maintenance Facility
LOCATION: Off Woodlands Close, Hexham

SURFACE LEVEL: 3.76 AHD
EASTING: 363920
NORTHING: 1365716
DIP/AZIMUTH: 90°/--

BORE No: TP29
PROJECT No: 39798
DATE: 06 Aug 07
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per 150mm)
		FILLING: Brown silty fine to coarse sand with some low to medium dark grey/black gravelly sand (coal reject), humid		A,PID	0.4		<1ppm		
	0.8	FILLING: Dark grey/black, fine to medium gravelly fine to coarse sand (coal reject), moist		A,PID	0.9		<1ppm		
				A,PID	1.4		<1ppm		
					1.5				
				S			2,2,3 N = 5		
					1.95				
				A,PID	2.4		<1ppm	▼	
				A,PID	2.9		<1ppm		
					3.0				
				S			1,1,2 N = 3		
					3.45				
	4.2	SILTY CLAY: Firm, grey silty clay, M>Wp							
		From 4.5m depth, firm/stiff		pp	4.5		110-140kPa		
				S			1,2,3 N = 5		
	4.95	From 4.9m depth, firm		pp	4.9		70-90kPa		
		Bore discontinued at 4.95m, limit of investigation			4.95				

RIG: 4WD Mounted Drill Rig **DRILLER:** Atkins (Foody) **LOGGED:** Rice **CASING:** Uncased

TYPE OF BORING: Solid flight auger

WATER OBSERVATIONS: Free groundwater observed at 2.3m

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☒ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED
Initials:
Date:

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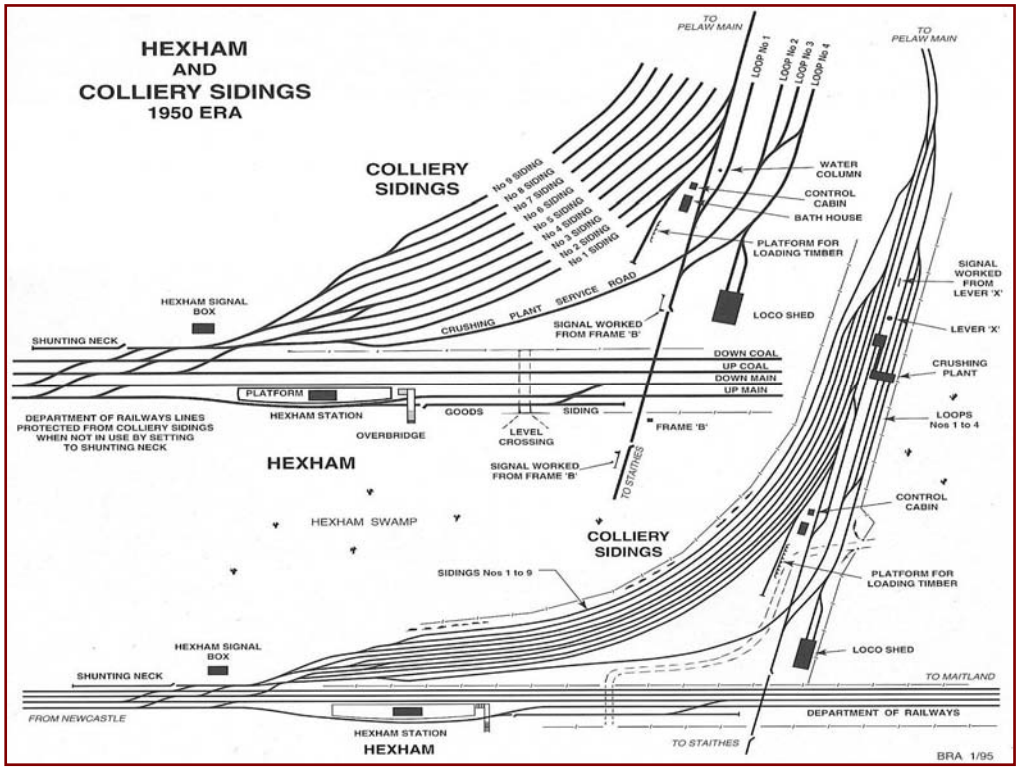
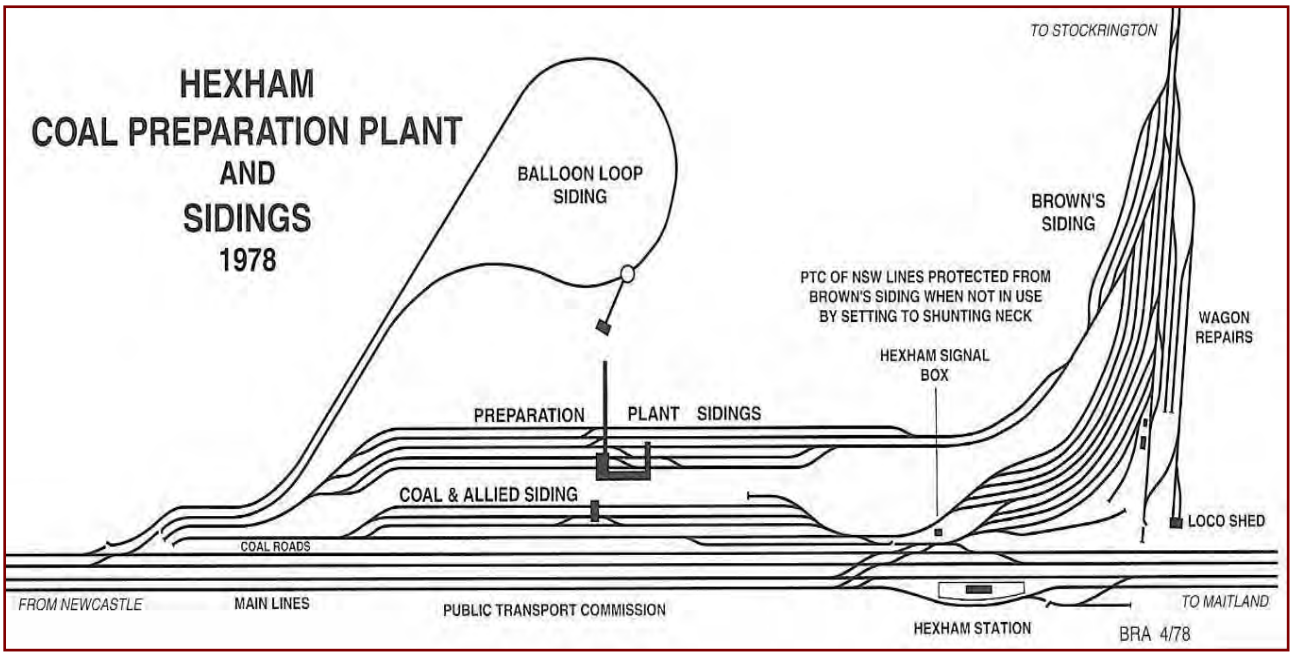
Appendix B

Historical Schematic Site Plans
Historical Site Photographs
Historical Aerial Photographs



Schematic Site Plan – Hexham and Colliery Sidings 1950 Era



Schematic Site Plan – Hexham Coal Preparation Plant and Sidings 1978

Historical Schematic Site Plans Referenced from Coal, railways and Mines, The Story of the Railways and Colleries of J & A Brown by Brian Robert Andrews, Iron Horse Press, 2004, 2nd edition 2007 (Ref 13).	**PROJECT** 39798.06	Douglas Partners Geotechnics · Environment · Groundwater

Photo 1 – Hexham Balloon Rail Loop, Loading Bin and conveyor to Left (30 March 1988)

Photo 2 - Hexham Coal Preparation Plant with conveyors (Mid 1980's)

Historical Schematic Site Plans Referenced from Coal, railways and Mines, The Story of the Railways and Colleries of J & A Brown by Brian Robert Andrews, Iron Horse Press, 2004, 2nd edition 2007 (Ref 13).	**PROJECT** 39798.06	Douglas Partners Geotechnics · Environment · Groundwater

Photo 3 – 1944 Run 26 1798

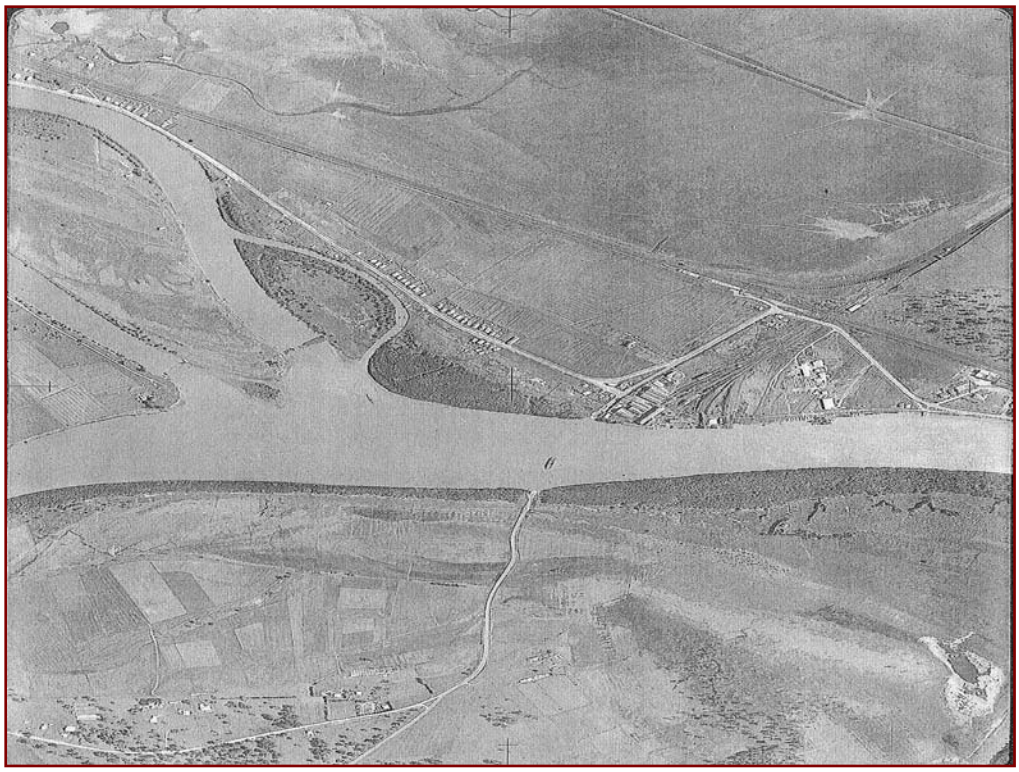


Photo 4 – 1944 Run 26 1799

Photo 5 – 1954 NSW 252 - 5069

Photo 6 – 1954 NSW 252 - 5089

Photo 7 – 1954 NSW 252 - 5089 Blow-up

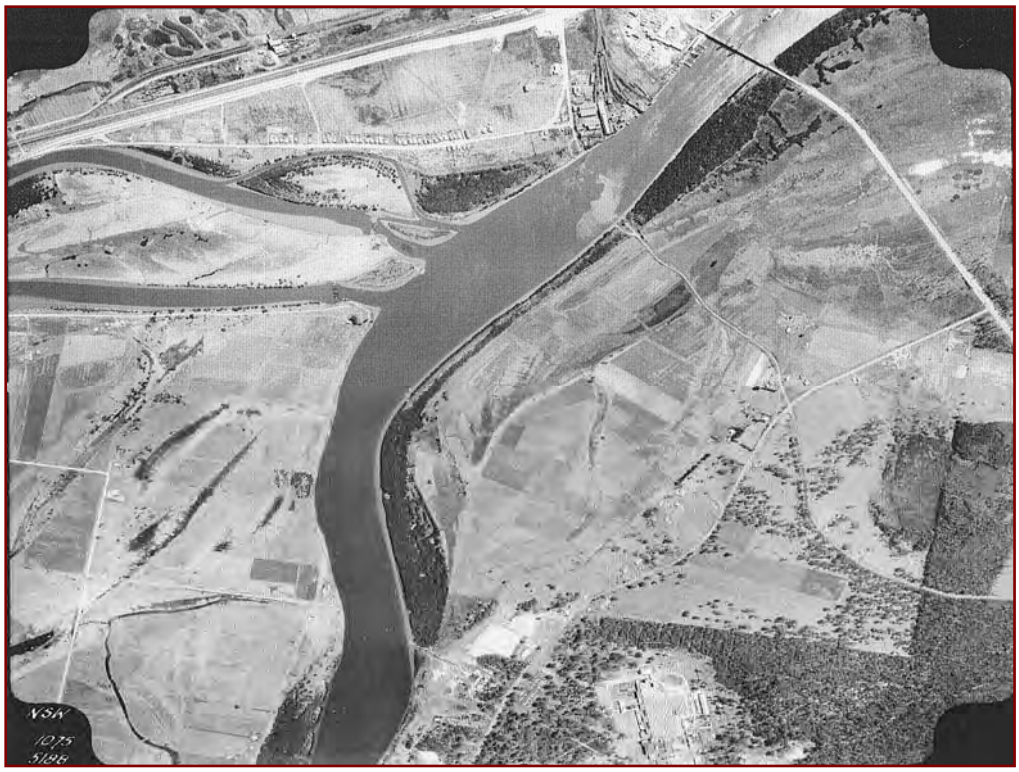


Photo 8 – 1961 NSW 1075 - 5188

Photo 9 – 1961 NSW 1075 - 5230

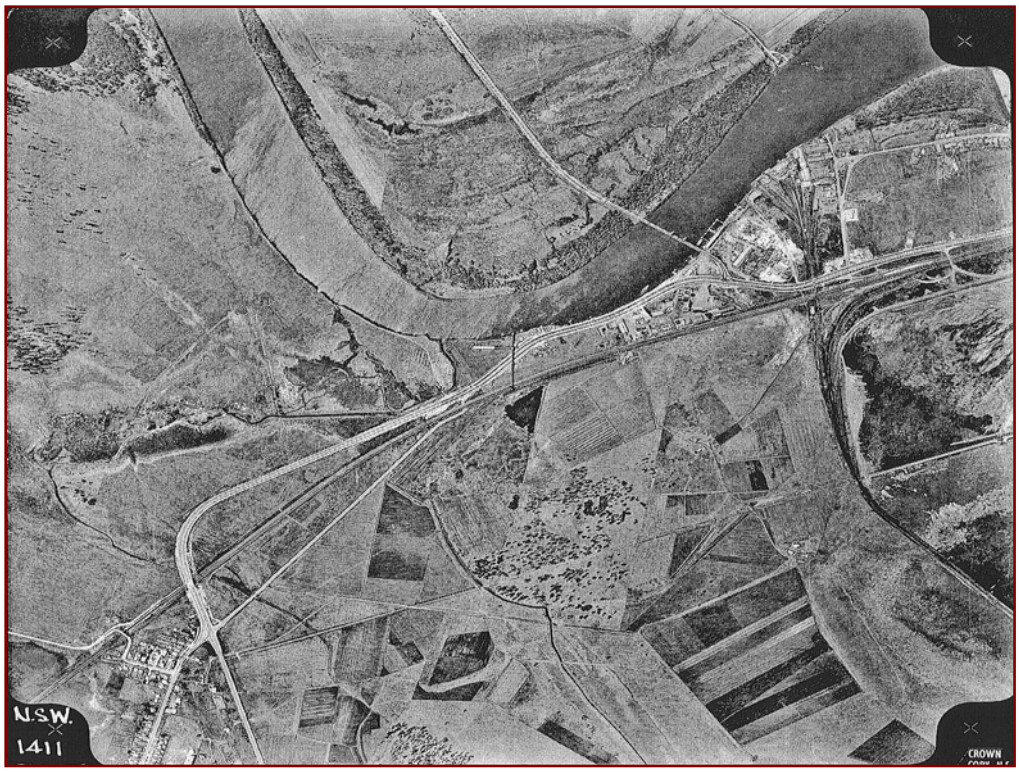


Photo 10 – 1965 NSW 1411 - 5017

Photo 11 – 1965 NSW 1411 - 5019

Photo 12 – 1966 NSW 1464 - 5166

Photo 13 – 1966 NSW 1464 - 5191

Photo 14 – 1971 NSW 1981 - 5058

Photo 15 – 1974 NSW 2266 - 139

Photo 16 – 1974 NSW 2266 - 139 Blow-up

Photo 17 – 1986 U6365 – 7 (Orthophoto)

Photo 18 – 1990 NSW 3710 (M1867)

Photo 19 – 1990 NSW 3710 (M1867) – Blow-up

Photo 20 – 1992 NSW 4112

Photo 21 – 1990 NSW 3710 (M1867) Blow-up

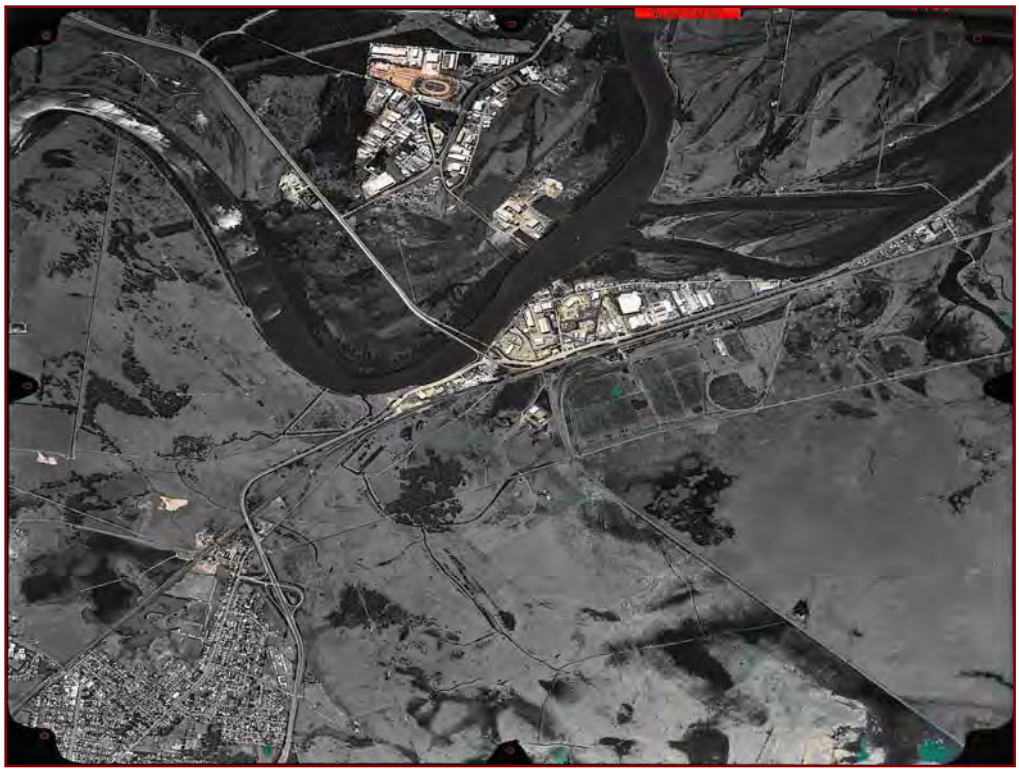


Photo 22 – 2004 NSW 4825 (M2448)

Photo 23 – 2004 NSW 4825 (M2448) – Blow-up