Site	Havelock Street Darfield	**Sample Type**	SOIL
Sample ID:	TP1	**Job:**	EPCE/D2737
Other ID:	0.15m	**Sample No:**	793629
Your Ref:	GMS/KE	**Your Order:**	28489
Received:	03/02/2006		
Description	Dark brown loam with some roots and occasional stones		

Method	Determination	Result	Units	Date of analysis
30/30C	M **Arsenic (Total)**	**14**	mg/kg	08/02/2006
30	M **Cadmium (Total)**	**0.69**	mg/kg	08/02/2006
30	M **Chromium (Total)**	**17**	mg/kg	08/02/2006
30	M **Copper (Total)**	**64**	mg/kg	08/02/2006
30	M **Lead (Total)**	**100**	mg/kg	08/02/2006
30C	M **Mercury (Total)**	**0.38**	mg/kg	08/02/2006
30	M **Nickel (Total)**	**31**	mg/kg	08/02/2006
30C	M **Selenium (Total)**	**0.34**	mg/kg	08/02/2006
30	M **Zinc (Total)**	**160**	mg/kg	08/02/2006
45	M **Sulphate (Total) as SO4**	**0.04**	%	08/02/2006
46	M **Sulphate as SO4 (2:1 Water**	**< 0.06**	g/l	09/02/2006
39	M **pH**	**7.7**	pH units	07/02/2006
	M **>> PAH SUITE <<**	.		03/02/2006
307	M **naphthalene**	**1.6**	mg/kg	08/02/2006
307	M **acenaphthylene**	**< 0.50**	mg/kg	08/02/2006
307	M **acenaphthene**	**< 0.50**	mg/kg	08/02/2006
307	M **fluorene**	**< 0.50**	mg/kg	08/02/2006
307	M **phenanthrene**	**1.9**	mg/kg	08/02/2006
307	M **anthracene**	**< 0.50**	mg/kg	08/02/2006
307	M **fluoranthene**	**2.0**	mg/kg	08/02/2006
307	M **pyrene**	**1.7**	mg/kg	08/02/2006
307	M **benzo(a)anthracene**	**0.64**	mg/kg	08/02/2006
307	M **chrysene**	**1.0**	mg/kg	08/02/2006
307	M **benzo(b)fluoranthene**	**< 0.50**	mg/kg	08/02/2006
307	M **benzo(k)fluoranthene**	**< 0.50**	mg/kg	08/02/2006
307	M **benzo(a)pyrene**	**0.90**	mg/kg	08/02/2006
307	M **dibenzo(ah)anthracene**	**< 0.50**	mg/kg	08/02/2006
307	M **benzo(ghi)perylene**	**0.64**	mg/kg	08/02/2006
307	M **indeno(123cd)pyrene**	**0.53**	mg/kg	08/02/2006
307	M **PAH (Total)**	**13**	mg/kg	08/02/2006
Moisture	**Moisture***	**19**	%	07/02/2006
Stones	**Stones %***	**1.7**	%	07/02/2006

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Site	Havelock Street Darfield	**Sample Type**	SOIL
Sample ID:	TP2	**Job:**	EPCE/D2737
Other ID:	0.30m	**Sample No:**	793630
Your Ref:	GMS/KE	**Your Order:**	28489
Received:	03/02/2006		
Description	Dark brown loam with some stones		

Method	Determination	Result	Units	Date of analysis
30/30C	M **Arsenic (Total)**	**9.9**	mg/kg	08/02/2006
30	M **Cadmium (Total)**	**< 0.50**	mg/kg	08/02/2006
30	M **Chromium (Total)**	**15**	mg/kg	08/02/2006
30	M **Copper (Total)**	**18**	mg/kg	08/02/2006
30	M **Lead (Total)**	**24**	mg/kg	08/02/2006
30C	M **Mercury (Total)**	**< 0.20**	mg/kg	08/02/2006
30	M **Nickel (Total)**	**28**	mg/kg	08/02/2006
30C	M **Selenium (Total)**	**< 0.30**	mg/kg	08/02/2006
30	M **Zinc (Total)**	**70**	mg/kg	08/02/2006
45	M **Sulphate (Total) as SO4**	**< 0.02**	%	08/02/2006
46	M **Sulphate as SO4 (2:1 Water**	**< 0.06**	g/l	09/02/2006
39	M **pH**	**8.1**	pH units	07/02/2006
	M **>> PAH SUITE <<**	**.**		03/02/2006
307	M **naphthalene**	**< 0.50**	mg/kg	08/02/2006
307	M **acenaphthylene**	**< 0.50**	mg/kg	08/02/2006
307	M **acenaphthene**	**< 0.50**	mg/kg	08/02/2006
307	M **fluorene**	**< 0.50**	mg/kg	08/02/2006
307	M **phenanthrene**	**< 0.50**	mg/kg	08/02/2006
307	M **anthracene**	**< 0.50**	mg/kg	08/02/2006
307	M **fluoranthene**	**< 0.50**	mg/kg	08/02/2006
307	M **pyrene**	**< 0.50**	mg/kg	08/02/2006
307	M **benzo(a)anthracene**	**< 0.50**	mg/kg	08/02/2006
307	M **chrysene**	**< 0.50**	mg/kg	08/02/2006
307	M **benzo(b)fluoranthene**	**< 0.50**	mg/kg	08/02/2006
307	M **benzo(k)fluoranthene**	**< 0.50**	mg/kg	08/02/2006
307	M **benzo(a)pyrene**	**< 0.50**	mg/kg	08/02/2006
307	M **dibenzo(ah)anthracene**	**< 0.50**	mg/kg	08/02/2006
307	M **benzo(ghi)perylene**	**< 0.50**	mg/kg	08/02/2006
307	M **indeno(123cd)pyrene**	**< 0.50**	mg/kg	08/02/2006
307	M **PAH (Total)**	**< 2**	mg/kg	08/02/2006
Moisture	**Moisture***	**11**	%	07/02/2006
Stones	**Stones %***	**42**	%	07/02/2006

Site	Havelock Street Darfield	**Sample Type**	SOIL
Sample ID:	TP2	**Job:**	EPCE/D2737
Other ID:	0.60m	**Sample No:**	793631
Your Ref:	GMS/KE	**Your Order:**	28489
Received:	03/02/2006		
Description	Dark brown loam with occasional stones		

Method	Determination	Result	Units	Date of analysis
30/30C	M **Arsenic (Total)**	**13**	mg/kg	08/02/2006
30	M **Cadmium (Total)**	**0.73**	mg/kg	08/02/2006
30	M **Chromium (Total)**	**17**	mg/kg	08/02/2006
30	M **Copper (Total)**	**49**	mg/kg	08/02/2006
30	M **Lead (Total)**	**87**	mg/kg	08/02/2006
30C	M **Mercury (Total)**	**0.22**	mg/kg	08/02/2006
30	M **Nickel (Total)**	**26**	mg/kg	08/02/2006
30C	M **Selenium (Total)**	**< 0.30**	mg/kg	08/02/2006
30	M **Zinc (Total)**	**120**	mg/kg	08/02/2006
45	M **Sulphate (Total) as SO4**	**0.08**	%	08/02/2006
46	M **Sulphate as SO4 (2:1 Water**	**< 0.06**	g/l	09/02/2006
39	M **pH**	**8.4**	pH units	07/02/2006
	M **>> PAH SUITE <<**	**.**		03/02/2006
307	M **naphthalene**	**2.0**	mg/kg	08/02/2006
307	M **acenaphthylene**	**< 0.50**	mg/kg	08/02/2006
307	M **acenaphthene**	**0.59**	mg/kg	08/02/2006
307	M **fluorene**	**0.54**	mg/kg	08/02/2006
307	M **phenanthrene**	**5.4**	mg/kg	08/02/2006
307	M **anthracene**	**1.4**	mg/kg	08/02/2006
307	M **fluoranthene**	**7.4**	mg/kg	08/02/2006
307	M **pyrene**	**5.0**	mg/kg	08/02/2006
307	M **benzo(a)anthracene**	**1.5**	mg/kg	08/02/2006
307	M **chrysene**	**2.3**	mg/kg	08/02/2006
307	M **benzo(b)fluoranthene**	**0.92**	mg/kg	08/02/2006
307	M **benzo(k)fluoranthene**	**0.95**	mg/kg	08/02/2006
307	M **benzo(a)pyrene**	**2.1**	mg/kg	08/02/2006
307	M **dibenzo(ah)anthracene**	**< 0.50**	mg/kg	08/02/2006
307	M **benzo(ghi)perylene**	**1.1**	mg/kg	08/02/2006
307	M **indeno(123cd)pyrene**	**1.2**	mg/kg	08/02/2006
307	M **PAH (Total)**	**32**	mg/kg	08/02/2006
Moisture	**Moisture***	**14**	%	07/02/2006
Stones	**Stones %***	**25**	%	07/02/2006

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Site	Havelock Street Darfield	**Sample Type**	SOIL
Sample ID:	TP3	**Job:**	EPCE/D2737
Other ID:	0.10m	**Sample No:**	793632
Your Ref:	GMS/KE	**Your Order:**	28489
Received:	03/02/2006		
Description	Dark brown loam with some roots and occasional stones		

Method	Determination	Result	Units	Date of analysis
30/30C	M **Arsenic (Total)**	**18**	mg/kg	08/02/2006
30	M **Cadmium (Total)**	**0.94**	mg/kg	08/02/2006
30	M **Chromium (Total)**	**20**	mg/kg	08/02/2006
30	M **Copper (Total)**	**88**	mg/kg	08/02/2006
30	M **Lead (Total)**	**150**	mg/kg	08/02/2006
30C	M **Mercury (Total)**	**0.51**	mg/kg	08/02/2006
30	M **Nickel (Total)**	**33**	mg/kg	08/02/2006
30C	M **Selenium (Total)**	**0.50**	mg/kg	08/02/2006
30	M **Zinc (Total)**	**160**	mg/kg	08/02/2006
45	M **Sulphate (Total) as SO4**	**0.07**	%	08/02/2006
46	M **Sulphate as SO4 (2:1 Water**	**< 0.06**	g/l	09/02/2006
39	M **pH**	**7.4**	pH units	07/02/2006
	M **>> PAH SUITE <<**	.		03/02/2006
307	M **naphthalene**	**2.6**	mg/kg	08/02/2006
307	M **acenaphthylene**	**< 0.50**	mg/kg	08/02/2006
307	M **acenaphthene**	**< 0.50**	mg/kg	08/02/2006
307	M **fluorene**	**< 0.50**	mg/kg	08/02/2006
307	M **phenanthrene**	**2.9**	mg/kg	08/02/2006
307	M **anthracene**	**0.56**	mg/kg	08/02/2006
307	M **fluoranthene**	**2.7**	mg/kg	08/02/2006
307	M **pyrene**	**2.7**	mg/kg	08/02/2006
307	M **benzo(a)anthracene**	**0.91**	mg/kg	08/02/2006
307	M **chrysene**	**1.4**	mg/kg	08/02/2006
307	M **benzo(b)fluoranthene**	**0.60**	mg/kg	08/02/2006
307	M **benzo(k)fluoranthene**	**0.64**	mg/kg	08/02/2006
307	M **benzo(a)pyrene**	**1.4**	mg/kg	08/02/2006
307	M **dibenzo(ah)anthracene**	**< 0.50**	mg/kg	08/02/2006
307	M **benzo(ghi)perylene**	**0.72**	mg/kg	08/02/2006
307	M **indeno(123cd)pyrene**	**0.77**	mg/kg	08/02/2006
307	M **PAH (Total)**	**19**	mg/kg	08/02/2006
Moisture	**Moisture***	**21**	%	07/02/2006
Stones	**Stones %***	**26**	%	07/02/2006

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Site	Havelock Street Darfield	**Sample Type**	SOIL
Sample ID:	TP4	**Job:**	EPCE/D2737
Other ID:	0.50m	**Sample No:**	793633
Your Ref:	GMS/KE	**Your Order:**	28489
Received:	03/02/2006		
Description	Dark brown loam with occasional stones		

Method	Determination	Result	Units	Date of analysis
30/30C	M **Arsenic (Total)**	**9.7**	mg/kg	08/02/2006
30	M **Cadmium (Total)**	**< 0.50**	mg/kg	08/02/2006
30	M **Chromium (Total)**	**25**	mg/kg	08/02/2006
30	M **Copper (Total)**	**29**	mg/kg	08/02/2006
30	M **Lead (Total)**	**28**	mg/kg	08/02/2006
30C	M **Mercury (Total)**	**< 0.20**	mg/kg	08/02/2006
30	M **Nickel (Total)**	**37**	mg/kg	08/02/2006
30C	M **Selenium (Total)**	**< 0.30**	mg/kg	08/02/2006
30	M **Zinc (Total)**	**100**	mg/kg	08/02/2006
45	M **Sulphate (Total) as SO4**	**0.03**	%	08/02/2006
46	M **Sulphate as SO4 (2:1 Water**	**< 0.06**	g/l	09/02/2006
39	M **pH**	**7.6**	pH units	07/02/2006
	M **>> PAH SUITE <<**	.		03/02/2006
307	M **naphthalene**	**0.85**	mg/kg	08/02/2006
307	M **acenaphthylene**	**< 0.50**	mg/kg	08/02/2006
307	M **acenaphthene**	**< 0.50**	mg/kg	08/02/2006
307	M **fluorene**	**< 0.50**	mg/kg	08/02/2006
307	M **phenanthrene**	**< 0.50**	mg/kg	08/02/2006
307	M **anthracene**	**< 0.50**	mg/kg	08/02/2006
307	M **fluoranthene**	**< 0.50**	mg/kg	08/02/2006
307	M **pyrene**	**< 0.50**	mg/kg	08/02/2006
307	M **benzo(a)anthracene**	**< 0.50**	mg/kg	08/02/2006
307	M **chrysene**	**< 0.50**	mg/kg	08/02/2006
307	M **benzo(b)fluoranthene**	**< 0.50**	mg/kg	08/02/2006
307	M **benzo(k)fluoranthene**	**< 0.50**	mg/kg	08/02/2006
307	M **benzo(a)pyrene**	**< 0.50**	mg/kg	08/02/2006
307	M **dibenzo(ah)anthracene**	**< 0.50**	mg/kg	08/02/2006
307	M **benzo(ghi)perylene**	**< 0.50**	mg/kg	08/02/2006
307	M **indeno(123cd)pyrene**	**< 0.50**	mg/kg	08/02/2006
307	M **PAH (Total)**	**< 2**	mg/kg	08/02/2006
Moisture	**Moisture***	**12**	%	07/02/2006
Stones	**Stones %***	**23**	%	07/02/2006

Site	Havelock Street Darfield	**Sample Type**	SOIL
Sample ID:	TP5	**Job:**	EPCE/D2737
Other ID:	0.50m	**Sample No:**	793634
Your Ref:	GMS/KE	**Your Order:**	28489
Received:	03/02/2006		
Description	Dark brown loam with occasional stones/roots		

Method	Determination	Result	Units	Date of analysis
30/30C	M **Arsenic (Total)**	**7.9**	mg/kg	08/02/2006
30	M **Cadmium (Total)**	**< 0.50**	mg/kg	08/02/2006
30	M **Chromium (Total)**	**21**	mg/kg	08/02/2006
30	M **Copper (Total)**	**23**	mg/kg	08/02/2006
30	M **Lead (Total)**	**23**	mg/kg	08/02/2006
30C	M **Mercury (Total)**	**< 0.20**	mg/kg	08/02/2006
30	M **Nickel (Total)**	**30**	mg/kg	08/02/2006
30C	M **Selenium (Total)**	**< 0.30**	mg/kg	08/02/2006
30	M **Zinc (Total)**	**82**	mg/kg	08/02/2006
45	M **Sulphate (Total) as SO4**	**0.03**	%	08/02/2006
46	M **Sulphate as SO4 (2:1 Water**	**0.07**	g/l	09/02/2006
39	M **pH**	**7.7**	pH units	07/02/2006
	M **>> PAH SUITE <<**			03/02/2006
307	M **naphthalene**	**0.93**	mg/kg	08/02/2006
307	M **acenaphthylene**	**< 0.50**	mg/kg	08/02/2006
307	M **acenaphthene**	**< 0.50**	mg/kg	08/02/2006
307	M **fluorene**	**< 0.50**	mg/kg	08/02/2006
307	M **phenanthrene**	**< 0.50**	mg/kg	08/02/2006
307	M **anthracene**	**< 0.50**	mg/kg	08/02/2006
307	M **fluoranthene**	**< 0.50**	mg/kg	08/02/2006
307	M **pyrene**	**< 0.50**	mg/kg	08/02/2006
307	M **benzo(a)anthracene**	**< 0.50**	mg/kg	08/02/2006
307	M **chrysene**	**< 0.50**	mg/kg	08/02/2006
307	M **benzo(b)fluoranthene**	**< 0.50**	mg/kg	08/02/2006
307	M **benzo(k)fluoranthene**	**< 0.50**	mg/kg	08/02/2006
307	M **benzo(a)pyrene**	**< 0.50**	mg/kg	08/02/2006
307	M **dibenzo(ah)anthracene**	**< 0.50**	mg/kg	08/02/2006
307	M **benzo(ghi)perylene**	**< 0.50**	mg/kg	08/02/2006
307	M **indeno(123cd)pyrene**	**< 0.50**	mg/kg	08/02/2006
307	M **PAH (Total)**	**2**	mg/kg	08/02/2006
Moisture	**Moisture***	**14**	%	07/02/2006
Stones	**Stones %***	**21**	%	07/02/2006

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Site	Havelock Street Darfield	**Sample Type**	SOIL
Sample ID:	TP6	**Job:**	EPCE/D2737
Other ID:	0.15m	**Sample No:**	793635
Your Ref:	GMS/KE	**Your Order:**	28489
Received:	03/02/2006		
Description	Brown/black loam with occasional stones/roots		

Method	Determination	Result	Units	Date of analysis
30/30C	M **Arsenic (Total)**	**26**	mg/kg	08/02/2006
30	M **Cadmium (Total)**	**1.5**	mg/kg	08/02/2006
30	M **Chromium (Total)**	**28**	mg/kg	08/02/2006
30	M **Copper (Total)**	**160**	mg/kg	08/02/2006
30	M **Lead (Total)**	**270**	mg/kg	08/02/2006
30C	M **Mercury (Total)**	**0.91**	mg/kg	08/02/2006
30	M **Nickel (Total)**	**59**	mg/kg	08/02/2006
30C	M **Selenium (Total)**	**0.60**	mg/kg	08/02/2006
30	M **Zinc (Total)**	**280**	mg/kg	08/02/2006
45	M **Sulphate (Total) as SO4**	**0.08**	%	08/02/2006
46	M **Sulphate as SO4 (2:1 Water**	**0.08**	g/l	09/02/2006
39	M **pH**	**7.2**	pH units	07/02/2006
	M **>> PAH SUITE <<**	.		03/02/2006
307	M **naphthalene**	**4.9**	mg/kg	08/02/2006
307	M **acenaphthylene**	**< 0.50**	mg/kg	08/02/2006
307	M **acenaphthene**	**< 0.50**	mg/kg	08/02/2006
307	M **fluorene**	**0.84**	mg/kg	08/02/2006
307	M **phenanthrene**	**5.6**	mg/kg	08/02/2006
307	M **anthracene**	**1.4**	mg/kg	08/02/2006
307	M **fluoranthene**	**5.3**	mg/kg	08/02/2006
307	M **pyrene**	**5.0**	mg/kg	08/02/2006
307	M **benzo(a)anthracene**	**1.8**	mg/kg	08/02/2006
307	M **chrysene**	**2.5**	mg/kg	08/02/2006
307	M **benzo(b)fluoranthene**	**1.2**	mg/kg	08/02/2006
307	M **benzo(k)fluoranthene**	**1.2**	mg/kg	08/02/2006
307	M **benzo(a)pyrene**	**2.4**	mg/kg	08/02/2006
307	M **dibenzo(ah)anthracene**	**< 0.50**	mg/kg	08/02/2006
307	M **benzo(ghi)perylene**	**1.4**	mg/kg	08/02/2006
307	M **indeno(123cd)pyrene**	**1.4**	mg/kg	08/02/2006
307	M **PAH (Total)**	**36**	mg/kg	08/02/2006
Moisture	**Moisture***	**21**	%	07/02/2006
Stones	**Stones %***	**21**	%	07/02/2006

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ASSESSMENT VALUES				
SGVs (from CLR7)	**Residential with Plant Uptake**			
Arsenic	20			
Cadmium	1 (pH 6); 2 (pH 7); 8 (pH 8)			
Chromium	130			
Lead	450			
Mercury	8			
Nickel	50			
Selenium	35			
Other Determinands				
Total PAH	20			
Benzo (a) Pyrene	1.6			
Sulphate	0.5 g/l			
Water Soluble Sulphate	500 mg/l			
pH	<5.0 or >9.0			
Phytotoxic metals (from The Soil Code)	**pH 5.0-5.5**	**pH 5.5-6.0**	**pH 6.0-7.0**	**pH >7.0**
Zinc	200	200	200	300
Copper	80	100	135	200

All values are in mg/kg except pH.

The threshold values are derived from soil guideline values from DEFRA and Environment Agency "Contaminated Land Exposure Assessment" model.

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Contamination Assessment Values For Soil

HAVELOCK STREET, DARFIELD

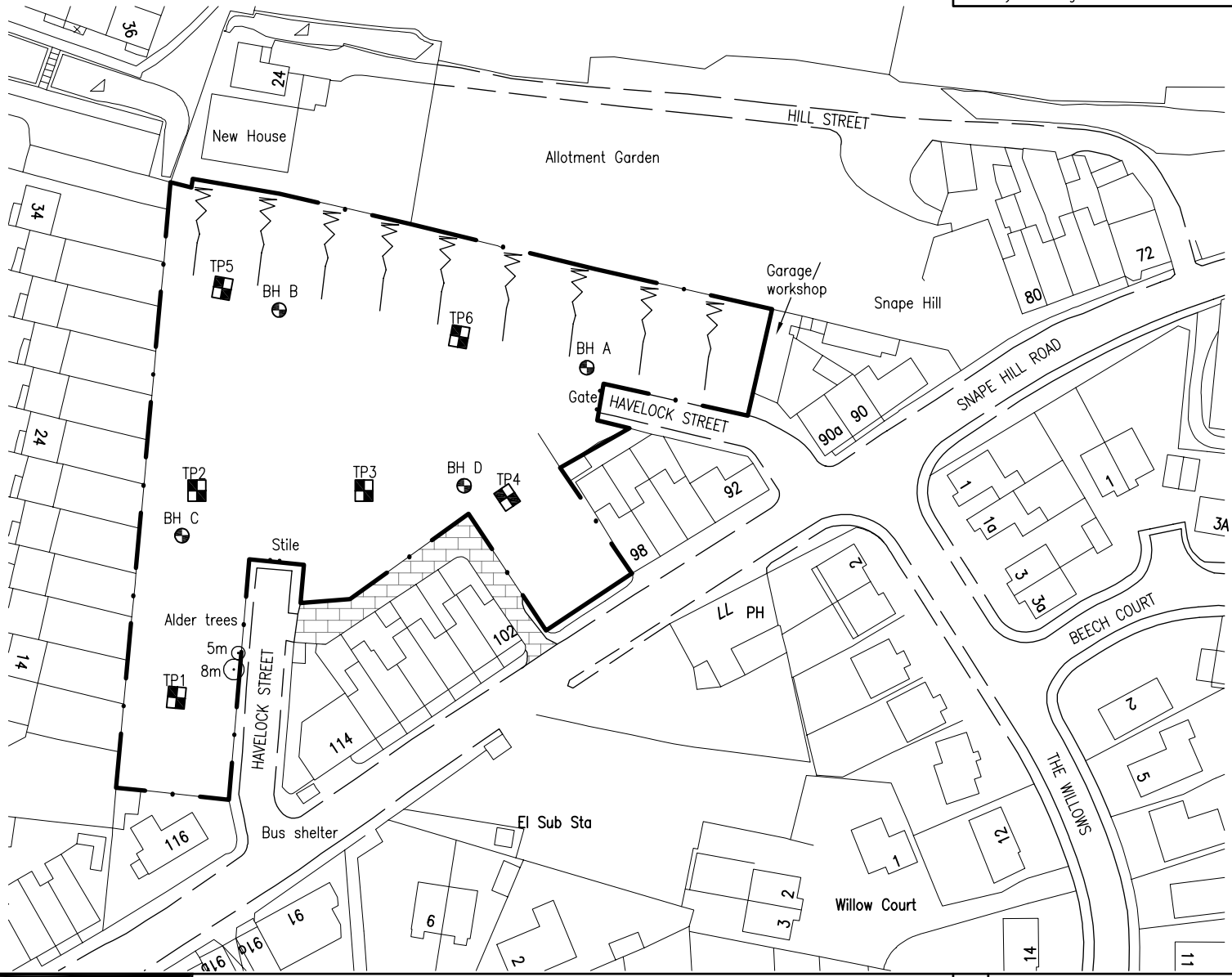
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Prepared by	JCH
Typist ref	JCH
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TABLE 1

DRAWING

Site Plan 28489/002

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LAND AT HAVELOCK ST, DARFIELD, BARNSLEY.

TRIAL PIT AND BOREHOLE LOCATION PLAN

REV	DESCRIPTION	SIG	CHK	DATE

SCALE WHEN PLOTTED AT A3	DRAWING STATUS
1:750	INFORMATION

DRAWN	CHECKED	DATE	DRAWING NUMBER	REV
LL	KE	03.02.06	28489/002	–

Appendix 7: SUDS Statement

Provided by *Inspire Design Group*

12 pages inserted

INSPIRE
Design & Development Ltd

D J Atkinson Construction Ltd

Snape Hill Road, Darfield
Residential Development

Sustainable Drainage Statement

Final
November 2015



Revision Schedule

Sustainable Drainage Statement
November 2015

Doc Ref: DJA-1177-01-SD-001

Rev	Date	Details	Prepared by	Reviewed by	Approved by
P1	09/11/2015	Final	Lee Barnes BSc (hons) MCIHT	Craig Russell	Lee Barnes BSc (hons) MCIHT

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1.0 Statement Background

Following guidance issued by DCLG, all 'major' planning applications being determined from 6 April 2015, must consider sustainable drainage systems (SuDS) at an early stage of the design process.

SuDS incorporate a range of techniques that aim to mimic the way rainfall drains in natural catchments. Their purpose is to minimise the impact of urban development on the water environment, reduce flood risk and to improve water quality.

In accordance with the National Planning Policy Framework (NPPF), SuDS should be specified wherever possible to manage surface water. This in turn reduces the burden downstream on both watercourses and sewerage systems. The NPPF also requires the impact of climate change to be considerd with particular regard to flood risk.

This statement sets out a suggested hierachial approach to the site SuDS strategy, this will be used to inform the detailed design stage of the development, and demonstrates that surface water run off can be managed to satisfy the recent change in planning policy.

2.0 Proposed Development

The proposed development is located approximately 6 miles east of Barnsley City Centre, covering an area of approximately 0.67ha. The site currently un-used and comprises grass/scrub land.



Figure 2.0.1: Site Location Plan

The application proposes a scheme of 30 new affordable homes with associated parking and amenity space.



Figure 2.0.2: Site Layout

3.0 SuDS Strategy

The primary function of SuDS, as with conventional drainage, is to provide effective surface water drainage, ensuring the greatest degree of flood risk protection over the long term both within and downstream of the development whilst improving water quality. Appropriately designed, constructed and maintained, SuDS are more sustainable than conventional drainage systems and can help to:

- Reduce surface water run-off rates therefore reducing the risk of flooding
- Encourage natural groundwater re-charge
- Reduce pollutant concentrations in storm water
- Provide habitat for wildlife.

There are many site-specific factors which will influence the choice of any single or combination of SuDS devices used within a development. The primary factors are:

- Whether the underlying ground is contaminated.
- Whether the underlying geology has suitable infiltration characteristics
- Relative position of the water table
- Whether the site is steeply sloping and its general topography
- The availability of space inside the development for each potential SUDS facility.
- Health & Safety issues
- Proximity to protected water.

To ensure no increased flood risk to offsite land and development, disposal of surface water to the ground is encouraged and runoff volumes will be reduced through the SuDS management train. Where ground conditions are unsuitable to allow efficient infiltration, discharge to a water course should be the next option, with a connection to a public sewer being the least favourable option. As there is no suitable watercourse to provide a suitable outfall, should the preference of infiltration not be suitable due to the ground conditions then a section 106 application will be made to Yorkshire Water for a connection to the public sewer. Surface water run-off rates will be attenuated to the equivalent greenfield run-off rate and will be agreed with the environment agency through the planning process.

The site levels are to be engineered such that where possible water drains away from properties. The site will be designed for exceedance to ensure overland flood routing does not result in flooding to new or existing properties.

4.0 SuDS Techniques

Tables 1 and 2, below, provide an assessment of various above and below ground SuDS methods that have been considered to provide water quality treatment and surface water management for this site. The purpose of this assessment is to set out options to be considered at the planning stage with considerations to site constraints, viability and lifetime maintenance of the residential development.

Table 1:

Feature	Comment	Suitability for this site
Green Roofs	Can be used on suitable low Pitched roofs to provide, attenuation and treatment of rainwater, and promotes evaporation and biodiversity.	Not suitable: Architectural proposals for the development involve a pitched roof arrangement which are not suitable for green roofs.
Rainwater Havesting	Rainwater harvesting reduces the total runoff volume from the developed site, and reduces treated water consumption.	Not suitable: • Additional costs of installation would have severe effect on viability of the development. • Running and maintenance costs would not be acceptable to the long term viability of the site.
Infiltration	Reduces total run off volume from the development.	Suitability to be confirmed pending site investigation, soakaway testing to BRE365 to be carried out prior to detailed design stage.
Permeable Surfacing (Infiltration)	• Reduces total run off volume from the development. • Can be used to enhance quality of run off water.	Suitability to be confirmed pending site investigation, soakaway testing to BRE365 to be carried out prior to detailed design stage.
Permeable Surfacing	• Can be used to enhance	May be suitable as part of a

(Storage)	quality of run off water by adsorbtion of hydrocarbons • Sub-base provides storage and structural pavement foundation.	site wide system in communal areas under a management company control. Not suitable for private driveways as house owners may re-pave.
Swales, retention basins, detention basins and swales	• Provide areas for above ground surface run off storage. • Swales also allow filtering of particulate matter, improving water quality. • Create attractive amenity spaces • Promote biodiversity	Not Suitable: • Space constraints on site do not permit large above ground areas for flood storage. • The steeply sloping nature of the site make surface features difficult to accommodate.
Filter Strips	• Provide water quality improvements. • Slow down surface water flows.	Not Suitable: • Space constraints do not allow.

Table 2

Feature	Comment	Suitability for site
Geo-cellular storage	• Suitable for sites with insufficient space for surface features. • Suitable for sites where topography prevents the use of basins etc. • Can be very effective infiltration devices subject to ground conditions. • Good Void ratio compared to stone	Suitable: • Subject to detailed design and drainage layout. • Suitability of infiltration to be confirmed pending site investigation, • Not suitable for adoption.
Over-sized Pipes	• Suitable for sites with insufficient space for surface features. • Laid underground, conveying surface water to a suitable location for treatment and/or disposal (only be considered where surface SUDS techniques are not practicable) • Easy Maintenance	Suitable: • Subject to detailed design and drainage layout. • May result in deep drainage on steep site due to the need to lay storage pipes at flat gradients. Consider suitability in context with CDM. • Suitable for adoption.
Culverts and Tanks	• Suitable for sites with insufficient space for surface features. • Easy Maintenance	• Subject to detailed design and drainage layout. • May result in deep drainage on steep site due to the need to lay

		storage pipes at flat gradients. Consider suitability in context with CDM. • Suitable for adoption.

5.0 Summary

The SuDs strategy described demonstrates that surface water from the development can be properly managed and that a viable option to drain the site exists. Discharge rates will be agrees with the environment agency and managed via a flow control device to ensure no increased offsite flood risk occurs. .Opportunities will be taken to maximise infiltration to the ground and reduce runoff volumes from the site. Source control features such as permeable paving will be used where appropriate., This strategy has considered the site constraints, viability and lifetime maintenance of the residential development.

The constrained nature of the development offers little opportunity for surface features, however suitable attenuation methods are achievable.

Appendix 8: Community Consultation Statement

Provided by *Synergy Housing Solutions*

6 pages inserted

Snape Hill Road, Darfield

Community Consultation Statement

12th November 2015

Address: Land at Havelock Street, Off Snape Hill Road, Darfield, Barnsley S73

As part of our Framework Agreement with our partner, Barnsley M.B.C, Chevin Housing Association held a community involvement event in the Valley Methodist Church Hall for local residents, in particular residents adjacent to the proposed scheme. They were invited by letter to come and express their views, comments and share with us any particular concern(s) that they may have. In addition, the three ward members were invited to attend.

The event was held on 28th Oct. 2015 and the scheme's architect, representatives of Barnsley Housing Growth Team and Chevin Housing Association, were in attendance. The residents who came to view the plans were provided with details of the scheme and the development programme and were also given the opportunity to note their comments and were broadly supportive of the proposals and had no adverse comments about the design. The comments received and the responses provided are attached for information and summarised below.

- Total attendees 8
- Total attendees who provided written comments 4
- 2 comments concerned with access to the rear of Snape Hill Road
- 2 comments in respect of widening of the access road
- 1 comment in support of the proposed scheme

The majority of comments were in respect of the access to the rear of properties along Snape Hill Road. The consultees were advised that the road will remain as existing and will be increased slightly in width, with new, neater boundary treatments as part of the proposals.

Snape Hill Road, Darfield
Public Information Event 28/10/15

Name	Address	Contact details
MRS DEMPSEY	110 SNAPE HILL RD. DARF.	
MRS BEEVERS	104 SNAPE HILL RD. DARF.	
MRS BATTY	112 SNAPE HILL RD DARF	
MR R. BATTY	" " " " "	
COUNCILLOR D. COATES	———	
COUNCILLOR MARKHAM	———	
MR K. SCOTHORN	96 SNAPE HILL RD DARF.	
MR. THORNTON	106 SNAPE HILL RD DARF.	

Comments/Expressions of Interest Form - Snape Hill Road, Darfield

Please provide us with your comments/details

Name	Address	Contact Number
MR THORNTON	106 SNAPE HILL RD DARFIELD	

Comments

WOULD WELCOME THE ACCESS ROAD AT REAR OF HIS PROPERTY BEING MADE SLIGHTLY WIDER THAN EXISTING, TO ENSURE THAT THERE IS TWO FULL CAR WIDTHS, I.E. CARS CAN STILL PASS IF CARS ARE PARKED ON ONE SIDE.

Comments/Expressions of Interest Form - Snape Hill Road, Darfield

Please provide us with your comments/details

Name	Address	Contact Number

Comments

Havelock Street Neighbourhood Consultation
Darfield Methodist Church
28-10-2015

Consultee Name: A. Dawson
Address: 110 Snape Hall Road.
Comments: annemariedawsey@btinternet.com. -Concerns over access to back of 110 Snape Hall Road. Access is provided as existing.

Havelock Street Neighbourhood Consultation
Darfield Methodist Church
28-10-2015

Consultee Name: R. BATTY
Address: 112 SWAPE HILL
Comments: ACCESS ROAD AT THE REAR OF 114 — 102 WILL THIS BE LEFT THE WIDTH TO EXISTING FENCE OR TO WIDTH OF PAVED ROAD. EXTRA WIDTH WAS LEFT TO ENABLE CARS TO TURN INTO BACK YARDS FOR PARKING.

Havelock Street Neighbourhood Consultation
Darfield Methodist Church
28-10-2015

Consultee Name:
Vivien Norton (Mrs Beevers daughter)

Address:
Mrs Beevers
104, Snape Hill Rd
Darfield.

Comments:
As a former resident of Havelock St I am pleased to see the site being redeveloped. It was a happy community and I hope this can be recreated.
I am only concerned from my Mum's worry about the access to the back of her home where she parks her car. If that road could be "adopted" and maintained it would greatly help neighbourly relations.

Appendix 9: Affordable Housing Statement

Provided by *Synergy Housing Solutions*

1 page inserted

Snape Hill Road, Darfield

Affordable Housing Statement

12th November 2015

Address: Land at Havelock Street, Off Snape Hill Road, Darfield, Barnsley S73

Chevin Housing Association, part of Together Housing Group made a successful Bid in spring 2014 to the Homes and Community Agency (HCA) for funding to support the Association's 2015-2018 development programme.

This development is in line with the housing growth strategy of Barnsley M.B.C and had received the necessary support from Barnsley M.B. Council prior to the bids to the HCA.

Chevin Housing Association was successful in receiving the required support from the HCA, to develop this scheme of 30 family houses, for affordable rent, comprising of 21 x 2 bedroom houses and 9 x 3 bedroom houses.

This development is programmed to start on site in March 2015 and to be completed in spring 2016.

This housing development when completed will be offered for letting to local people who are in the greatest need for housing / re-housing in consultation with Barnsley M.B.C.

The rents are all "Affordable Rents" which are set at 80% of Market Rents for that locality.