



# **West Winch Housing Access Road**

## **Environmental Statement Chapter 12: Appendix 12.3C: Exploratory Hole Logs and Laboratory Data**

Author: WSP

Document Reference: NCC/3.12.03c

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## **1 Introduction**

- 1.1.1 this document contains exploratory hole records which are produced from a surveyor's observations of soil and rock core extracted from the ground and typically include locality and lithological descriptions with depth and thickness. This document has been produced by Norfolk Partnership Laboratory and some users may not be able to access all technical details. If you require this document in a more accessible format please contact [westwinchhar@norfolk.gov.uk](mailto:westwinchhar@norfolk.gov.uk).



















































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Our Report No. NCCL 72 to 713-602

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Date Report Issued 12 Aug 2020

Page 1 of 1

**Determination of Moisture Content to BS1377 : Part 2 : 1990 : Section 3.2**

Scheme		West Winch Relief Road						
Report No.	Hole ID	Specimen Depth (m)	Sample Type	Sample Ref.	Drying Temp	Natural MC %	Sample description	
8072	205	1.8	B	4	105	13	Stiff mottled brown and grey gravelly silty CLAY. Gravel is fine to coarse angular to sub-rounded chalk, flint and mudstone. Numerous lenses of orangey brown very	
80713	210	1.8	B	4	105	20	Firm to stiff mottled light grey and orangey brown very sandy slightly gravelly silty CLAY. Gravel is fine to medium angular flint.	
8077	206	2.8	B	5	105	17	Stiff mottled brown and grey gravelly silty CLAY. Gravel is fine to coarse angular to sub-rounded chalk, flint and mudstone, occasional red chalk.	

Remarks

Not all of the information required by the Standard is shown on this report but is available on request.  
All samples prepared in accordance with BS 1377:Part 1:1990.

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Test Code = 602



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Date Report Issued 25 Sep 2020

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**Determination of Liquid Limit to BS1377-2:1990 CI 4.3 Cone Penetrometer (Definitive Method)  
and Determination of Plasticity Index to BS1377-2:1990 CI 5**

Scheme	West Winch Relief Road		
Location	107	Depth	2m
Date sampled	27 Jul 2020	Date received	27 Jul 2020
Date tested	16 Sep 2020		
Sample type	Undisturbed Sample	Sample Mass (g)	799

If a Sample Certificate was provided it is available for inspection.  
The accuracy of information provided by third parties cannot be guaranteed.

Material	Soil
Description	Firm very dark brown slightly gravelly CLAY. Gravel is fine to medium shell fragments.

Supplier	Not applicable	Source	Ex site
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Location	Test Specimen
Orientation	Not applicable

	<b>Preparation Details</b>	
Method of Division	Quartering	
Preparation Method	Wet sieving	Oven dried @ 40°C
Retained 425µm (%)	18.1	

Natural MC (%)	16
Drying Temp. (°C)	105-110
Liquid Limit (%)	27
Plastic Limit (%)	14
Plasticity Index (%)	13
Modified PI *(%)	11

\*BRE Digest 240:1993.

*This calculation is outside the scope of UKAS accreditation.*

BS Soil Classification CL

Remarks	NHBC Volume change potential classification is low.
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Page 1 of 1

**Determination of Liquid Limit to BS1377-2:1990 CI 4.3 Cone Penetrometer (Definitive Method)  
and Determination of Plasticity Index to BS1377-2:1990 CI 5**

<b>Scheme</b>	West Winch Relief Road		
<b>Location</b>	205	<b>Depth</b>	0.5m
<b>Date sampled</b>	23 Jul 2020	<b>Date received</b>	23 Jul 2020
<b>Date tested</b>	11 Aug 2020		
<b>Sample type</b>	Bulk Disturbed	<b>Sample Mass (g)</b>	425

If a Sample Certificate was provided it is available for inspection.  
The accuracy of information provided by third parties cannot be guaranteed.

<b>Material</b>	Soil		
<b>Description</b>	Stiff mottled brown and grey gravelly silty CLAY. Gravel is fine to coarse angular to sub-rounded chalk, flint and mudstone. Numerous lenses of orangey brown very sandy silty clay.		

<b>Supplier</b>	Not applicable	<b>Source</b>	Ex site
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<b>Location</b>	<b>Test Specimen</b>
<b>Orientation</b>	Not applicable

<b>Method of Division</b>	<b>Preparation Details</b>	
<b>Preparation Method</b>	Quartering	Oven dried @ 40°C
<b>Retained 425µm (%)</b>	Wet sieving	4.5

<b>Natural MC (%)</b>	16
<b>Drying Temp. (°C)</b>	105-110
<b>Liquid Limit (%)</b>	30
<b>Plastic Limit (%)</b>	12
<b>Plasticity Index (%)</b>	18
<b>Modified PI *(%)</b>	17

\*BRE Digest 240:1993.  
*This calculation is outside the scope of UKAS accreditation.*

**BS Soil Classification** CL

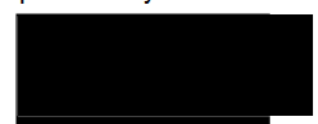
**Remarks** NHBC Volume change potential classification is low.

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**Determination of Liquid Limit to BS1377-2:1990 CI 4.3 Cone Penetrometer (Definitive Method)  
and Determination of Plasticity Index to BS1377-2:1990 CI 5**

<b>Scheme</b>	West Winch Relief Road		
<b>Location</b>	206	<b>Depth</b>	1.4m
<b>Date sampled</b>	23 Jul 2020	<b>Date received</b>	23 Jul 2020
<b>Date tested</b>	11 Aug 2020		
<b>Sample type</b>	Bulk Disturbed	<b>Sample Mass (g)</b>	585

If a Sample Certificate was provided it is available for inspection.  
The accuracy of information provided by third parties cannot be guaranteed.

<b>Material</b>	Soil
<b>Description</b>	Stiff mottled brown and grey gravelly silty CLAY. Gravel is fine to coarse angular to sub-rounded chalk, flint and mudstone, occasional red chalk.

<b>Supplier</b>	Not applicable	<b>Source</b>	Ex site
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	<b>Test Specimen</b>
<b>Location</b>	Not applicable
<b>Orientation</b>	Not applicable

	<b>Preparation Details</b>
<b>Method of Division</b>	Quartering
<b>Preparation Method</b>	Hand picking
<b>Retained 425µm (%)</b>	Oven dried @ 40°C

<b>Natural MC (%)</b>	22
<b>Drying Temp. (°C)</b>	105-110
<b>Liquid Limit (%)</b>	40
<b>Plastic Limit (%)</b>	16
<b>Plasticity Index (%)</b>	24
<b>Modified PI *(%)</b>	24

\*BRE Digest 240:1993.

*This calculation is outside the scope of UKAS accreditation.*

**BS Soil Classification** C I

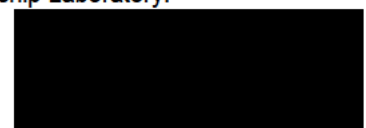
<b>Remarks</b>	NHBC Volume change potential classification is medium.
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**Determination of Liquid Limit to BS1377-2:1990 CI 4.3 Cone Penetrometer (Definitive Method)  
and Determination of Plasticity Index to BS1377-2:1990 CI 5**

<b>Scheme</b>	West Winch Relief Road		
<b>Location</b>	210	<b>Depth</b>	0.8m
<b>Date sampled</b>	24 Jul 2020	<b>Date received</b>	24 Jul 2020
<b>Date tested</b>	11 Aug 2020		
<b>Sample type</b>	Bulk Disturbed	<b>Sample Mass (g)</b>	435

If a Sample Certificate was provided it is available for inspection.  
The accuracy of information provided by third parties cannot be guaranteed.

<b>Material</b>	Soil		
<b>Description</b>	Firm to stiff mottled light grey and orangey brown very sandy slightly gravelly silty CLAY. Gravel is fine to medium angular flint		

<b>Supplier</b>	Not applicable	<b>Source</b>	Ex site
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<b>Location</b>	<b>Test Specimen</b>
<b>Orientation</b>	Not applicable

<b>Method of Division</b>	<b>Preparation Details</b>	
<b>Preparation Method</b>	Quartering	Oven dried @ 40°C
<b>Retained 425µm (%)</b>	Hand picking	

<b>Natural MC (%)</b>	12
<b>Drying Temp. (°C)</b>	105-110
<b>Liquid Limit (%)</b>	33
<b>Plastic Limit (%)</b>	17
<b>Plasticity Index (%)</b>	17
<b>Modified PI *(%)</b>	17

\*BRE Digest 240:1993.  
*This calculation is outside the scope of UKAS accreditation.*

**BS Soil Classification** CL

<b>Remarks</b>	NHBC Volume change potential classification is low.
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**Determination of Liquid Limit to BS1377-2:1990 CI 4.3 Cone Penetrometer (Definitive Method)  
and Determination of Plasticity Index to BS1377-2:1990 CI 5**

<b>Scheme</b>	West Winch Relief Road		
<b>Location</b>	207	<b>Depth</b>	1.9m
<b>Date sampled</b>	23 Jul 2020	<b>Date received</b>	23 Jul 2020
<b>Date tested</b>	12 Aug 2020		
<b>Sample type</b>	Bulk Disturbed	<b>Sample Mass (g)</b>	435

If a Sample Certificate was provided it is available for inspection.  
The accuracy of information provided by third parties cannot be guaranteed.

<b>Material</b>	Soil
<b>Description</b>	Dark grey clayey sandy SILT with laminae and thin beds of siltstone.

<b>Supplier</b>	Not applicable	<b>Source</b>	Ex site
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	<b>Test Specimen</b>
<b>Location</b>	Not applicable
<b>Orientation</b>	Not applicable

	<b>Preparation Details</b>
<b>Method of Division</b>	Quartering
<b>Preparation Method</b>	Hand picking
<b>Retained 425µm (%)</b>	Oven dried @ 40°C

<b>Natural MC (%)</b>	22
<b>Drying Temp. (°C)</b>	105-110
<b>Liquid Limit (%)</b>	43
<b>Plastic Limit (%)</b>	20
<b>Plasticity Index (%)</b>	24
<b>Modified PI *(%)</b>	24

\*BRE Digest 240:1993.  
*This calculation is outside the scope of UKAS accreditation.*

**BS Soil Classification** C I

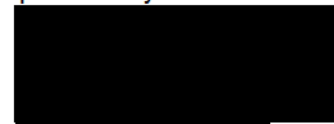
<b>Remarks</b>	NHBC Volume change potential classification is medium.
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**Determination of Liquid Limit to BS1377-2:1990 CI 4.3 Cone Penetrometer (Definitive Method)  
and Determination of Plasticity Index to BS1377-2:1990 CI 5**

Scheme	West Winch Relief Road		
Location	211	Depth	0.8m
Date sampled	27 Jul 2020	Date received	27 Jul 2020
Date tested	10 Sep 2020		
Sample type	Bulk Disturbed	Sample Mass (g)	475

If a Sample Certificate was provided it is available for inspection.  
The accuracy of information provided by third parties cannot be guaranteed.

Material	Soil
Description	Frim dark orangey-brown slightly gravelly sandy CLAY. Gravel is fine to medium subangular to subrounded flint.

Supplier	Not applicable	Source	Ex site
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Location	Test Specimen
Orientation	Not applicable

	<b>Preparation Details</b>	
Method of Division	Quartering	
Preparation Method	Wet sieving	Oven dried @ 40°C
Retained 425µm (%)	5.5	

Natural MC (%)	20
Drying Temp. (°C)	105-110
Liquid Limit (%)	48
Plastic Limit (%)	15
Plasticity Index (%)	33
Modified PI *(%)	31

\*BRE Digest 240:1993.

*This calculation is outside the scope of UKAS accreditation.*

BS Soil Classification C I

Remarks	NHBC Volume change potential classification is medium.
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**Determination of Liquid Limit to BS1377-2:1990 CI 4.3 Cone Penetrometer (Definitive Method)  
and Determination of Plasticity Index to BS1377-2:1990 CI 5**

<b>Scheme</b>	West Winch Relief Road		
<b>Location</b>	213	<b>Depth</b>	1.7m
<b>Date sampled</b>	24 Jul 2020	<b>Date received</b>	24 Jul 2020
<b>Date tested</b>	11 Aug 2020		
<b>Sample type</b>	Bulk Disturbed	<b>Sample Mass (g)</b>	839

If a Sample Certificate was provided it is available for inspection.  
The accuracy of information provided by third parties cannot be guaranteed.

<b>Material</b>	Soil		
<b>Description</b>	Brown gravelly silty fine SAND with lenses of soft light grey clay.		

<b>Supplier</b>	Not applicable	<b>Source</b>	Ex site
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<b>Location</b>	<b>Test Specimen</b> Not applicable		
<b>Orientation</b>	Not applicable		

<b>Method of Division</b>	<b>Preparation Details</b> Quartering		
<b>Preparation Method</b>	Wet sieving	Oven dried @ 40°C	
<b>Retained 425µm (%)</b>	12.9		

<b>Natural MC (%)</b>	14		
<b>Drying Temp. (°C)</b>	105-110		
<b>Liquid Limit (%)</b>	27		
<b>Plastic Limit (%)</b>	Non Plastic		
<b>Plasticity Index (%)</b>			
<b>Modified PI *(%)</b>	*BRE Digest 240:1993. <i>This calculation is outside the scope of UKAS accreditation.</i>		

**BS Soil Classification** Non Plastic

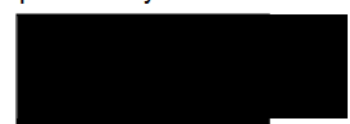
**Remarks**

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**Determination of Liquid Limit to BS1377-2:1990 CI 4.3 Cone Penetrometer (Definitive Method)  
and Determination of Plasticity Index to BS1377-2:1990 CI 5**

<b>Scheme</b>	West Winch Relief Road		
<b>Location</b>	214	<b>Depth</b>	1.5m
<b>Date sampled</b>	24 Jul 2020	<b>Date received</b>	24 Jul 2020
<b>Date tested</b>	11 Aug 2020		
<b>Sample type</b>	Bulk Disturbed	<b>Sample Mass (g)</b>	418

If a Sample Certificate was provided it is available for inspection.  
The accuracy of information provided by third parties cannot be guaranteed.

<b>Material</b>	Soil		
<b>Description</b>	Firm to stiff dark grey CLAY. Occasional shell fragments.		

<b>Supplier</b>	Not applicable	<b>Source</b>	Ex site
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<b>Location</b>	<b>Test Specimen</b>
Not applicable	Not applicable
<b>Orientation</b>	Not applicable

<b>Method of Division</b>	<b>Preparation Details</b>		
Quartering			
<b>Preparation Method</b>	Hand picking	Oven dried @ 40°C	
<b>Retained 425µm (%)</b>			

<b>Natural MC (%)</b>	28		
<b>Drying Temp. (°C)</b>	105-110		
<b>Liquid Limit (%)</b>	60		
<b>Plastic Limit (%)</b>	19		
<b>Plasticity Index (%)</b>	41		
<b>Modified PI *(%)</b>	41	*BRE Digest 240:1993.	

*This calculation is outside the scope of UKAS accreditation.*

**BS Soil Classification** C H

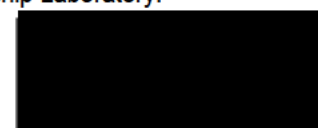
<b>Remarks</b>	NHBC Volume change potential classification is high.
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Page 1 of 1

**Determination of Liquid Limit to BS1377-2:1990 CI 4.3 Cone Penetrometer (Definitive Method)  
and Determination of Plasticity Index to BS1377-2:1990 CI 5**

<b>Scheme</b>	West Winch Relief Road		
<b>Location</b>	215	<b>Depth</b>	1.5m
<b>Date sampled</b>	24 Jul 2020	<b>Date received</b>	24 Jul 2020
<b>Date tested</b>	11 Aug 2020		
<b>Sample type</b>	Bulk Disturbed	<b>Sample Mass (g)</b>	551

If a Sample Certificate was provided it is available for inspection.  
The accuracy of information provided by third parties cannot be guaranteed.

<b>Material</b>	Soil		
<b>Description</b>	Soft mottled orangey brown, light grey and reddish brown very sandy silty slightly gravelly CLAY. Gravel is fine to medium angular to rounded flint and chalk.		

<b>Supplier</b>	Not applicable	<b>Source</b>	Ex site
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<b>Location</b>	<b>Test Specimen</b>
<b>Orientation</b>	

<b>Method of Division</b>	<b>Preparation Details</b>	
<b>Preparation Method</b>	Quartering	Oven dried @ 40°C
<b>Retained 425µm (%)</b>	Wet sieving	
	11.3	

<b>Natural MC (%)</b>	17
<b>Drying Temp. (°C)</b>	105-110
<b>Liquid Limit (%)</b>	34
<b>Plastic Limit (%)</b>	16
<b>Plasticity Index (%)</b>	17
<b>Modified PI *(%)</b>	15

\*BRE Digest 240:1993.  
*This calculation is outside the scope of UKAS accreditation.*

**BS Soil Classification** CL

**Remarks** NHBC Volume change potential classification is low.

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**Determination of Liquid Limit to BS1377-2:1990 CI 4.3 Cone Penetrometer (Definitive Method)  
and Determination of Plasticity Index to BS1377-2:1990 CI 5**

<b>Scheme</b>	West Winch Relief Road		
<b>Location</b>	216	<b>Depth</b>	0.7m
<b>Date sampled</b>	22 Jul 2020	<b>Date received</b>	22 Jul 2020
<b>Date tested</b>	11 Aug 2020		
<b>Sample type</b>	Bulk Disturbed	<b>Sample Mass (g)</b>	412

If a Sample Certificate was provided it is available for inspection.  
The accuracy of information provided by third parties cannot be guaranteed.

<b>Material</b>	Soil		
<b>Description</b>	Stiff mottled brown and grey slightly sandy silty CLAY.		

<b>Supplier</b>	Not applicable	<b>Source</b>	Ex site
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<b>Location</b>	<b>Test Specimen</b> Not applicable		
<b>Orientation</b>	Not applicable		

<b>Method of Division</b>	<b>Preparation Details</b> Quartering		
<b>Preparation Method</b>	Wet sieving	Oven dried @ 40°C	
<b>Retained 425µm (%)</b>			

<b>Natural MC (%)</b>	21		
<b>Drying Temp. (°C)</b>	105-110		
<b>Liquid Limit (%)</b>	50		
<b>Plastic Limit (%)</b>	16		
<b>Plasticity Index (%)</b>	34		
<b>Modified PI *(%)</b>	34	*BRE Digest 240:1993.	

*This calculation is outside the scope of UKAS accreditation.*

**BS Soil Classification** C H

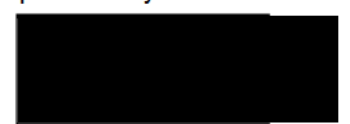
<b>Remarks</b>	NHBC Volume change potential classification is medium.
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**Determination of Liquid Limit to BS1377-2:1990 CI 4.3 Cone Penetrometer (Definitive Method)  
and Determination of Plasticity Index to BS1377-2:1990 CI 5**

<b>Scheme</b>	West Winch Relief Road		
<b>Location</b>	217	<b>Depth</b>	1m
<b>Date sampled</b>	22 Jul 2020	<b>Date received</b>	22 Jul 2020
<b>Date tested</b>	12/0/8/2020		
<b>Sample type</b>	Bulk Disturbed	<b>Sample Mass (g)</b>	442

If a Sample Certificate was provided it is available for inspection.

The accuracy of information provided by third parties cannot be guaranteed.

<b>Material</b>	Soil		
<b>Description</b>	Dark grey very sandy silty CLAY. Some roots. Slight organic odour.		

<b>Supplier</b>	Not applicable	<b>Source</b>	Ex site
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	<b>Test Specimen</b>		
<b>Location</b>	Not applicable		
<b>Orientation</b>	Not applicable		

	<b>Preparation Details</b>		
<b>Method of Division</b>	Quartering		
<b>Preparation Method</b>	Wet sieving	Oven dried @ 40°C	
<b>Retained 425µm (%)</b>	7.7		

<b>Natural MC (%)</b>	44		
<b>Drying Temp. (°C)</b>	105-110		
<b>Liquid Limit (%)</b>	67		
<b>Plastic Limit (%)</b>	45		
<b>Plasticity Index (%)</b>	22		
<b>Modified PI *(%)</b>	20	*BRE Digest 240:1993.	

*This calculation is outside the scope of UKAS accreditation.*

**BS Soil Classification** M H

<b>Remarks</b>	NHBC Volume change potential classification is medium.
----------------	--

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Test Code = 604



Simon Holden (Operations Manager)



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West Yorkshire  
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Our reference No. **NNPL2020080736-604**

Our Project No **100746**

Your Sample Ref **B3**

Your Project or Order No.

Date Report Issued **19 Aug 2020**

Page 1 of 1

**Determination of Liquid Limit to BS1377-2:1990 CI 4.3 Cone Penetrometer (Definitive Method)  
and Determination of Plasticity Index to BS1377-2:1990 CI 5**

<b>Scheme</b>	West Winch Relief Road		
<b>Location</b>	217	<b>Depth</b>	2m
<b>Date sampled</b>	22 Jul 2020	<b>Date received</b>	22 Jul 2020
<b>Date tested</b>	11 Aug 2020		
<b>Sample type</b>	Bulk Disturbed	<b>Sample Mass (g)</b>	486

If a Sample Certificate was provided it is available for inspection.  
The accuracy of information provided by third parties cannot be guaranteed.

<b>Material</b>	Soil		
<b>Description</b>	Grey clayey very sandy SILT with thin beds of sandstone, weak.		

<b>Supplier</b>	Not applicable	<b>Source</b>	Ex site
-----------------	----------------	---------------	---------

<b>Location</b>	<b>Test Specimen</b>
Not applicable	Not applicable
<b>Orientation</b>	Not applicable

<b>Method of Division</b>	<b>Preparation Details</b>	
Quartered		
<b>Preparation Method</b>	Hand picking	Oven dried @ 40°C
<b>Retained 425µm (%)</b>	1.0	

<b>Natural MC (%)</b>	28	
<b>Drying Temp. (°C)</b>	105-110	
<b>Liquid Limit (%)</b>	28	
<b>Plastic Limit (%)</b>	Non Plastic	
<b>Plasticity Index (%)</b>		
<b>Modified PI *(%)</b>	*BRE Digest 240:1993. <i>This calculation is outside the scope of UKAS accreditation.</i>	

**BS Soil Classification** Non Plastic

**Remarks**

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Test Code = 604



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Our reference No. NNPL202009021-610  
Our Project No. 100746  
Your Sample Ref. 5  
Your Order No.  
Date Tested 21/09/2020  
Date Report Issued 25 Sep 2020

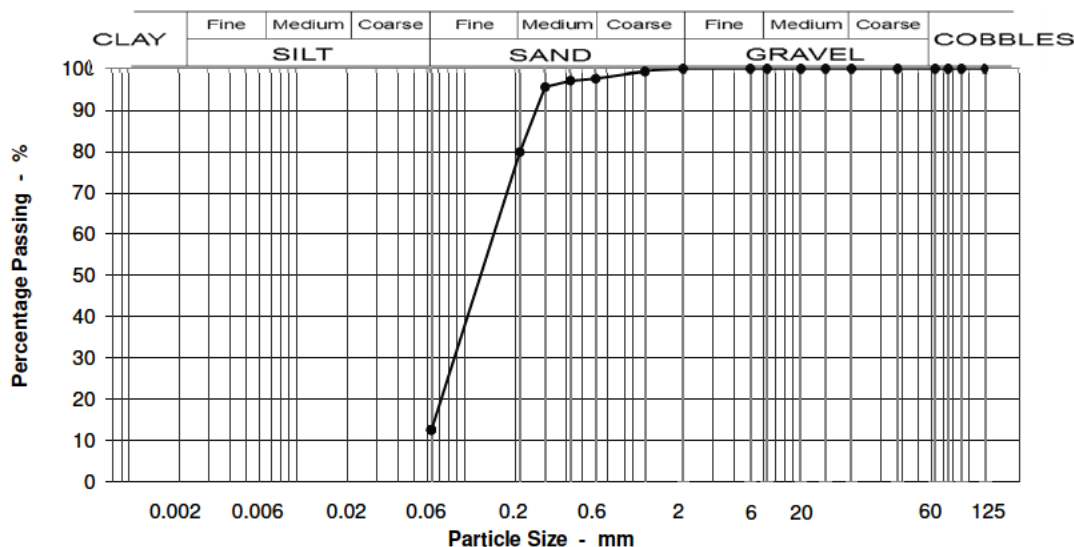
**Particle Size Distribution to BS 1377 : Part 2 :1990 Section 9**

Scheme: West Winch Relief Road

Location: 101 @ 1.2 - 2m

Location and orientation within sample not applicable

Disturbed sample



Sieving	
Particle Size mm	% Passing
125	100
90	100
75	100
63	100
37.5	100
20	100
14	100
10	100
6.3	100
5	100
2	100
1.18	99
0.600	98
0.425	97
0.300	96
0.212	80
0.063	13

Specification for Highway Works Classification  
Table 6/2  
  
This material complies with the following material classes 1B, 6E/6R, 6J.

Sample Proportions	
BOULDERS	0
COBBLES	0
Coarse GRAVEL	0
Medium GRAVEL	0
Fine GRAVEL	0
Coarse SAND	2
Medium SAND	18
Fine SAND	67
Silt & Clay	13

Grading Analysis	
D100	1
D60	0.17
D10	0.03
Uniformity Coefficient <sup>†</sup>	6

**Description**  
Orangey-brown slightly silty slightly clayey fine SAND.

Moisture content % 19  
(BS1377-Part 1, 1990)

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\* Uniformity coefficient extrapolated

† UC to Spec. For Highway Works, table 6/1 footnote 5

S  
Test Code = 610



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Our reference No. NNPL202008078-610  
Our Project No. 100746  
Your Sample Ref. 2  
Your Order No.  
Date Tested 17/08/2020  
Date Report Issued 29 Sep 2020

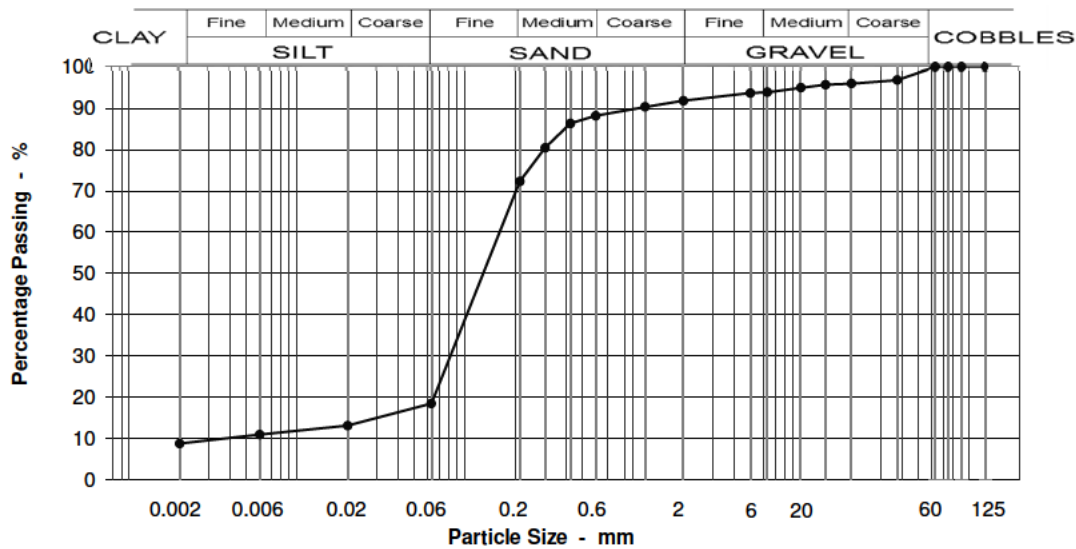
**Particle Size Distribution to BS 1377 : Part 2 :1990 Section 9**

Scheme: West Winch Relief Road

Location: 207 @ 0.5 - 0.7m

Location and orientation within sample not applicable

Bulk disturbed sample



Sieving	
Particle Size mm	% Passing
125	100
90	100
75	100
63	100
37.5	97
20	96
14	96
10	95
6.3	94
5	94
2	92
1.18	90
0.600	88
0.425	86
0.300	80
0.212	72
0.063	18
0.020	13
0.006	11
0.002	9

Specification for Highway Works Classification  
Table 6/2

This material complies with the following material classes 2A/2B.

Moisture content % (BS1377-Part 1, 1990) 10

Sample Proportions	
BOULDERS	0
COBBLES	0
Coarse GRAVEL	4
Medium GRAVEL	2
Fine GRAVEL	2
Coarse SAND	4
Medium SAND	16
Fine SAND	54
Silt & Clay	18

Grading Analysis	
D100	38
D60	0.18
D10	0.03
Uniformity Coefficient <sup>1</sup>	5

Description	
Brown slightly clayey slightly silty slightly gravelly fine SAND. Gravel is fine to coarse angular to subrounded flint.	

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\* Uniformity coefficient extrapolated

<sup>1</sup> UC to Spec. For Highway Works, table 6/1 footnote 5

S  
Test Code = 610



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Our reference No. NNPL2020080710-610  
Our Project No. 100746  
Your Sample Ref. 4  
Your Order No.  
Date Tested 17/08/2020  
Date Report Issued 29 Sep 2020

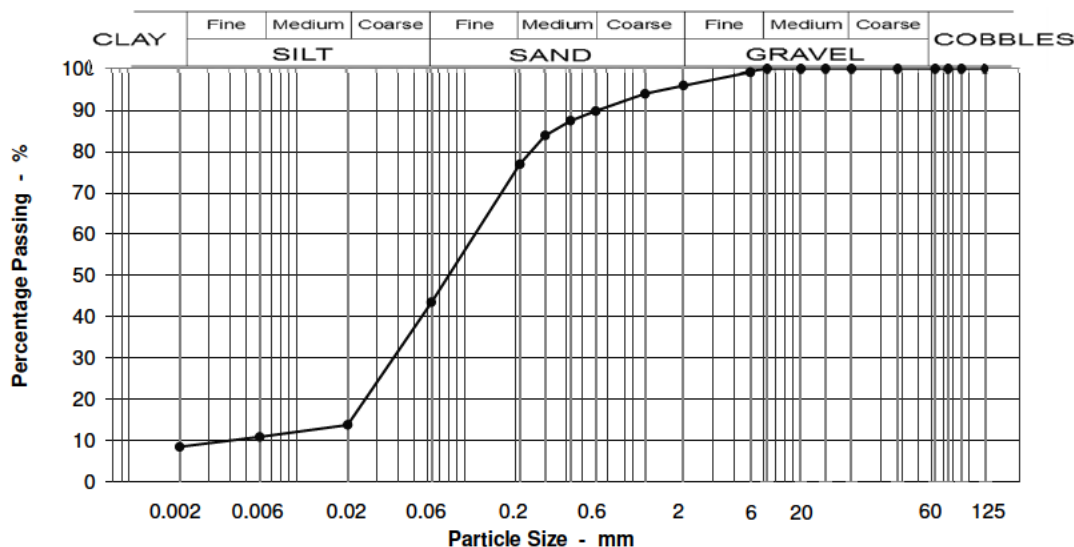
**Particle Size Distribution to BS 1377 : Part 2 :1990 Section 9**

Scheme: West Winch Relief Road

Location: 207 @ 1.9 - 2.1m

Location and orientation within sample not applicable

Bulk disturbed sample



Sieving	
Particle Size mm	% Passing
125	100
90	100
75	100
63	100
37.5	100
20	100
14	100
10	100
6.3	100
5	99
2	96
1.18	94
0.600	90
0.425	87
0.300	84
0.212	77
0.063	43
0.020	14
0.006	11
0.002	8

Specification for Highway Works Classification  
Table 6/2

This material complies with the following material classes  
2A/2B.

Moisture content %  
(BS1377-Part 1, 1990) 22

Sample Proportions	
BOULDERS	0
COBBLES	0
Coarse GRAVEL	0
Medium GRAVEL	0
Fine GRAVEL	4
Coarse SAND	6
Medium SAND	13
Fine SAND	33
Silt & Clay	43

Grading Analysis	
D100	5
D60	0.14
D10	0.03
Uniformity Coefficient <sup>1</sup>	5

**Description**  
Dark grey clayey sandy SILT with laminae and thin beds of siltstone.

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\* Uniformity coefficient extrapolated

<sup>1</sup> UC to Spec. For Highway Works, table 6/1 footnote 5

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Our reference No. NNPL2020080714-610  
Our Project No. 100746  
Your Sample Ref. 5  
Your Order No.  
Date Tested 14/08/2020  
Date Report Issued 29 Sep 2020

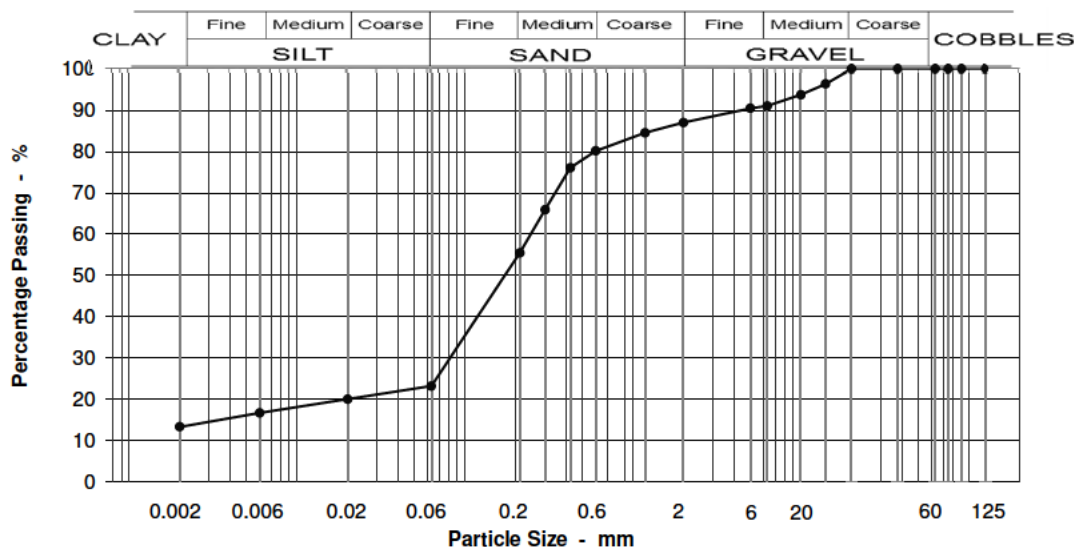
**Particle Size Distribution to BS 1377 : Part 2 :1990 Section 9**

Scheme: West Winch Relief Road

Location: 210 @ 2.1 - 2.3m

Location and orientation within sample not applicable

Bulk disturbed sample



Sieving	
Particle Size mm	% Passing
125	100
90	100
75	100
63	100
37.5	100
20	100
14	96
10	94
6.3	91
5	90
2	87
1.18	85
0.600	80
0.425	76
0.300	66
0.212	55
0.063	23
0.020	20
0.006	17
0.002	13

Specification for Highway Works Classification  
Table 6/2

This material complies with the following material classes  
2A/2B.

Moisture content % (BS1377-Part 1, 1990) 22

Sample Proportions	
BOULDERS	0
COBBLES	0
Coarse GRAVEL	0
Medium GRAVEL	9
Fine GRAVEL	4
Coarse SAND	7
Medium SAND	25
Fine SAND	32
Silt & Clay	23

Grading Analysis	
D100	14
D60	0.25
D10	0.00
Uniformity Coefficient <sup>†</sup>	>10

Description	
Grey clayey slightly silty fine to medium SAND.	

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\* Uniformity coefficient extrapolated

† UC to Spec. For Highway Works, table 6/1 footnote 5

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Our reference No. NNPL2020080716-610  
Our Project No. 100746  
Your Sample Ref. 2  
Your Order No.  
Date Tested 17/08/2020  
Date Report Issued 25 Sep 2020

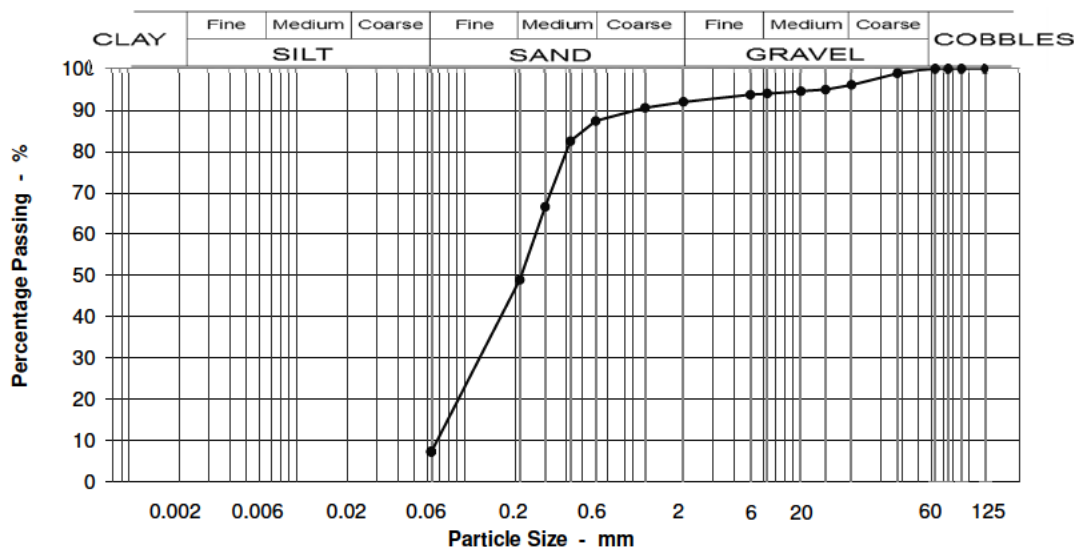
**Particle Size Distribution to BS 1377 : Part 2 :1990 Section 9**

Scheme: West Winch Relief Road

Location: 213 @ 0.5 - 0.7m

Location and orientation within sample not applicable

Bulk disturbed sample



Sieving	
Particle Size mm	% Passing
125	100
90	100
75	100
63	100
37.5	99
20	96
14	95
10	95
6.3	94
5	94
2	92
1.18	91
0.600	87
0.425	83
0.300	67
0.212	49
0.063	7

Specification for Highway Works Classification  
Table 6/2

This material complies with the following material classes 1B, 6E/6R, 6M.

Moisture content % (BS1377-Part 1, 1990) 3.2

Sample Proportions	
BOULDERS	0
COBBLES	0
Coarse GRAVEL	4
Medium GRAVEL	2
Fine GRAVEL	2
Coarse SAND	5
Medium SAND	38
Fine SAND	42
Silt & Clay	7

Grading Analysis	
D100	38
D60	0.27
D10	0.07
Uniformity Coefficient <sup>1</sup>	4

Description	
Light brown gravelly fine to medium SAND. Gravel is fine to coarse angular to subangular flint and carstone.	

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Test Code = 610



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Our reference No. NNPL2020080718-610  
Our Project No. 100746  
Your Sample Ref. 4  
Your Order No.  
Date Tested 17/08/2020  
Date Report Issued 25 Sep 2020

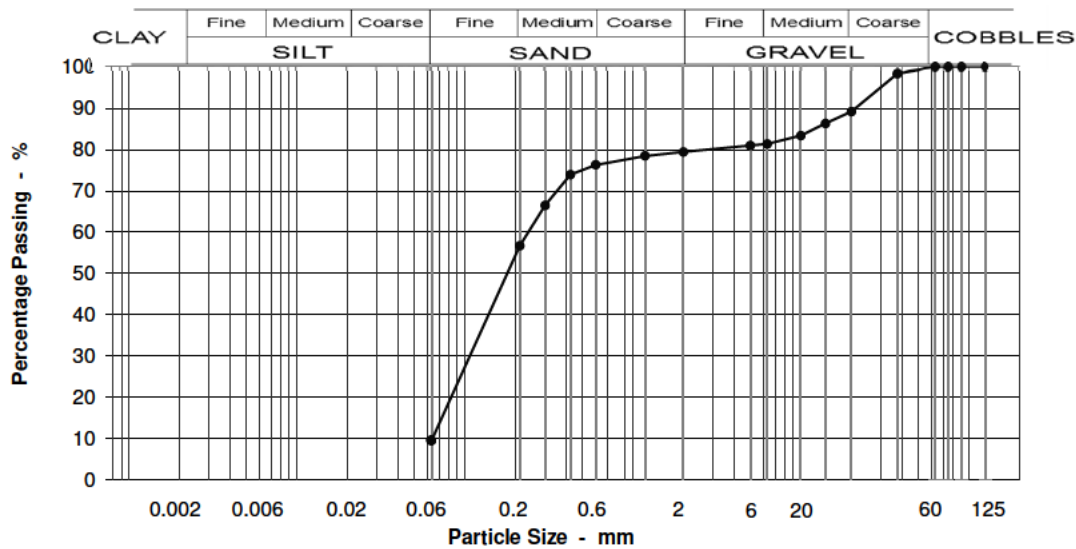
**Particle Size Distribution to BS 1377 : Part 2 :1990 Section 9**

Scheme: West Winch Relief Road

Location: 213 @ 1.7 - 1.9m

Location and orientation within sample not applicable

Bulk disturbed sample



Sieving	
Particle Size mm	% Passing
125	100
90	100
75	100
63	100
37.5	98
20	89
14	86
10	83
6.3	81
5	81
2	79
1.18	78
0.600	76
0.425	74
0.300	66
0.212	57
0.063	10

Specification for Highway Works Classification  
Table 6/2

This material complies with the following material classes 1B, 6E/6R, 6M.

Moisture content % (BS1377-Part 1, 1990) 17

Sample Proportions	
BOULDERS	0
COBBLES	0
Coarse GRAVEL	11
Medium GRAVEL	8
Fine GRAVEL	2
Coarse SAND	3
Medium SAND	20
Fine SAND	47
Silt & Clay	10

Grading Analysis	
D100	38
D60	0.24
D10	0.06
Uniformity Coefficient <sup>1</sup>	4

Description	
Brown gravelly silty fine SAND with lenses of soft light grey clay. Gravel is medium to coarse subangular to subrounded ironstone.	

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Our reference No. NNPL2020080721-610  
Our Project No. 100746  
Your Sample Ref. 2  
Your Order No.  
Date Tested 14/08/2020  
Date Report Issued 29 Sep 2020

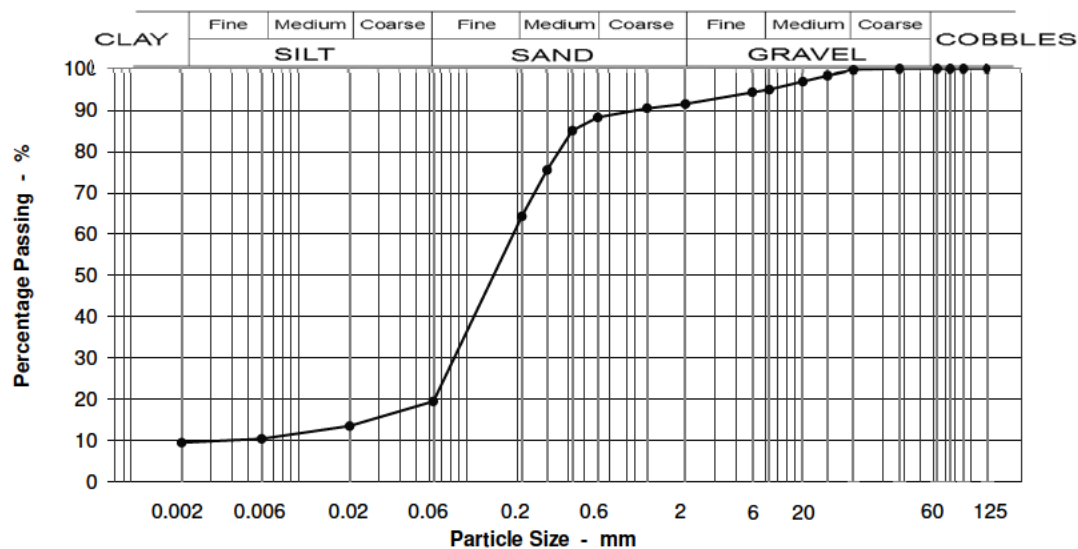
**Particle Size Distribution to BS 1377 : Part 2 :1990 Section 9**

Scheme: West Winch Relief Road

Location: 214 @ 0.5 - 0.7m

Location and orientation within sample not applicable

Bulk disturbed sample



Sieving	
Particle Size mm	% Passing
125	100
90	100
75	100
63	100
37.5	100
20	100
14	98
10	97
6.3	95
5	94
2	92
1.18	90
0.600	88
0.425	85
0.300	76
0.212	64
0.063	19
0.020	14
0.006	10
0.002	9

Specification for Highway Works Classification  
Table 6/2

This material complies with the following material classes  
2A/2B.

Moisture content %  
(BS1377-Part 1, 1990) 14

Sample Proportions	
BOULDERS	0
COBBLES	0
Coarse GRAVEL	0
Medium GRAVEL	5
Fine GRAVEL	3
Coarse SAND	3
Medium SAND	24
Fine SAND	45
Silt & Clay	19

Grading Analysis	
D100	20
D60	0.20
D10	0.04
Uniformity Coefficient <sup>1</sup>	5

Description	
Orangey-brown slightly clayey silty gravelly fine and medium SAND. Gravel is fine to medium angular to subrounded flint.	

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\* Uniformity coefficient extrapolated

<sup>1</sup> UC to Spec. For Highway Works, table 6/1 footnote 5

S  
Test Code = 610



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Our reference No. NNPL2020080725-610  
Our Project No. 100746  
Your Sample Ref. 2  
Your Order No.  
Date Tested 17/08/2020  
Date Report Issued 25 Sep 2020

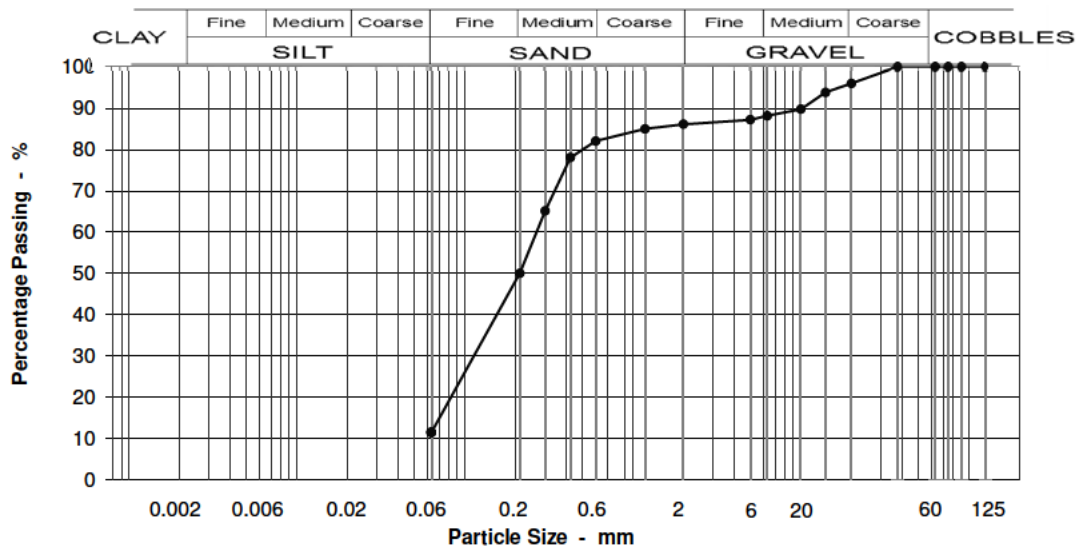
**Particle Size Distribution to BS 1377 : Part 2 :1990 Section 9**

Scheme: West Winch Relief Road

Location: 215 @ 0.5 - 0.7m

Location and orientation within sample not applicable

Bulk disturbed sample



Sieving	
Particle Size mm	% Passing
125	100
90	100
75	100
63	100
37.5	100
20	96
14	94
10	90
6.3	88
5	87
2	86
1.18	85
0.600	82
0.425	78
0.300	65
0.212	50
0.063	12

Specification for Highway Works Classification  
Table 6/2

This material complies with the following material classes 1B, 6E/6R, 6J.

Moisture content % (BS1377-Part 1, 1990) 9.7

Sample Proportions	
BOULDERS	0
COBBLES	0
Coarse GRAVEL	4
Medium GRAVEL	8
Fine GRAVEL	2
Coarse SAND	4
Medium SAND	32
Fine SAND	39
Silt & Clay	12

Grading Analysis	
D100	20
D60	0.27
D10	0.04
Uniformity Coefficient <sup>†</sup>	6

Description
Orangey-brown clayey gravelly fine to medium SAND. Gravel is medium to coarse angular to subrounded flint.

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\* Uniformity coefficient extrapolated

† UC to Spec. For Highway Works, table 6/1 footnote 5

S  
Test Code = 610



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LS11 1ED

Our reference No. NNPL2020080734-610  
Our Project No. 100746  
Your Sample Ref. 6  
Your Order No.  
Date Tested 17/08/2020  
Date Report Issued 25 Sep 2020

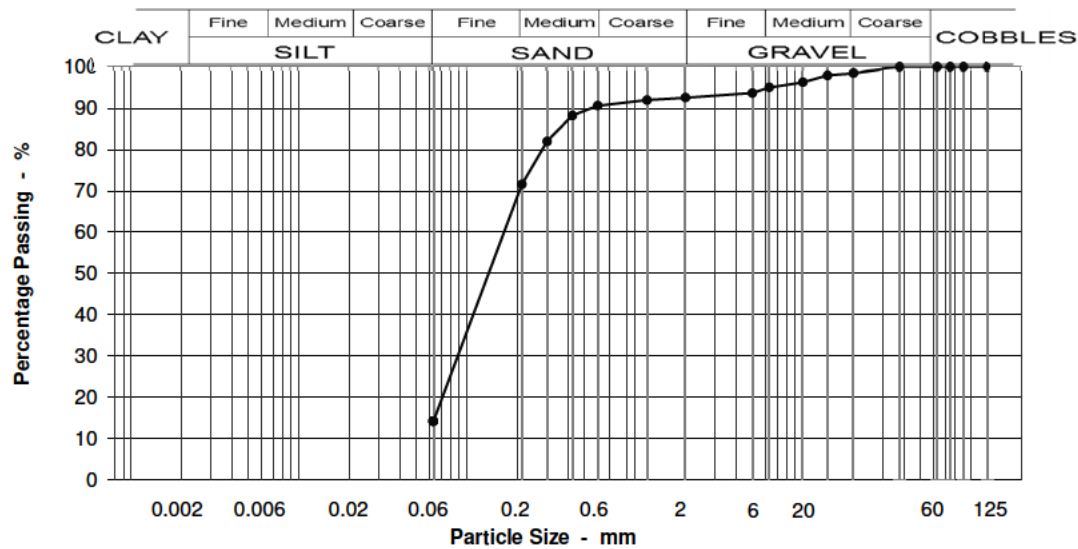
**Particle Size Distribution to BS 1377 : Part 2 :1990 Section 9**

Scheme: West Winch Relief Road

Location: 216 @ 2 - 2.5m

Location and orientation within sample not applicable

Bulk disturbed sample



Sieving	
Particle Size mm	% Passing
125	100
90	100
75	100
63	100
37.5	100
20	98
14	98
10	96
6.3	95
5	94
2	93
1.18	92
0.600	91
0.425	88
0.300	82
0.212	72
0.063	14

Specification for Highway Works Classification  
Table 6/2

This material complies with the following material classes 1B, 6E/6R, 6J.

Moisture content % (BS1377-Part 1, 1990) 22

Sample Proportions	
BOULDERS	0
COBBLES	0
Coarse GRAVEL	2
Medium GRAVEL	3
Fine GRAVEL	2
Coarse SAND	2
Medium SAND	19
Fine SAND	57
Silt & Clay	14

Grading Analysis	
D100	20
D60	0.18
D10	0.03
Uniformity Coefficient <sup>1</sup>	6

Description	
Grey clayey silty fine SAND.	

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\* Uniformity coefficient extrapolated

<sup>1</sup> UC to Spec. For Highway Works, table 6/1 footnote 5

S  
Test Code = 610



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Our reference No. NNPL2020080736-610  
Our Project No. 100746  
Your Sample Ref. 3  
Your Order No.  
Date Tested 17/08/2020  
Date Report Issued 25 Sep 2020

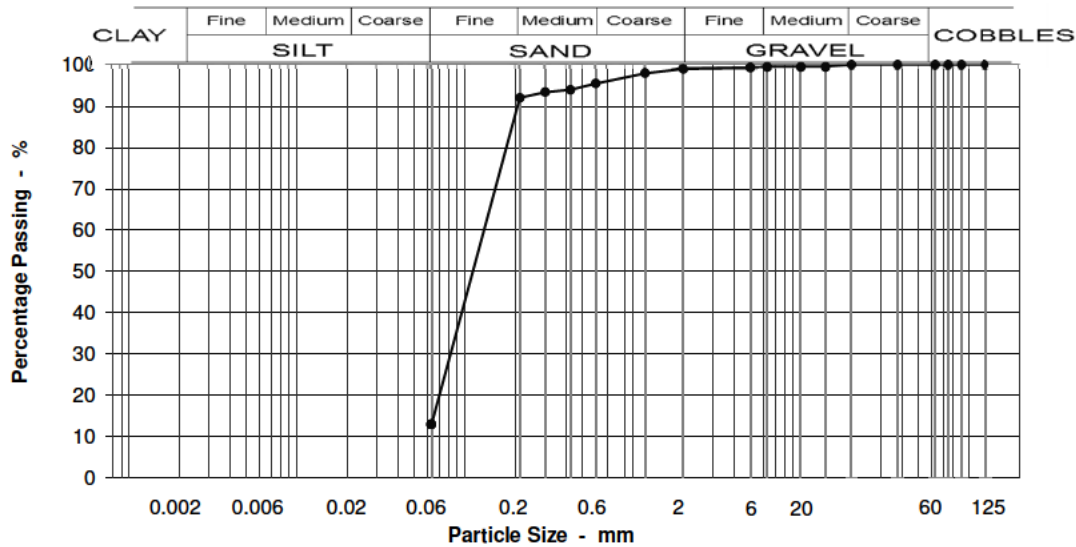
**Particle Size Distribution to BS 1377 : Part 2 :1990 Section 9**

Scheme: West Winch Relief Road

Location: 217 @ 2 - 2.3m

Location and orientation within sample not applicable

Bulk disturbed sample



Sieving	
Particle Size mm	% Passing
125	100
90	100
75	100
63	100
37.5	100
20	100
14	100
10	100
6.3	100
5	99
2	99
1.18	98
0.600	96
0.425	94
0.300	93
0.212	92
0.063	13

Specification for Highway Works Classification  
Table 6/2

This material complies with the following material classes 1B, 6E/6R, 6J.

Moisture content % 27  
(BS1377-Part 1, 1990)

Sample Proportions	
BOULDERS	0
COBBLES	0
Coarse GRAVEL	0
Medium GRAVEL	0
Fine GRAVEL	0
Coarse SAND	4
Medium SAND	3
Fine SAND	79
Silt & Clay	13

Grading Analysis	
D100	14
D60	0.15
D10	0.02
Uniformity Coefficient <sup>1</sup>	6

Description
Grey clayey silty fine SAND.

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\* Uniformity coefficient extrapolated

<sup>1</sup> UC to Spec. For Highway Works, table 6/1 footnote 5

S  
Test Code = 610



Simon Holden (Operations Manager)



Results from Site Observation

Scheme:	West Winch
Project No	100746
Borehole No.	WS102
Depth of Borehole (m)=	5.00
Diameter (m)=	0.10
Depth of casing (m)	0.00
Depth to water (m)	4.90
No of runs	1

Note: if dry enter BH depth

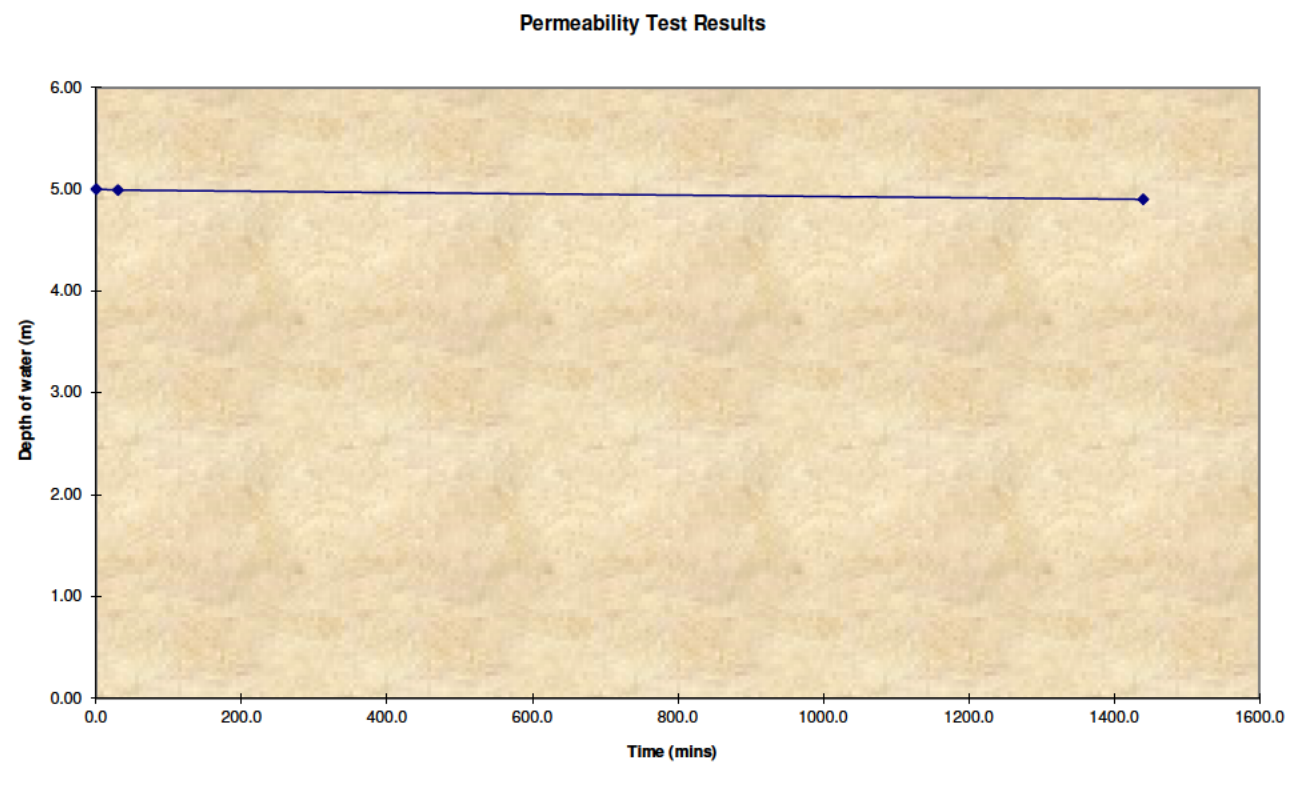
Time of Emptying of Soakaway  
(Values to be checked on chart)

% Full	25% Empty	50% Empty	75% Empty
Depth of Water (m)	3.7750	2.5500	1.3250
Time (mins)	19065	38257	57448

Gravel fill	Yes
Voids %	39.9

<b>Infiltration Rate</b>
4.4E-09 m/sec

Minutes	Depth of Water (m)	Depth Below E.G.L.(m)
0.0	5.00	0.00
30.0	4.99	0.01
1440.0	4.90	0.10



Results from Site Observation

Scheme:	West Winch
Project No	100746
Borehole No.	WS103
Depth of Borehole (m)=	5.00
Diameter (m)=	0.10
Depth of casing (m)	0.00
Depth to water (m)	1.50
No of runs	3

Note: if dry enter BH depth

Time of Emptying of Soakaway  
(Values to be checked on chart)

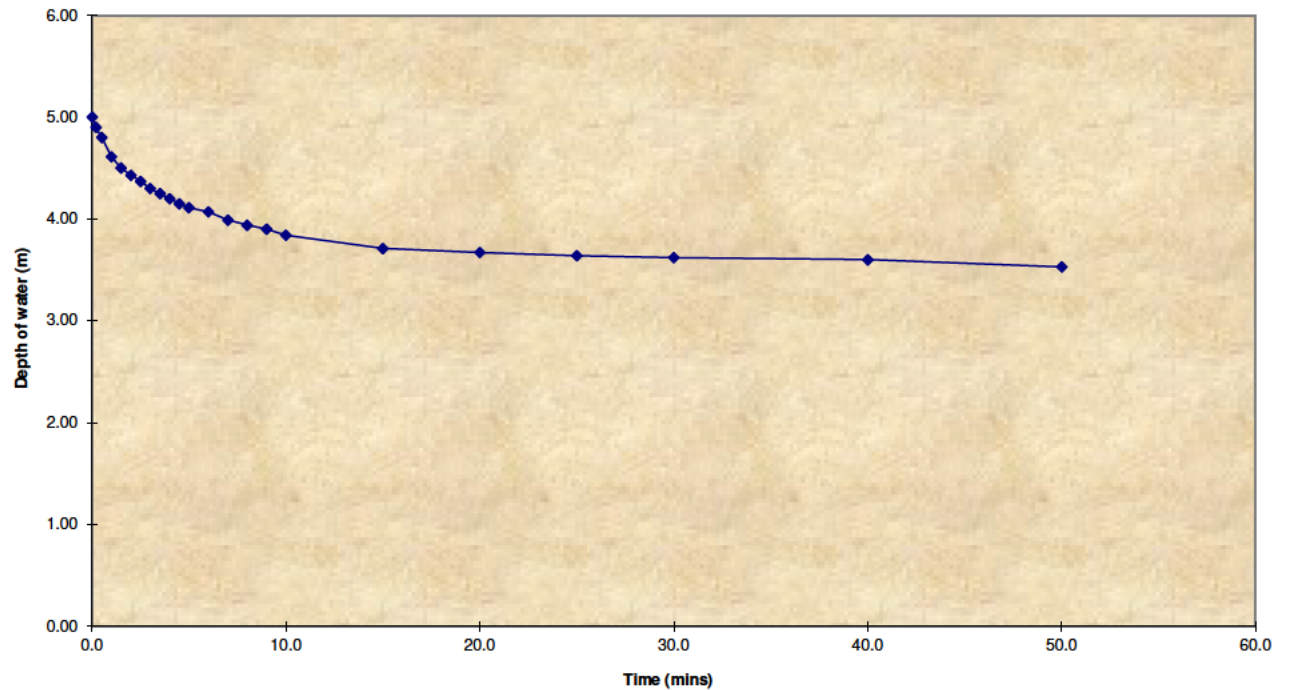
% Full	25% Empty	50% Empty	75% Empty
Depth of Water (m)	4.6250	4.2500	3.8750
Time (mins)	1	4	9

Gravel fill	Yes
Voids %	39.9

<b>Infiltration Rate</b>
2.0E-05 m/sec

Minutes	Depth of Water (m)	Depth Below E.G.L.(m)
0.0	5.00	0.00
0.2	4.90	0.10
0.5	4.80	0.20
1.0	4.61	0.39
1.5	4.50	0.50
2.0	4.43	0.57
2.5	4.37	0.63
3.0	4.30	0.70
3.5	4.25	0.75
4.0	4.20	0.80
4.5	4.15	0.85
5.0	4.11	0.89
6.0	4.07	0.93
7.0	3.99	1.01
8.0	3.94	1.06
9.0	3.90	1.10
10.0	3.84	1.16
15.0	3.71	1.29
20.0	3.67	1.33
25.0	3.64	1.36
30.0	3.62	1.38
40.0	3.60	1.40
50.0	3.53	1.47

Permeability Test Results



**Results from Site Observation**

Scheme:	<b>West Winch</b>
Project No	<b>100746</b>
Borehole No.	<b>WS103</b>
Depth of Borehole (m)=	5.00
Diameter (m)=	0.10
Depth of casing (m)	0.00
Depth to water (m)	1.50
No of runs	3

Note: if dry enter BH depth

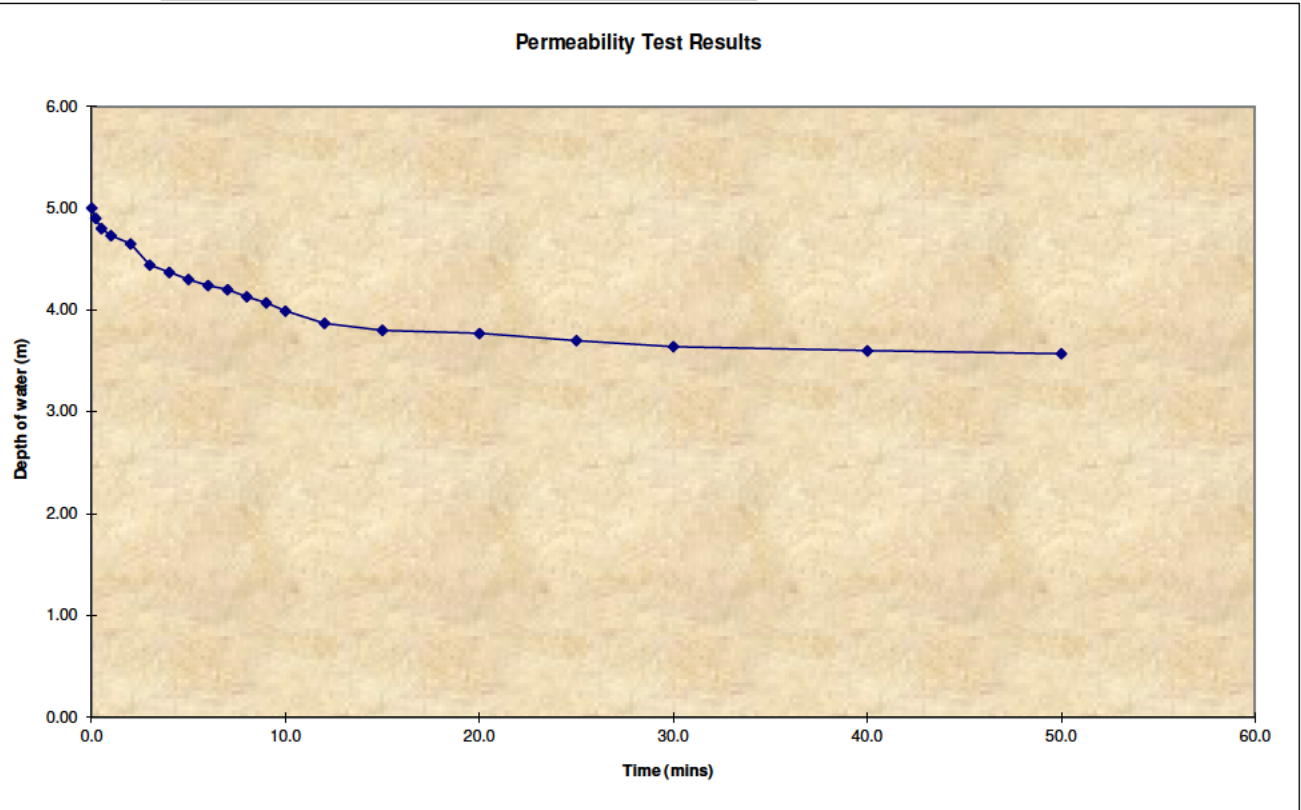
Gravel fill	Yes
Voids %	39.9

**Time of Emptying of Soakaway**  
(Values to be checked on chart)

% Full	25% Empty	50% Empty	75% Empty
Depth of Water (m)	4.6250	4.2500	3.8750
Time (mins)	2	6	12

<b>Infiltration Rate</b>	Mean	Min
1.7E-05 m/sec	1.8E-05	1.7E-05

Minutes	Depth of Water (m)	Depth Below E.G.L.(m)
0.0	5.00	0.00
0.2	4.90	0.10
0.5	4.80	0.20
1.0	4.73	0.27
2.0	4.65	0.35
3.0	4.44	0.56
4.0	4.37	0.63
5.0	4.30	0.70
6.0	4.24	0.76
7.0	4.20	0.80
8.0	4.13	0.87
9.0	4.07	0.93
10.0	3.99	1.01
12.0	3.87	1.13
15.0	3.80	1.20
20.0	3.77	1.23
25.0	3.70	1.30
30.0	3.64	1.36
40.0	3.60	1.40
50.0	3.57	1.43



Results from Site Observation

Scheme:	West Winch
Project No	100746
Borehole No.	WS103
Depth of Borehole (m)=	5.00
Diameter (m)=	0.10
Depth of casing (m)	0.00
Depth to water (m)	1.50
No of runs	3

Note: if dry enter BH depth

Time of Emptying of Soakaway

(Values to be checked on chart)

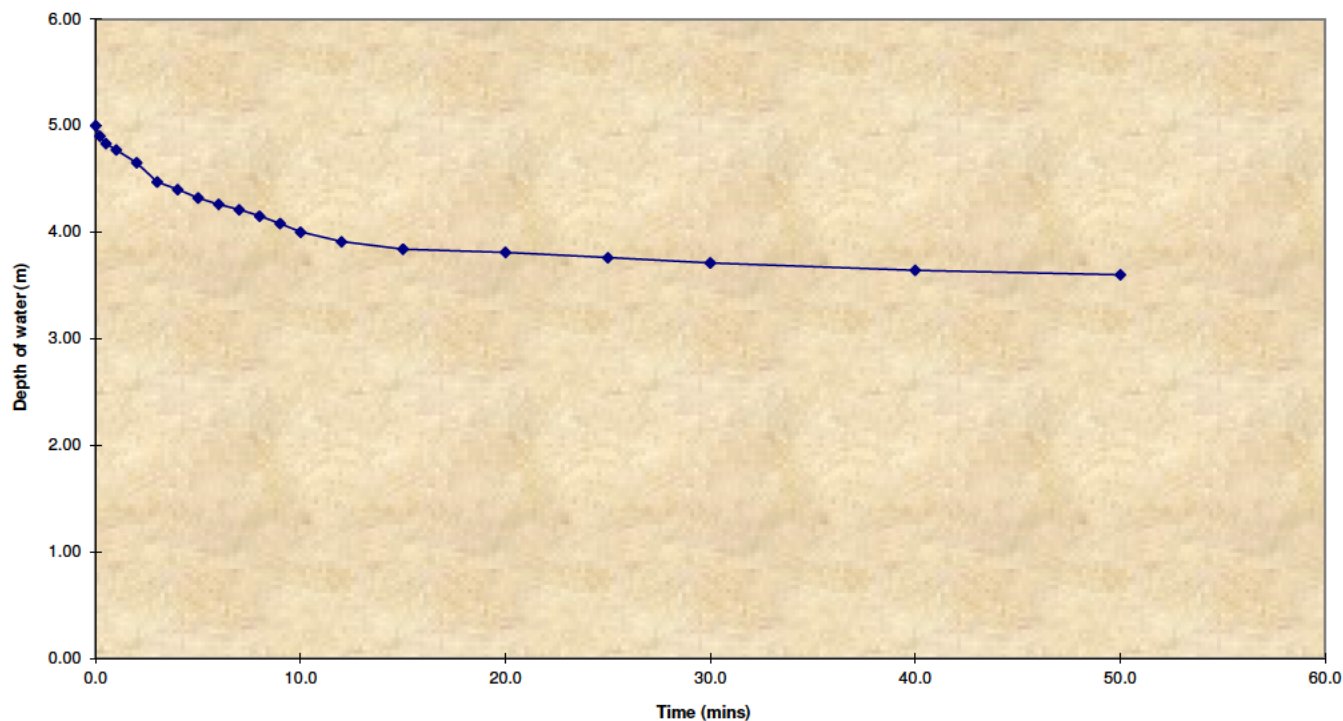
% Full	25% Empty	50% Empty	75% Empty
Depth of Water (m)	4.6250	4.2500	3.8750
Time (mins)	2	6	14

Gravel fill	Yes
Voids %	39.9

Infiltration Rate	Mean	Min
1.5E-05 m/sec	1.7E-05	1.5E-05

Minutes	Depth of Water (m)	Depth Below E.G.L.(m)
0.0	5.00	0.00
0.2	4.90	0.10
0.5	4.83	0.17
1.0	4.77	0.23
2.0	4.65	0.35
3.0	4.47	0.53
4.0	4.40	0.60
5.0	4.32	0.68
6.0	4.26	0.74
7.0	4.21	0.79
8.0	4.15	0.85
9.0	4.08	0.92
10.0	4.00	1.00
12.0	3.91	1.09
15.0	3.84	1.16
20.0	3.81	1.19
25.0	3.76	1.24
30.0	3.71	1.29
40.0	3.64	1.36
50.0	3.60	1.40

Permeability Test Results



Results from Site Observation

Scheme:	West Winch
Project No	100746
Borehole No.	WS105
Depth of Borehole (m)=	5.00
Diameter (m)=	0.10
Depth of casing (m)	0.00
Depth to water (m)	3.25
No of runs	3

Note: if dry enter BH depth

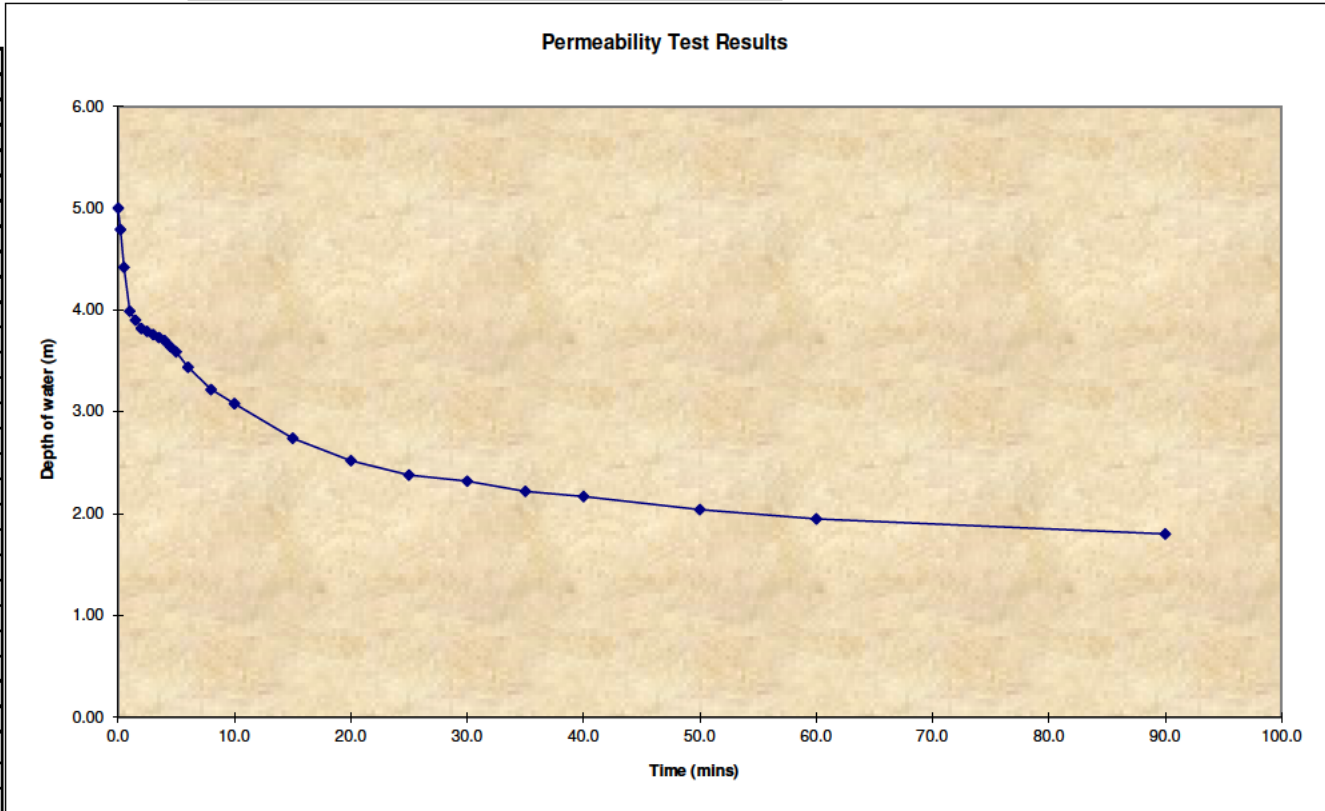
Time of Emptying of Soakaway  
(Values to be checked on chart)

% Full	25% Empty	50% Empty	75% Empty
Depth of Water (m)	4.1875	3.3750	2.5625
Time (mins)	1	7	19

Gravel fill	Yes
Voids %	39.9

<b>Infiltration Rate</b>
9.2E-06 m/sec

Minutes	Depth of Water (m)	Depth Below E.G.L.(m)
0.0	5.00	0.00
0.2	4.79	0.21
0.5	4.42	0.58
1.0	3.99	1.01
1.5	3.90	1.10
2.0	3.82	1.18
2.5	3.79	1.21
3.0	3.76	1.24
3.5	3.73	1.27
4.0	3.70	1.30
4.5	3.64	1.36
5.0	3.59	1.41
6.0	3.44	1.56
8.0	3.22	1.78
10.0	3.08	1.92
15.0	2.74	2.26
20.0	2.52	2.48
25.0	2.38	2.62
30.0	2.32	2.68
35.0	2.22	2.78
40.0	2.17	2.83
50.0	2.04	2.96
60.0	1.95	3.05
90.0	1.80	3.20



Results from Site Observation

Scheme:	West Winch
Project No	100746
Borehole No.	WS105
Depth of Borehole (m)=	5.00
Diameter (m)=	0.10
Depth of casing (m)	0.00
Depth to water (m)	3.25
No of runs	3

Note: if dry enter BH depth

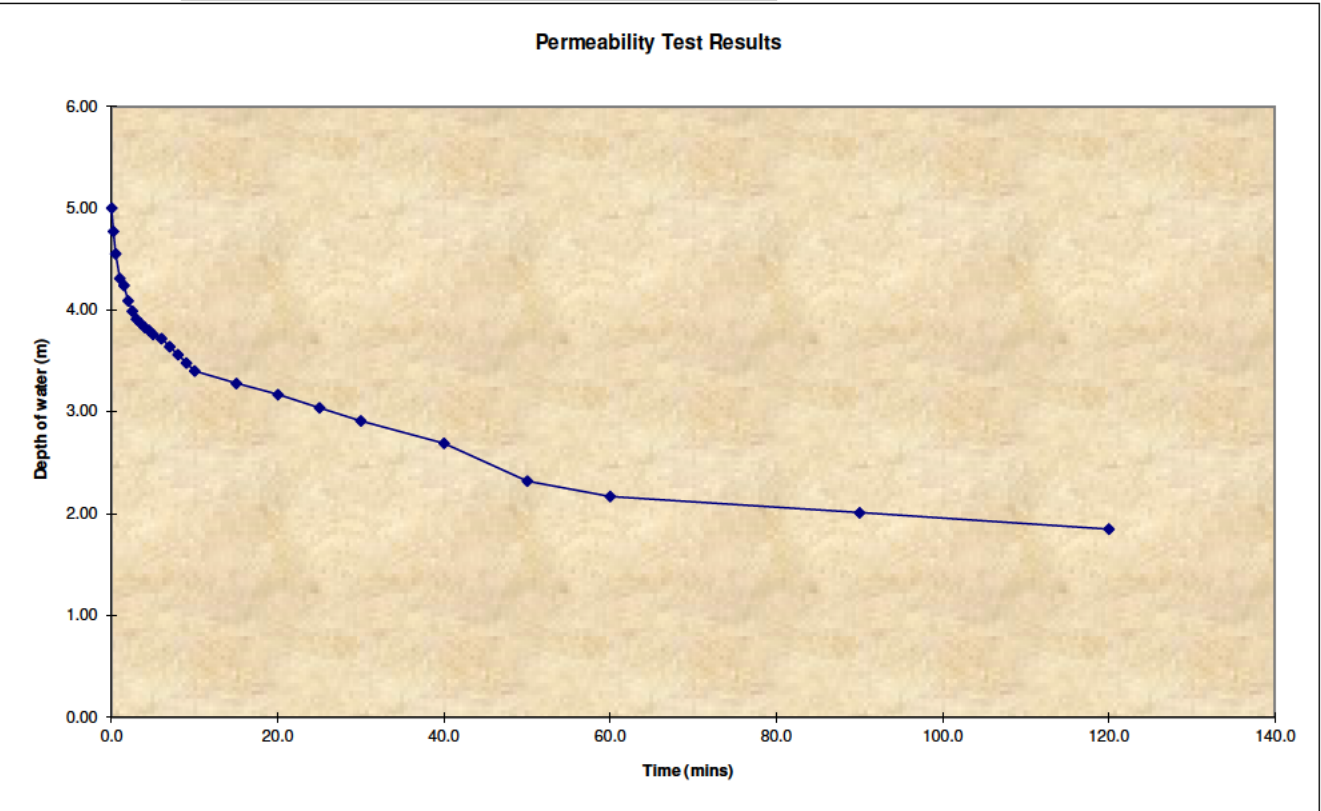
Time of Emptying of Soakaway  
(Values to be checked on chart)

% Full	25% Empty	50% Empty	75% Empty
Depth of Water (m)	4.1875	3.3750	2.5625
Time (mins)	2	11	43

Gravel fill	Yes
Voids %	39.9

Infiltration Rate	Mean	Min
4.0E-06 m/sec	5.6E-06	4.0E-06

Minutes	Depth of Water (m)	Depth Below E.G.L.(m)
0.0	5.00	0.00
0.2	4.77	0.23
0.5	4.55	0.45
1.0	4.31	0.69
1.5	4.24	0.76
2.0	4.09	0.91
2.5	3.99	1.01
3.0	3.91	1.09
3.5	3.87	1.13
4.0	3.83	1.17
4.5	3.80	1.20
5.0	3.76	1.24
6.0	3.72	1.28
7.0	3.64	1.36
8.0	3.56	1.44
9.0	3.48	1.52
10.0	3.40	1.60
15.0	3.28	1.72
20.0	3.17	1.83
25.0	3.04	1.96
30.0	2.91	2.09
40.0	2.69	2.31
50.0	2.32	2.68
60.0	2.17	2.83
90.0	2.01	2.99
120.0	1.85	3.15



Test Results Run 3

Results from Site Observation

Scheme:	West Winch
Project No	100746
Borehole No.	WS105
Depth of Borehole (m)=	5.00
Diameter (m)=	0.10
Depth of casing (m)	0.00
Depth to water (m)	3.25
No of runs	3

Note: if dry enter BH depth

Time of Emptying of Soakaway

(Values to be checked on chart)

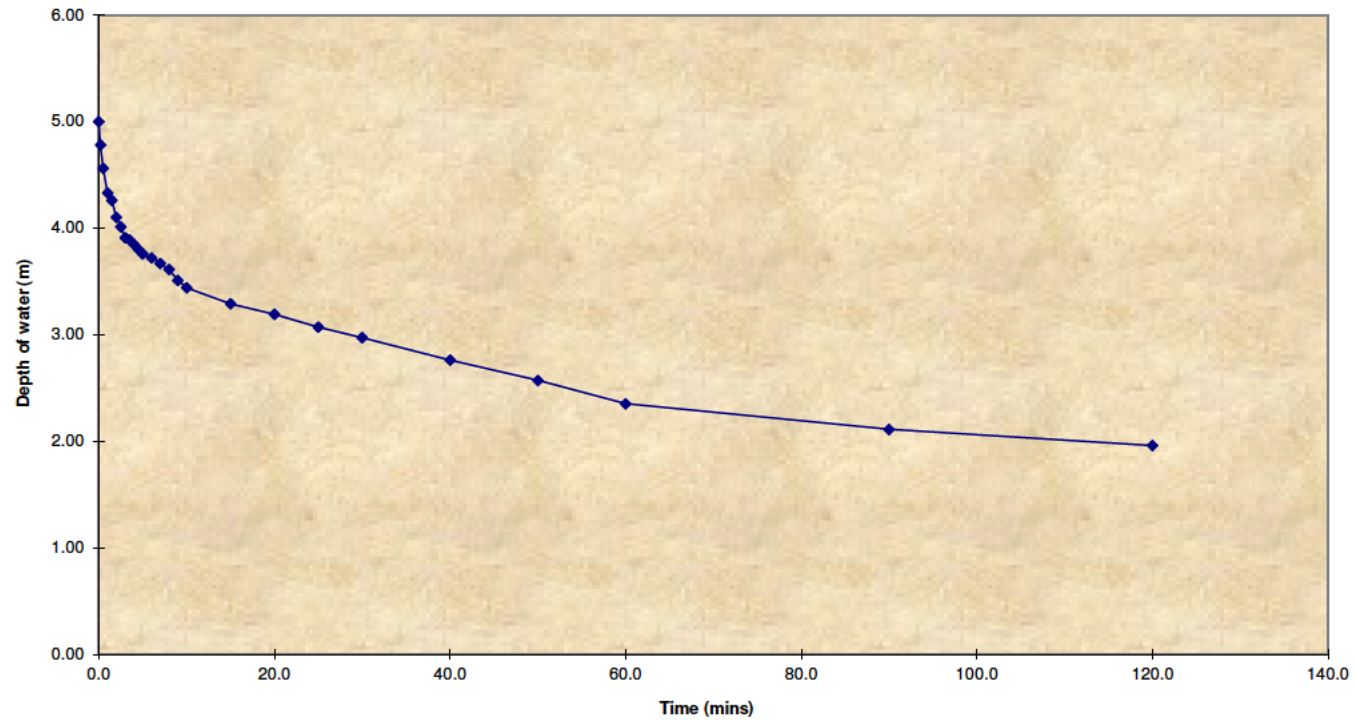
% Full	25% Empty	50% Empty	75% Empty
Depth of Water (m)	4.1875	3.3750	2.5625
Time (mins)	2	12	50

Gravel fill	Yes
Voids %	39.9

<b>Infiltration Rate</b>	<b>Mean</b>	<b>Min</b>
3.5E-06 m/sec	4.6E-06	3.5E-06

Minutes	Depth of Water (m)	Depth Below E.G.L.(m)
0.0	5.00	0.00
0.2	4.78	0.22
0.5	4.56	0.44
1.0	4.33	0.67
1.5	4.26	0.74
2.0	4.10	0.90
2.5	4.01	0.99
3.0	3.91	1.09
3.5	3.89	1.11
4.0	3.85	1.15
4.5	3.80	1.20
5.0	3.76	1.24
6.0	3.72	1.28
7.0	3.67	1.33
8.0	3.61	1.39
9.0	3.51	1.49
10.0	3.44	1.56
15.0	3.29	1.71
20.0	3.19	1.81
25.0	3.07	1.93
30.0	2.97	2.03
40.0	2.76	2.24
50.0	2.57	2.43
60.0	2.35	2.65
90.0	2.11	2.89
120.0	1.96	3.04

Permeability Test Results





**Results from Site Observation**

Scheme:	West Winch
Project No	100746
Borehole No.	WS107
Depth of Borehole (m)=	5.00
Diameter (m)=	0.10
Depth of casing (m)	0.00
Depth to water (m)	1.70
No of runs	3

Note: if dry enter BH depth

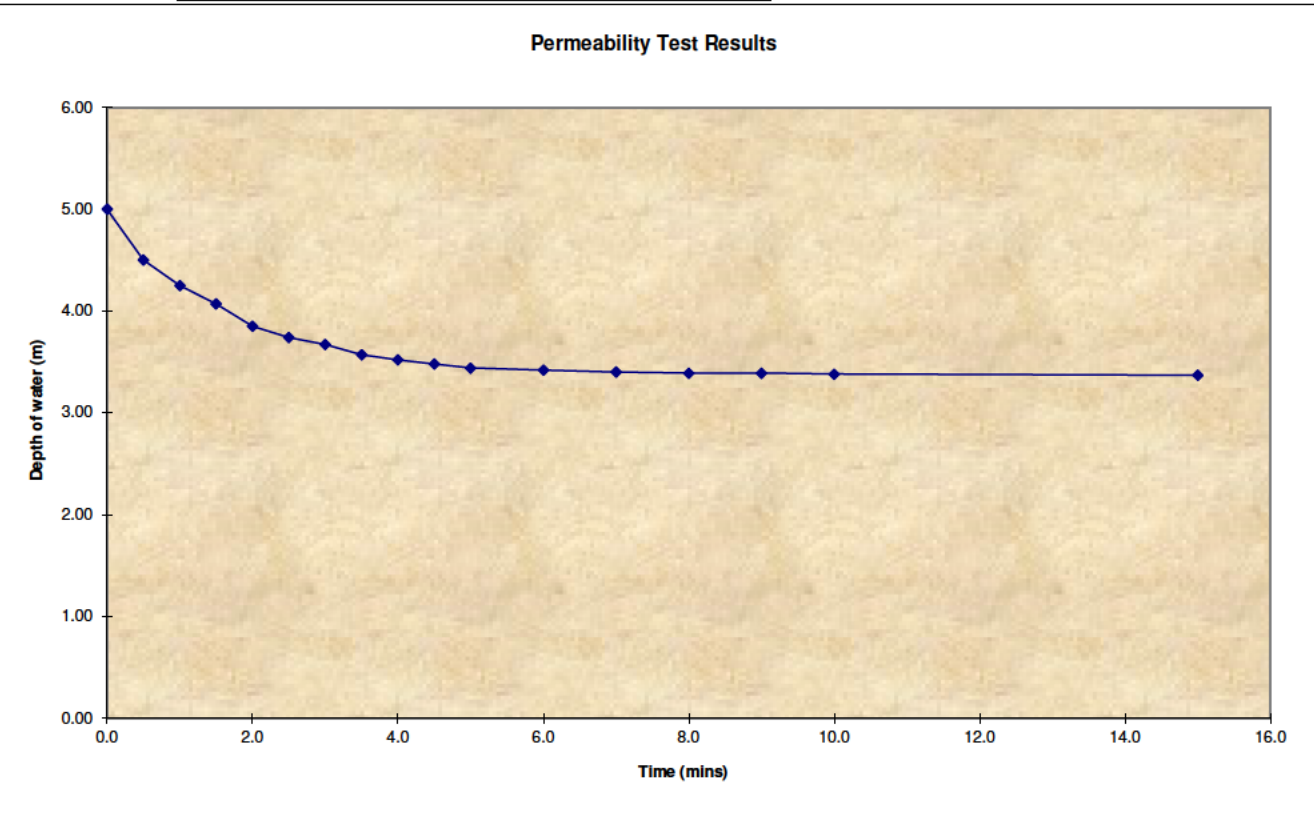
**Time of Emptying of Soakaway**  
(Values to be checked on chart)

% Full	25% Empty	50% Empty	75% Empty
Depth of Water (m)	4.5750	4.1500	3.7250
Time (mins)	0	1	3

Gravel fill	Yes
Voids %	39.9

<b>Infiltration Rate</b>
7.7E-05 m/sec

Minutes	Depth of Water (m)	Depth Below E.G.L.(m)
0.0	5.00	0.00
0.5	4.50	0.50
1.0	4.25	0.75
1.5	4.07	0.93
2.0	3.85	1.15
2.5	3.74	1.26
3.0	3.67	1.33
3.5	3.57	1.43
4.0	3.52	1.48
4.5	3.48	1.52
5.0	3.44	1.56
6.0	3.42	1.58
7.0	3.40	1.60
8.0	3.39	1.61
9.0	3.39	1.61
10.0	3.38	1.62
15.0	3.37	1.63



Results from Site Observation

Scheme:	West Winch
Project No	100746
Borehole No.	WS107
Depth of Borehole (m)=	5.00
Diameter (m)=	0.10
Depth of casing (m)	0.00
Depth to water (m)	1.70
No of runs	3

Note: if dry enter BH depth

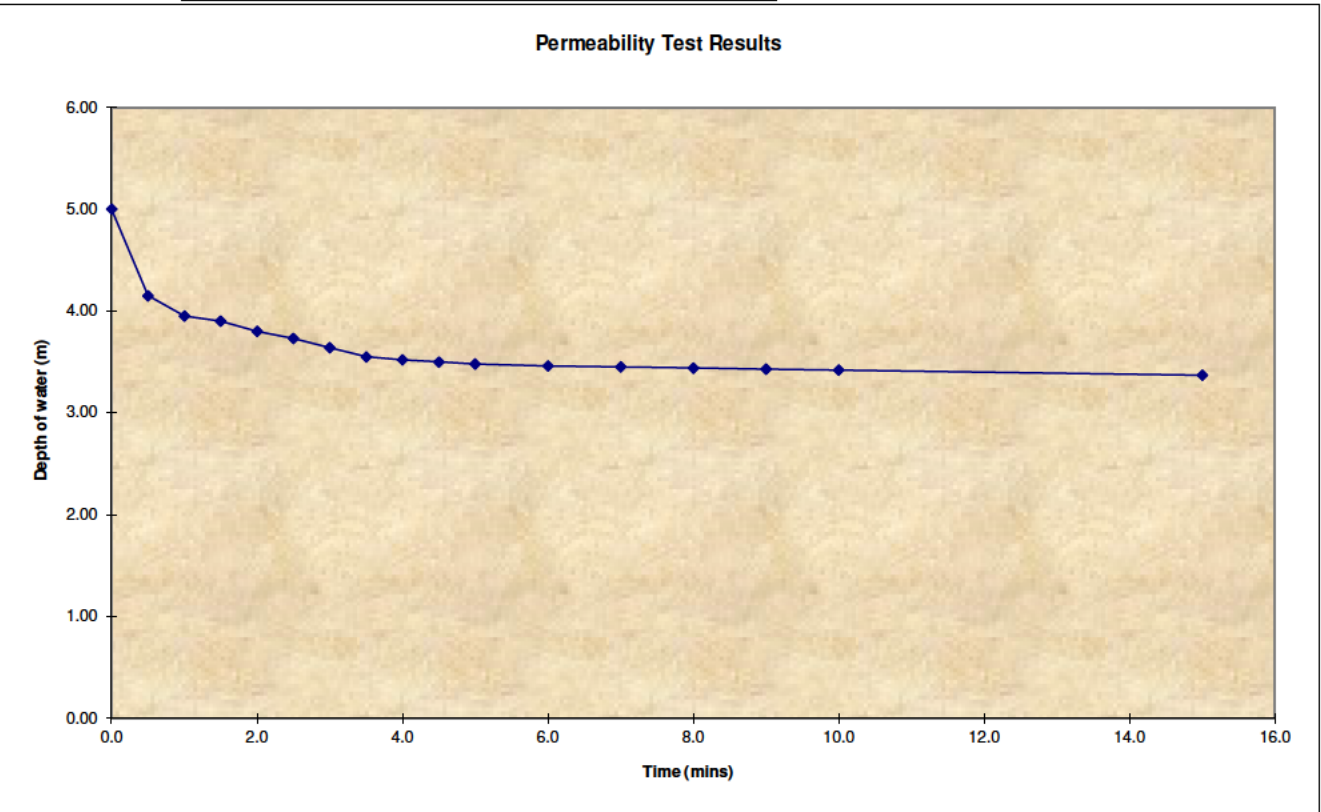
Time of Emptying of Soakaway  
(Values to be checked on chart)

% Full	25% Empty	50% Empty	75% Empty
Depth of Water (m)	4.5750	4.1500	3.7250
Time (mins)	0	1	3

Gravel fill	Yes
Voids %	39.9

Infiltration Rate	Mean	Min
7.4E-05 m/sec	7.5E-05	7.4E-05

Minutes	Depth of Water (m)	Depth Below E.G.L. (m)
0.0	5.00	0.00
0.5	4.15	0.85
1.0	3.95	1.05
1.5	3.90	1.10
2.0	3.80	1.20
2.5	3.73	1.27
3.0	3.64	1.36
3.5	3.55	1.45
4.0	3.52	1.48
4.5	3.50	1.50
5.0	3.48	1.52
6.0	3.46	1.54
7.0	3.45	1.55
8.0	3.44	1.56
9.0	3.43	1.57
10.0	3.42	1.58
15.0	3.37	1.63



Test Results Run 3

Results from Site Observation

Scheme:	West Winch
Project No	100746
Borehole No.	WS107
Depth of Borehole (m)=	5.00
Diameter (m)=	0.10
Depth of casing (m)	0.00
Depth to water (m)	1.70
No of runs	3

Note: if dry enter BH depth

Time of Emptying of Soakaway

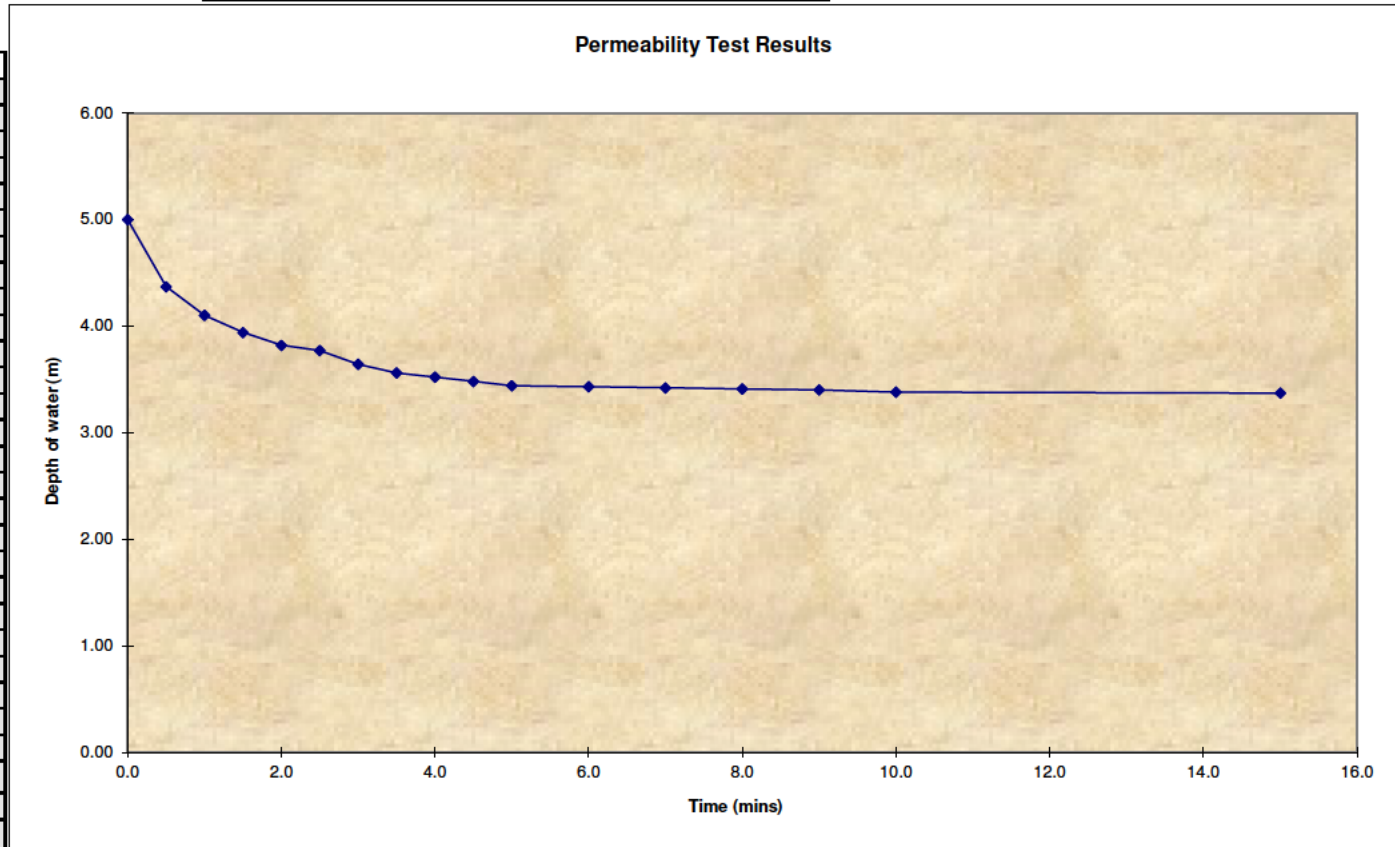
(Values to be checked on chart)

% Full	25% Empty	50% Empty	75% Empty
Depth of Water (m)	4.5750	4.1500	3.7250
Time (mins)	0	1	3

Gravel fill	Yes
Voids %	39.9

Infiltration Rate	Mean	Min
7.2E-05 m/sec	7.4E-05	7.2E-05

Minutes	Depth of Water (m)	Depth Below E.G.L.(m)
0.0	5.00	0.00
0.5	4.37	0.63
1.0	4.10	0.90
1.5	3.94	1.06
2.0	3.82	1.18
2.5	3.77	1.23
3.0	3.64	1.36
3.5	3.56	1.44
4.0	3.52	1.48
4.5	3.48	1.52
5.0	3.44	1.56
6.0	3.43	1.57
7.0	3.42	1.58
8.0	3.41	1.59
9.0	3.40	1.60
10.0	3.38	1.62
15.0	3.37	1.63



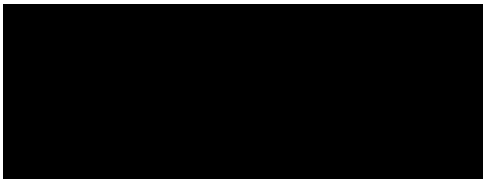
## FINAL ANALYTICAL TEST REPORT

**Envirolab Job Number:** 20/06509  
**Issue Number:** 1  
**Date:** 14 August, 2020

**Client:** Norse Eastern Ltd t/a Norse Highways  
280 Fifers Lane  
Norwich  
Norfolk  
NR6 6EQ

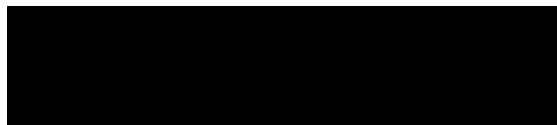
**Project Manager:** Civil Lab/Sharon Woods; Simon Holden  
**Project Name:** West Winch By Pass  
**Project Ref:** 100746  
**Order No:** PN05006788  
**Date Samples Received:** 06/08/20  
**Date Instructions Received:** 06/08/20  
**Date Analysis Completed:** 14/08/20

**Prepared by:**



Sophie France  
Client Service Manager

**Approved by:**



John Gustafson  
Managing Director

Envirolab Job Number: 20/06509

Client Project Name: West Winch By Pass

Client Project Ref: 100746

Lab Sample ID	20/06509/1	20/06509/2	20/06509/3					Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	106	208	211							
Depth to Top	0.5	0.5	0.4							
Depth To Bottom										
Date Sampled	01-Aug-20	01-Aug-20	01-Aug-20							
Sample Type	Soil - ES	Soil - ES	Soil - ES							
Sample Matrix Code	6AB	4AE	6AE							
% Stones >10mm <sub>A</sub>	15.1	0.5	<0.1							
pH <sub>D</sub> <sup>M#</sup>	7.71	7.16	7.69					pH	0.01	A-T-031s
Sulphate (water sol 2:1) <sub>D</sub> <sup>M#</sup>	<0.01	<0.01	<0.01					g/l	0.01	A-T-026s
Sulphate (acid soluble) <sub>D</sub> <sup>M#</sup>	<200	<200	210					mg/kg	200	A-T-028s
Cyanide (total) <sub>A</sub> <sup>M#</sup>	<1	<1	<1					mg/kg	1	A-T-042sTCN
Phenols - Total by HPLC <sub>A</sub>	<0.2	<0.2	<0.2					mg/kg	0.2	A-T-050s
Sulphide <sub>A</sub>	<5	<5	<5					mg/kg	5	A-T-S2-s
Sulphur (elemental) <sub>D</sub> <sup>M#</sup>	<5	<5	<5					mg/kg	5	A-T-029s
Organic matter <sub>D</sub> <sup>M#</sup>	1.0	0.8	1.7					% w/w	0.1	A-T-032 OM
Arsenic <sub>D</sub> <sup>M#</sup>	2	4	6					mg/kg	1	A-T-024s
Boron (water soluble) <sub>D</sub>	<1.0	<1.0	<1.0					mg/kg	1	A-T-027s
Cadmium <sub>D</sub> <sup>M#</sup>	<0.5	<0.5	<0.5					mg/kg	0.5	A-T-024s
Copper <sub>D</sub> <sup>M#</sup>	3	4	7					mg/kg	1	A-T-024s
Chromium <sub>D</sub> <sup>M#</sup>	8	6	11					mg/kg	1	A-T-024s
Chromium (hexavalent) <sub>D</sub>	<1	<1	<1					mg/kg	1	A-T-040s
Lead <sub>D</sub> <sup>M#</sup>	10	7	19					mg/kg	1	A-T-024s
Mercury <sub>D</sub>	0.18	<0.17	<0.17					mg/kg	0.17	A-T-024s
Nickel <sub>D</sub> <sup>M#</sup>	6	4	7					mg/kg	1	A-T-024s
Selenium <sub>D</sub> <sup>M#</sup>	<1	<1	<1					mg/kg	1	A-T-024s
Zinc <sub>D</sub> <sup>M#</sup>	14	23	29					mg/kg	5	A-T-024s

Envirolab Job Number: 20/06509

Client Project Name: West Winch By Pass

Client Project Ref: 100746

Lab Sample ID	20/06509/1	20/06509/2	20/06509/3					Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	106	208	211							
Depth to Top	0.5	0.5	0.4							
Depth To Bottom										
Date Sampled	01-Aug-20	01-Aug-20	01-Aug-20							
Sample Type	Soil - ES	Soil - ES	Soil - ES							
Sample Matrix Code	6AB	4AE	6AE							
PAH-16MS										
Acenaphthene <sub>A</sub> <sup>M#</sup>	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-019s
Acenaphthylene <sub>A</sub> <sup>M#</sup>	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-019s
Anthracene <sub>A</sub> <sup>M#</sup>	<0.02	<0.02	<0.02					mg/kg	0.02	A-T-019s
Benzo(a)anthracene <sub>A</sub> <sup>M#</sup>	<0.04	<0.04	<0.04					mg/kg	0.04	A-T-019s
Benzo(a)pyrene <sub>A</sub> <sup>M#</sup>	<0.04	<0.04	<0.04					mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene <sub>A</sub> <sup>M#</sup>	<0.05	<0.05	<0.05					mg/kg	0.05	A-T-019s
Benzo(ghi)perylene <sub>A</sub> <sup>M#</sup>	<0.05	<0.05	<0.05					mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene <sub>A</sub> <sup>M#</sup>	<0.07	<0.07	<0.07					mg/kg	0.07	A-T-019s
Chrysene <sub>A</sub> <sup>M#</sup>	<0.06	<0.06	<0.06					mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene <sub>A</sub> <sup>M#</sup>	<0.04	<0.04	<0.04					mg/kg	0.04	A-T-019s
Fluoranthene <sub>A</sub> <sup>M#</sup>	<0.08	<0.08	<0.08					mg/kg	0.08	A-T-019s
Fluorene <sub>A</sub> <sup>M#</sup>	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene <sub>A</sub> <sup>M#</sup>	<0.03	<0.03	<0.03					mg/kg	0.03	A-T-019s
Naphthalene <sub>A</sub> <sup>M#</sup>	<0.03	<0.03	<0.03					mg/kg	0.03	A-T-019s
Phenanthrene <sub>A</sub> <sup>M#</sup>	<0.03	<0.03	0.06					mg/kg	0.03	A-T-019s
Pyrene <sub>A</sub> <sup>M#</sup>	<0.07	<0.07	<0.07					mg/kg	0.07	A-T-019s
Total PAH-16MS <sub>A</sub> <sup>M#</sup>	<0.08	<0.08	<0.08					mg/kg	0.01	A-T-019s

Envirolab Job Number: 20/06509

Client Project Name: West Winch By Pass

Client Project Ref: 100746

Lab Sample ID	20/06509/1	20/06509/2	20/06509/3					Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	106	208	211							
Depth to Top	0.5	0.5	0.4							
Depth To Bottom										
Date Sampled	01-Aug-20	01-Aug-20	01-Aug-20							
Sample Type	Soil - ES	Soil - ES	Soil - ES							
Sample Matrix Code	6AB	4AE	6AE							
TPH UKCWG										
Ali >C5-C6 <sub>A</sub> <sup>#</sup>	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
Ali >C6-C8 <sub>A</sub> <sup>#</sup>	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
Ali >C8-C10 <sub>A</sub>	<1	<1	<1					mg/kg	1	A-T-055s
Ali >C10-C12 <sub>A</sub> <sup>M#</sup>	<1	<1	<1					mg/kg	1	A-T-055s
Ali >C12-C16 <sub>A</sub> <sup>M#</sup>	<1	<1	<1					mg/kg	1	A-T-055s
Ali >C16-C21 <sub>A</sub> <sup>M#</sup>	<1	<1	<1					mg/kg	1	A-T-055s
Ali >C21-C35 <sub>A</sub>	<1	<1	9					mg/kg	1	A-T-055s
Ali >C35-C44 <sub>A</sub>	<1	<1	<1					mg/kg	1	A-T-055s
Total Aliphatics <sub>A</sub>	<1	<1	9					mg/kg	1	A-T-055s
Aro >C5-C7 <sub>A</sub> <sup>#</sup>	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
Aro >C7-C8 <sub>A</sub> <sup>#</sup>	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
Aro >C8-C10 <sub>A</sub>	<1	<1	<1					mg/kg	1	A-T-055s
Aro >C10-C12 <sub>A</sub> <sup>M#</sup>	<1	<1	<1					mg/kg	1	A-T-055s
Aro >C12-C16 <sub>A</sub>	<1	<1	<1					mg/kg	1	A-T-055s
Aro >C16-C21 <sub>A</sub> <sup>M#</sup>	<1	<1	<1					mg/kg	1	A-T-055s
Aro >C21-C35 <sub>A</sub> <sup>M#</sup>	<1	<1	5					mg/kg	1	A-T-055s
Aro >C35-C44 <sub>A</sub>	<1	<1	1					mg/kg	1	A-T-055s
Total Aromatics <sub>A</sub>	<1	<1	6					mg/kg	1	A-T-055s
TPH (Ali & Aro >C5-C44) <sub>A</sub>	<1	<1	15					mg/kg	1	A-T-055s
BTEX - Benzene <sub>A</sub> <sup>#</sup>	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
BTEX - Toluene <sub>A</sub> <sup>#</sup>	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene <sub>A</sub> <sup>#</sup>	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
BTEX - m & p Xylene <sub>A</sub> <sup>#</sup>	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
BTEX - o Xylene <sub>A</sub> <sup>#</sup>	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
MTBE <sub>A</sub> <sup>#</sup>	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s

## **REPORT NOTES**

### **General**

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Analytical results reflect the quality of the sample at the time of analysis only.

Opinions and interpretations expressed are outside the scope of our accreditation.

If results are in italic font they are associated with an AQC failure, these are not accredited and are unreliable.

A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.

The Client Sample No, Client Sample ID, Depth to Top, Depth to Bottom and Date Sampled were all provided by the client.

### **Soil chemical analysis:**

All results are reported as dry weight (<40°C).

For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.

For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts

All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

### **TPH analysis of water by method A-T-007:**

Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

### **Electrical Conductivity of water by Method A-T-037:**

Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the calibration range and as such are unaccredited.

### **Asbestos:**

Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.

Stones etc. are not removed from the sample prior to analysis.

Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

### **Predominant Matrix Codes:**

1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample.

Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.

### **Secondary Matrix Codes:**

A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal,

E = contains roots/twigs.

### **Key:**

IS indicates Insufficient Sample for analysis.

US indicates Unsuitable Sample for analysis.

NDP indicates No Determination Possible.

NAD indicates No Asbestos Detected.

N/A indicates Not Applicable.

Superscript # indicates method accredited to ISO 17025.

Superscript "M" indicates method accredited to MCERTS.

Subscript "A" indicates analysis performed on the sample as received.

Subscript "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve

Please contact us if you need any further information.



## FINAL ANALYTICAL TEST REPORT

**Envirolab Job Number:** 20/06736  
**Issue Number:** 1  
**Date:** 24 August, 2020

**Client:** Norse Eastern Ltd t/a Norse Highways  
280 Fifers Lane  
Norwich  
Norfolk  
NR6 6EQ

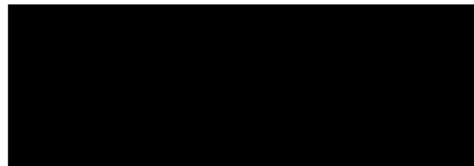
**Project Manager:** Scott Viner/Sharon Woods; Simon Holden  
**Project Name:** West Winch Relief Road  
**Project Ref:** 100746  
**Order No:** PN05006964  
**Date Samples Received:** 14/08/20  
**Date Instructions Received:** 14/08/20  
**Date Analysis Completed:** 21/08/20

**Prepared by:**



Melanie Marshall  
Laboratory Coordinator

**Approved by:**



Richard Wong  
Client Manager

Envirolab Job Number: 20/06736

Client Project Name: West Winch Relief Road

Client Project Ref: 100746

Lab Sample ID	20/06736/1	20/06736/2	20/06736/3	20/06736/4				Units	Limit of Detection	Method ref
Client Sample No	3	4	4	6						
Client Sample ID	207	210	214	213						
Depth to Top	1.50	1.80	2.20	2.30						
Depth To Bottom										
Date Sampled	24-Jul-20	24-Jul-20	24-Jul-20	24-Jul-20						
Sample Type	Soil - B	Soil - B	Soil - B	Soil - B						
Sample Matrix Code	5	6	3	6						
% Stones >10mm <sub>A</sub>	<0.1	<0.1	<0.1	<0.1						
pH <sub>D</sub> <sup>M#</sup>	7.63	7.71	7.61	7.60				pH	0.01	A-T-031s
Sulphate (water sol 2:1) <sub>D</sub> <sup>M#</sup>	0.02	<0.01	0.86	0.76				g/l	0.01	A-T-026s

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For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts

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Stones etc. are not removed from the sample prior to analysis.

Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

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A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal,

E = contains roots/twigs.

### **Key:**

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US indicates Unsuitable Sample for analysis.

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Superscript "M" indicates method accredited to MCERTS.

Subscript "A" indicates analysis performed on the sample as received.

Subscript "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve

Please contact us if you need any further information.

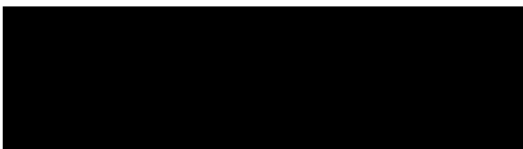
## FINAL ANALYTICAL TEST REPORT

**Envirolab Job Number:** 20/06956  
**Issue Number:** 1  
**Date:** 01 September, 2020

**Client:** Norse Eastern Ltd t/a Norse Highways  
280 Fifers Lane  
Norwich  
Norfolk  
NR6 6EQ

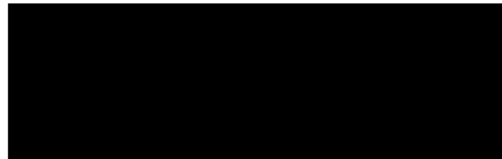
**Project Manager:** Civil Lab/Sharon Woods; Simon Holden  
**Project Name:** West Winch Relief Road  
**Project Ref:** 100746  
**Order No:** PN05007149  
**Date Samples Received:** 20/08/20  
**Date Instructions Received:** 21/08/20  
**Date Analysis Completed:** 01/09/20

**Prepared by:**



Holly Neary-King  
Client Services Supervisor

**Approved by:**



Richard Wong  
Client Manager

Envirolab Job Number: 20/06956

Client Project Name: West Winch Relief Road

Client Project Ref: 100746

Lab Sample ID	20/06956/1	20/06956/2	20/06956/3	20/06956/4	20/06956/5			Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	101	103	105	106	107					
Depth to Top	2.7	1.6	3.4	1.5	1.7					
Depth To Bottom										
Date Sampled	18-Aug-20	18-Aug-20	18-Aug-20	18-Aug-20	18-Aug-20					
Sample Type	Water - EW	Water - EW	Water - EW	Water - EW	Water - EW					
Sample Matrix Code	N/A	N/A	N/A	N/A	N/A					
pH (w) <sub>A</sub> <sup>#</sup>	7.23	6.24	7.44	7.39	7.20					
Hardness Total <sub>A</sub> <sup>#</sup>	428	226	420	374	747			mg/l Ca CO <sub>3</sub>	2	A-T-049w
Ammoniacal nitrogen as N (w) <sub>A</sub> <sup>#</sup>	0.53	0.31	0.14	0.64	0.21			mg/l	0.02	A-T-033w
Nitrite (w) <sub>A</sub> <sup>#</sup>	0.9	<0.1	0.2	<0.1	0.2			mg/l	0.1	A-T-026w
Nitrate (w) <sub>A</sub> <sup>#</sup>	169	0.2	3.9	0.2	28.7			mg/l	0.1	A-T-026w
Sulphate (w) <sub>A</sub> <sup>#</sup>	76	189	59	48	234			mg/l	1	A-T-026w
Cyanide (total) (w) <sub>A</sub> <sup>#</sup>	<0.005	<0.005	0.007	<0.005	<0.005			mg/l	0.005	A-T-042wTCN
Phenols - Total by HPLC (w) <sub>A</sub>	<0.01	<0.01	<0.01	<0.01	<0.01			mg/l	0.01	A-T-050w
Sulphide (w) <sub>A</sub>	<0.1	<0.1	<0.1	<0.1	<0.1			mg/l	0.1	A-T-S2-w
Arsenic (dissolved) <sub>A</sub> <sup>#</sup>	2	3	<1	4	2			µg/l	1	A-T-025w
Boron (dissolved) <sub>A</sub> <sup>#</sup>	53	30	76	58	68			µg/l	10	A-T-025w
Cadmium (dissolved) <sub>A</sub> <sup>#</sup>	<0.2	<0.2	<0.2	<0.2	<0.2			µg/l	0.2	A-T-025w
Copper (total) <sub>A</sub>	104	94	99	88	31			µg/l	1	A-T-025w
Chromium (dissolved) <sub>A</sub> <sup>#</sup>	<1	<1	<1	<1	<1			µg/l	1	A-T-025w
Chromium (hexavalent) (w) <sub>A</sub> <sup>#</sup>	<0.01	<0.01	<0.01	<0.01	<0.01			mg/l	0.01	A-T-040w
Lead (dissolved) <sub>A</sub> <sup>#</sup>	<1	<1	<1	<1	<1			µg/l	1	A-T-025w
Mercury (dissolved) <sub>A</sub> <sup>#</sup>	<0.1	<0.1	<0.1	<0.1	<0.1			µg/l	0.1	A-T-025w
Nickel (dissolved) <sub>A</sub> <sup>#</sup>	7	14	8	8	12			µg/l	1	A-T-025w
Selenium (dissolved) <sub>A</sub> <sup>#</sup>	2	<1	<1	<1	<1			µg/l	1	A-T-025w
Sulphur (elemental/free) (w) <sub>A</sub>	<0.1	<0.1	<0.1	<0.1	<0.1			mg/l	0.1	A-T-029w
Zinc (total) <sub>A</sub>	492	791	230	198	71			µg/l	1	A-T-025w
Aldrin (w) <sub>A</sub>	<0.1	<0.1	<0.1	-	-			µg/l	0.1	A-T-056w
alpha-Hexachlorocyclohexane (HCH) (w) <sub>A</sub>	<0.1	<0.1	<0.1	-	-			µg/l	0.1	A-T-056w
Azinphos-methyl (w) <sub>A</sub>	<0.1	<0.1	<0.1	-	-			µg/l	0.1	A-T-056w
beta-Hexachlorocyclohexane (HCH) (w) <sub>A</sub>	<0.1	<0.1	<0.1	-	-			µg/l	0.1	A-T-056w
Diazinon (Dimpylate) (w) <sub>A</sub>	<0.1	<0.1	<0.1	-	-			µg/l	0.1	A-T-056w
Dichlorvos (w) <sub>A</sub>	<0.1	<0.1	<0.1	-	-			µg/l	0.1	A-T-056w
Dieldrin (w) <sub>A</sub>	<0.1	<0.1	<0.1	-	-			µg/l	0.1	A-T-056w
Endrin (w) <sub>A</sub>	<0.1	<0.1	<0.1	-	-			µg/l	0.1	A-T-056w
Ethion (w) <sub>A</sub>	<0.1	<0.1	<0.1	-	-			µg/l	0.1	A-T-056w
Endosulphan Sulphate (w) <sub>A</sub>	<0.1	<0.1	<0.1	-	-			µg/l	0.1	A-T-056w
Endosulphan II (Beta) (w) <sub>A</sub>	<0.1	<0.1	<0.1	-	-			µg/l	0.1	A-T-056w
Endosulphan I (Alpha) (w) <sub>A</sub>	<0.1	<0.1	<0.1	-	-			µg/l	0.1	A-T-056w

Envirolab Job Number: 20/06956

Client Project Name: West Winch Relief Road

Client Project Ref: 100746

Lab Sample ID	20/06956/1	20/06956/2	20/06956/3	20/06956/4	20/06956/5			Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	101	103	105	106	107					
Depth to Top	2.7	1.6	3.4	1.5	1.7					
Depth To Bottom										
Date Sampled	18-Aug-20	18-Aug-20	18-Aug-20	18-Aug-20	18-Aug-20					
Sample Type	Water - EW	Water - EW	Water - EW	Water - EW	Water - EW					
Sample Matrix Code	N/A	N/A	N/A	N/A	N/A					
Fenitrothion (w) <sub>A</sub>	<0.1	<0.1	<0.1	-	-					
gamma-Hexachlorocyclohexane (HCH / Lindane) (w) <sub>A</sub>	<0.1	<0.1	<0.1	-	-			µg/l	0.1	A-T-056w
Heptachlor (w) <sub>A</sub>	<0.1	<0.1	<0.1	-	-			µg/l	0.1	A-T-056w
Heptachlor epoxide (w) <sub>A</sub>	<0.1	<0.1	<0.1	-	-			µg/l	0.1	A-T-056w
Malathion (w) <sub>A</sub>	<0.1	<0.1	<0.1	-	-			µg/l	0.1	A-T-056w
Methyl Parathion (w) <sub>A</sub>	<0.1	<0.1	<0.1	-	-			µg/l	0.1	A-T-056w
Mevinphos (w) <sub>A</sub>	<0.5	<0.5	<0.5	-	-			µg/l	0.5	A-T-056w
Parathion (Ethyl Parathion) (w) <sub>A</sub>	<0.1	<0.1	<0.1	-	-			µg/l	0.1	A-T-056w

Envirolab Job Number: 20/06956

Client Project Name: West Winch Relief Road

Client Project Ref: 100746

Lab Sample ID	20/06956/1	20/06956/2	20/06956/3	20/06956/4	20/06956/5			Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	101	103	105	106	107					
Depth to Top	2.7	1.6	3.4	1.5	1.7					
Depth To Bottom										
Date Sampled	18-Aug-20	18-Aug-20	18-Aug-20	18-Aug-20	18-Aug-20					
Sample Type	Water - EW	Water - EW	Water - EW	Water - EW	Water - EW					
Sample Matrix Code	N/A	N/A	N/A	N/A	N/A					
PAH 16MS (w)										
Acenaphthene (w) <sub>A</sub> <sup>#</sup>	<0.01	<0.01	<0.01	<0.01	<0.01			µg/l	0.01	A-T-019w
Acenaphthylene (w) <sub>A</sub> <sup>#</sup>	<0.01	<0.01	<0.01	<0.01	<0.01			µg/l	0.01	A-T-019w
Anthracene (w) <sub>A</sub> <sup>#</sup>	<0.01	<0.01	<0.01	<0.01	<0.01			µg/l	0.01	A-T-019w
Benzo(a)anthracene (w) <sub>A</sub> <sup>#</sup>	0.02	<0.01	<0.01	<0.01	<0.01			µg/l	0.01	A-T-019w
Benzo(a)pyrene (w) <sub>A</sub> <sup>#</sup>	0.02	<0.01	<0.01	<0.01	<0.01			µg/l	0.01	A-T-019w
Benzo(b)fluoranthene (w) <sub>A</sub> <sup>#</sup>	0.03	<0.01	<0.01	<0.01	<0.01			µg/l	0.01	A-T-019w
Benzo(ghi)perylene (w) <sub>A</sub> <sup>#</sup>	0.02	<0.01	<0.01	<0.01	<0.01			µg/l	0.01	A-T-019w
Benzo(k)fluoranthene (w) <sub>A</sub> <sup>#</sup>	<0.01	<0.01	<0.01	<0.01	<0.01			µg/l	0.01	A-T-019w
Chrysene (w) <sub>A</sub> <sup>#</sup>	0.02	<0.01	<0.01	<0.01	<0.01			µg/l	0.01	A-T-019w
Dibenzo(ah)anthracene (w) <sub>A</sub> <sup>#</sup>	<0.01	<0.01	<0.01	<0.01	<0.01			µg/l	0.01	A-T-019w
Fluoranthene (w) <sub>A</sub> <sup>#</sup>	0.06	<0.01	<0.01	<0.01	<0.01			µg/l	0.01	A-T-019w
Fluorene (w) <sub>A</sub> <sup>#</sup>	<0.01	<0.01	<0.01	<0.01	<0.01			µg/l	0.01	A-T-019w
Indeno(123-cd)pyrene (w) <sub>A</sub> <sup>#</sup>	0.02	<0.01	<0.01	<0.01	<0.01			µg/l	0.01	A-T-019w
Naphthalene (w) <sub>A</sub> <sup>#</sup>	<0.01	<0.01	<0.01	<0.01	<0.01			µg/l	0.01	A-T-019w
Phenanthrene (w) <sub>A</sub> <sup>#</sup>	0.01	<0.01	<0.01	<0.01	<0.01			µg/l	0.01	A-T-019w
Pyrene (w) <sub>A</sub> <sup>#</sup>	0.05	<0.01	<0.01	<0.01	<0.01			µg/l	0.01	A-T-019w
Total PAH 16MS (w) <sub>A</sub> <sup>#</sup>	0.25	<0.01	<0.01	<0.01	<0.01			µg/l	0.01	A-T-019w

Envirolab Job Number: 20/06956

Client Project Name: West Winch Relief Road

Client Project Ref: 100746

Lab Sample ID	20/06956/1	20/06956/2	20/06956/3	20/06956/4	20/06956/5			Units	Limit of Detection	Method ref
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Depth To Bottom										
Date Sampled	18-Aug-20	18-Aug-20	18-Aug-20	18-Aug-20	18-Aug-20					
Sample Type	Water - EW	Water - EW	Water - EW	Water - EW	Water - EW					
Sample Matrix Code	N/A	N/A	N/A	N/A	N/A					
<b>Speciated PCB-EC7 (w)</b>										
PCB BZ 28 (w) <sub>A</sub> <sup>#</sup>	<0.001	<0.001	<0.001	-	-			µg/l	0.001	A-T-004w
PCB BZ 52 (w) <sub>A</sub> <sup>#</sup>	<0.001	<0.001	<0.001	-	-			µg/l	0.001	A-T-004w
PCB BZ 101 (w) <sub>A</sub> <sup>#</sup>	<0.001	<0.001	<0.001	-	-			µg/l	0.001	A-T-004w
PCB BZ 118 (w) <sub>A</sub> <sup>#</sup>	<0.002	<0.002	<0.002	-	-			µg/l	0.002	A-T-004w
PCB BZ 138 (w) <sub>A</sub> <sup>#</sup>	<0.001	<0.001	<0.001	-	-			µg/l	0.001	A-T-004w
PCB BZ 153 (w) <sub>A</sub> <sup>#</sup>	<0.001	<0.001	<0.001	-	-			µg/l	0.001	A-T-004w
PCB BZ 180 (w) <sub>A</sub> <sup>#</sup>	<0.001	<0.001	<0.001	-	-			µg/l	0.001	A-T-004w
Total Speciated PCB-EC7 (w) <sub>A</sub> <sup>#</sup>	<0.002	<0.002	<0.002	-	-			µg/l	0.001	A-T-004w



Envirolab Job Number: 20/06956

Client Project Name: West Winch Relief Road

Client Project Ref: 100746

Lab Sample ID	20/06956/1	20/06956/2	20/06956/3	20/06956/4	20/06956/5			Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	101	103	105	106	107					
Depth to Top	2.7	1.6	3.4	1.5	1.7					
Depth To Bottom										
Date Sampled	18-Aug-20	18-Aug-20	18-Aug-20	18-Aug-20	18-Aug-20					
Sample Type	Water - EW	Water - EW	Water - EW	Water - EW	Water - EW					
Sample Matrix Code	N/A	N/A	N/A	N/A	N/A					
SVOC (excluding PAH-16) (w)										
2,4,5-Trichlorophenol <sub>A</sub>	<1	<1	<1	-	-			µg/l	1	A-T-052w
2,4,6-Trichlorophenol <sub>A</sub>	<1	<1	<1	-	-			µg/l	1	A-T-052w
2,4-Dichlorophenol <sub>A</sub>	<1	<1	<1	-	-			µg/l	1	A-T-052w
2,4-Dimethylphenol <sub>A</sub>	<1	<1	<1	-	-			µg/l	1	A-T-052w
2,4-Dinitrotoluene <sub>A</sub>	<1	<1	<1	-	-			µg/l	1	A-T-052w
2,6-Dinitrotoluene <sub>A</sub>	<1	<1	<1	-	-			µg/l	1	A-T-052w
2-Chloronaphthalene <sub>A</sub>	<1	<1	<1	-	-			µg/l	1	A-T-052w
2-Chlorophenol <sub>A</sub>	<1	<1	<1	-	-			µg/l	1	A-T-052w
2-Methylnaphthalene <sub>A</sub>	<1	<1	<1	-	-			µg/l	1	A-T-052w
2-Methylphenol <sub>A</sub>	<1	<1	<1	-	-			µg/l	1	A-T-052w
2-Nitrophenol <sub>A</sub>	<1	<1	<1	-	-			µg/l	1	A-T-052w
4-Bromophenyl phenyl ether <sub>A</sub>	<1	<1	<1	-	-			µg/l	1	A-T-052w
4-Chloro-3-methylphenol <sub>A</sub>	<1	<1	<1	-	-			µg/l	1	A-T-052w
Bis(2-chloroisopropyl)ether <sub>A</sub>	<1	<1	<1	-	-			µg/l	1	A-T-052w
3+4-Methylphenol <sub>A</sub>	<1	<1	<1	-	-			µg/l	1	A-T-052w
4-Nitrophenol <sub>A</sub>	<1	<1	<1	-	-			µg/l	1	A-T-052w
Bis(2-chloroethyl)ether <sub>A</sub>	<1	<1	<1	-	-			µg/l	1	A-T-052w
Bis(2-chloroethoxy)methane <sub>A</sub>	<1	<1	<1	-	-			µg/l	1	A-T-052w
Bis(2-ethylhexyl)phthalate <sub>A</sub>	<10	<10	<10	-	-			µg/l	10	A-T-052w
Butylbenzyl phthalate <sub>A</sub>	<1	<1	<1	-	-			µg/l	1	A-T-052w
Carbazole <sub>A</sub>	<1	<1	<1	-	-			µg/l	1	A-T-052w
Dibenzofuran <sub>A</sub>	<1	<1	<1	-	-			µg/l	1	A-T-052w
n-Dibutylphthalate <sub>A</sub>	<1	<1	<1	-	-			µg/l	1	A-T-052w
n-Dioctylphthalate <sub>A</sub>	<10	<10	<10	-	-			µg/l	10	A-T-052w
n-Nitroso-n-dipropylamine <sub>A</sub>	<1	<1	<1	-	-			µg/l	1	A-T-052w
Diethyl phthalate <sub>A</sub>	<1	<1	<1	-	-			µg/l	1	A-T-052w
Dimethyl phthalate <sub>A</sub>	<1	<1	<1	-	-			µg/l	1	A-T-052w
Hexachlorobenzene <sub>A</sub>	<1	<1	<1	-	-			µg/l	1	A-T-052w
Pentachlorophenol (SVOC) <sub>A</sub>	<1	<1	<1	-	-			µg/l	1	A-T-052w
Phenol <sub>A</sub>	<1	<1	<1	-	-			µg/l	1	A-T-052w
Hexachloroethane <sub>A</sub>	<1	<1	<1	-	-			µg/l	1	A-T-052w
Nitrobenzene <sub>A</sub>	<1	<1	<1	-	-			µg/l	1	A-T-052w

Envirolab Job Number: 20/06956

Client Project Name: West Winch Relief Road

Client Project Ref: 100746

Lab Sample ID	20/06956/1	20/06956/2	20/06956/3	20/06956/4	20/06956/5			Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	101	103	105	106	107					
Depth to Top	2.7	1.6	3.4	1.5	1.7					
Depth To Bottom										
Date Sampled	18-Aug-20	18-Aug-20	18-Aug-20	18-Aug-20	18-Aug-20					
Sample Type	Water - EW	Water - EW	Water - EW	Water - EW	Water - EW					
Sample Matrix Code	N/A	N/A	N/A	N/A	N/A					
Isophorone <sub>A</sub>	<1	<1	<1	-	-					
Hexachlorocyclopentadiene <sub>A</sub>	<1	<1	<1	-	-			µg/l	1	A-T-052w
Perylene <sub>A</sub>	<1	<1	<1	-	-			µg/l	1	A-T-052w

Envirolab Job Number: 20/06956

Client Project Name: West Winch Relief Road

Client Project Ref: 100746

Lab Sample ID	20/06956/1	20/06956/2	20/06956/3	20/06956/4	20/06956/5			Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	101	103	105	106	107					
Depth to Top	2.7	1.6	3.4	1.5	1.7					
Depth To Bottom										
Date Sampled	18-Aug-20	18-Aug-20	18-Aug-20	18-Aug-20	18-Aug-20					
Sample Type	Water - EW	Water - EW	Water - EW	Water - EW	Water - EW					
Sample Matrix Code	N/A	N/A	N/A	N/A	N/A					
VOC (w)										
Dichlorodifluoromethane <sub>A</sub>	<1	<1	<1	-	-			µg/l	1	A-T-006w
Chloromethane <sub>A</sub>	<10	<10	<10	-	-			µg/l	10	A-T-006w
Vinyl Chloride <sub>A</sub> <sup>#</sup>	<1	<1	<1	-	-			µg/l	1	A-T-006w
Bromomethane <sub>A</sub> <sup>#</sup>	<1	<1	<1	-	-			µg/l	1	A-T-006w
Chloroethane <sub>A</sub> <sup>#</sup>	<1	<1	<1	-	-			µg/l	1	A-T-006w
Trichlorofluoromethane <sub>A</sub> <sup>#</sup>	<1	<1	<1	-	-			µg/l	1	A-T-006w
trans 1,2-Dichloroethene <sub>A</sub> <sup>#</sup>	<1	<1	<1	-	-			µg/l	1	A-T-006w
Dichloromethane <sub>A</sub>	<5	<5	<5	-	-			µg/l	5	A-T-006w
Carbon Disulphide <sub>A</sub> <sup>#</sup>	<1	<1	<1	-	-			µg/l	1	A-T-006w
1,1-Dichloroethene <sub>A</sub> <sup>#</sup>	<1	<1	<1	-	-			µg/l	1	A-T-006w
1,1,1-Trichloroethane <sub>A</sub> <sup>#</sup>	<1	<1	<1	-	-			µg/l	1	A-T-006w
cis 1,2-Dichloroethene <sub>A</sub> <sup>#</sup>	<1	<1	<1	-	-			µg/l	1	A-T-006w
Bromochloromethane <sub>A</sub> <sup>#</sup>	<5	<5	<5	-	-			µg/l	5	A-T-006w
Chloroform <sub>A</sub> <sup>#</sup>	<1	<1	<1	-	-			µg/l	1	A-T-006w
2,2-Dichloropropane <sub>A</sub> <sup>#</sup>	<1	<1	<1	-	-			µg/l	1	A-T-006w
1,2-Dichloroethane <sub>A</sub> <sup>#</sup>	<2	<2	<2	-	-			µg/l	2	A-T-006w
1,1,1-Trichloroethane <sub>A</sub> <sup>#</sup>	<1	<1	<1	-	-			µg/l	1	A-T-006w
1,1-Dichloropropene <sub>A</sub> <sup>#</sup>	<1	<1	<1	-	-			µg/l	1	A-T-006w
Benzene <sub>A</sub> <sup>#</sup>	<1	<1	<1	-	-			µg/l	1	A-T-006w
Carbon Tetrachloride <sub>A</sub> <sup>#</sup>	<1	<1	<1	-	-			µg/l	1	A-T-006w
Dibromomethane <sub>A</sub> <sup>#</sup>	<1	<1	<1	-	-			µg/l	1	A-T-006w
1,2-Dichloropropane <sub>A</sub> <sup>#</sup>	<1	<1	<1	-	-			µg/l	1	A-T-006w
Bromodichloromethane <sub>A</sub> <sup>#</sup>	<10	<10	<10	-	-			µg/l	10	A-T-006w
Trichloroethene <sub>A</sub> <sup>#</sup>	<1	<1	<1	-	-			µg/l	1	A-T-006w
cis 1,3-Dichloropropene <sub>A</sub> <sup>#</sup>	<1	<1	<1	-	-			µg/l	1	A-T-006w
trans 1,3-Dichloropropene <sub>A</sub> <sup>#</sup>	<1	<1	<1	-	-			µg/l	1	A-T-006w
1,1,2-Trichloroethane <sub>A</sub> <sup>#</sup>	<1	<1	<1	-	-			µg/l	1	A-T-006w
Toluene <sub>A</sub> <sup>#</sup>	<1	<1	<1	-	-			µg/l	1	A-T-006w
1,3-Dichloropropane <sub>A</sub> <sup>#</sup>	<1	<1	<1	-	-			µg/l	1	A-T-006w
Dibromochloromethane <sub>A</sub> <sup>#</sup>	<3	<3	<3	-	-			µg/l	3	A-T-006w
1,2-Dibromoethane <sub>A</sub> <sup>#</sup>	<1	<1	<1	-	-			µg/l	1	A-T-006w
Tetrachloroethene <sub>A</sub>	<1	<1	<1	-	-			µg/l	1	A-T-006w

Envirolab Job Number: 20/06956

Client Project Name: West Winch Relief Road

Client Project Ref: 100746

Lab Sample ID	20/06956/1	20/06956/2	20/06956/3	20/06956/4	20/06956/5			Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	101	103	105	106	107					
Depth to Top	2.7	1.6	3.4	1.5	1.7					
Depth To Bottom										
Date Sampled	18-Aug-20	18-Aug-20	18-Aug-20	18-Aug-20	18-Aug-20					
Sample Type	Water - EW	Water - EW	Water - EW	Water - EW	Water - EW					
Sample Matrix Code	N/A	N/A	N/A	N/A	N/A					
1,1,1,2-Tetrachloroethane <sub>A</sub>	<1	<1	<1	-	-			µg/l	1	A-T-006w
Chlorobenzene <sub>A</sub> <sup>#</sup>	<1	<1	<1	-	-			µg/l	1	A-T-006w
Ethylbenzene <sub>A</sub> <sup>#</sup>	<1	<1	<1	-	-			µg/l	1	A-T-006w
m & p Xylene <sub>A</sub> <sup>#</sup>	<1	<1	<1	-	-			µg/l	1	A-T-006w
Bromoform <sub>A</sub> <sup>#</sup>	<1	<1	<1	-	-			µg/l	1	A-T-006w
Styrene <sub>A</sub> <sup>#</sup>	<1	<1	<1	-	-			µg/l	1	A-T-006w
1,1,1,2-Tetrachloroethane <sub>A</sub>	<1	<1	<1	-	-			µg/l	1	A-T-006w
o-Xylene <sub>A</sub> <sup>#</sup>	<1	<1	<1	-	-			µg/l	1	A-T-006w
1,2,3-Trichloropropane <sub>A</sub> <sup>#</sup>	<1	<1	<1	-	-			µg/l	1	A-T-006w
Isopropylbenzene <sub>A</sub> <sup>#</sup>	<1	<1	<1	-	-			µg/l	1	A-T-006w
Bromobenzene <sub>A</sub> <sup>#</sup>	<1	<1	<1	-	-			µg/l	1	A-T-006w
2-Chlorotoluene <sub>A</sub> <sup>#</sup>	<1	<1	<1	-	-			µg/l	1	A-T-006w
n-propylbenzene <sub>A</sub> <sup>#</sup>	<1	<1	<1	-	-			µg/l	1	A-T-006w
4-Chlorotoluene <sub>A</sub> <sup>#</sup>	<1	<1	<1	-	-			µg/l	1	A-T-006w
1,2,4-Trimethylbenzene <sub>A</sub> <sup>#</sup>	<1	<1	<1	-	-			µg/l	1	A-T-006w
4-Isopropyltoluene <sub>A</sub> <sup>#</sup>	<1	<1	<1	-	-			µg/l	1	A-T-006w
1,3,5-Trimethylbenzene <sub>A</sub> <sup>#</sup>	<1	<1	<1	-	-			µg/l	1	A-T-006w
1,2-Dichlorobenzene <sub>A</sub> <sup>#</sup>	<1	<1	<1	-	-			µg/l	1	A-T-006w
1,4-Dichlorobenzene <sub>A</sub> <sup>#</sup>	<1	<1	<1	-	-			µg/l	1	A-T-006w
sec-Butylbenzene <sub>A</sub> <sup>#</sup>	<1	<1	<1	-	-			µg/l	1	A-T-006w
tert-Butylbenzene <sub>A</sub> <sup>#</sup>	<2	<2	<2	-	-			µg/l	2	A-T-006w
1,3-Dichlorobenzene <sub>A</sub> <sup>#</sup>	<1	<1	<1	-	-			µg/l	1	A-T-006w
n-butylbenzene <sub>A</sub> <sup>#</sup>	<1	<1	<1	-	-			µg/l	1	A-T-006w
1,2-Dibromo-3-chloropropane <sub>A</sub> <sup>#</sup>	<2	<2	<2	-	-			µg/l	2	A-T-006w
1,2,4-Trichlorobenzene <sub>A</sub> <sup>#</sup>	<3	<3	<3	-	-			µg/l	3	A-T-006w
1,2,3-Trichlorobenzene <sub>A</sub> <sup>#</sup>	<3	<3	<3	-	-			µg/l	3	A-T-006w
Hexachlorobutadiene <sub>A</sub> <sup>#</sup>	<1	<1	<1	-	-			µg/l	1	A-T-006w

Envirolab Job Number: 20/06956

Client Project Name: West Winch Relief Road

Client Project Ref: 100746

Lab Sample ID	20/06956/1	20/06956/2	20/06956/3	20/06956/4	20/06956/5			Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	101	103	105	106	107					
Depth to Top	2.7	1.6	3.4	1.5	1.7					
Depth To Bottom										
Date Sampled	18-Aug-20	18-Aug-20	18-Aug-20	18-Aug-20	18-Aug-20					
Sample Type	Water - EW	Water - EW	Water - EW	Water - EW	Water - EW					
Sample Matrix Code	N/A	N/A	N/A	N/A	N/A					
TPH UKCWG (w)										
Ali >C5-C6 (w) <sub>A</sub> <sup>#</sup>	<1	<1	<1	<1	<1			µg/l	1	A-T-022w
Ali >C6-C8 (w) <sub>A</sub> <sup>#</sup>	<1	<1	<1	<1	<1			µg/l	1	A-T-022w
Ali >C8-C10 (w) <sub>A</sub> <sup>#</sup>	5	<5	<5	<5	<5			µg/l	5	A-T-055w
Ali >C10-C12 (w) <sub>A</sub> <sup>#</sup>	<5	<5	<5	<5	<5			µg/l	5	A-T-055w
Ali >C12-C16 (w) <sub>A</sub> <sup>#</sup>	<5	<5	<5	<5	<5			µg/l	5	A-T-055w
Ali >C16-C21 (w) <sub>A</sub> <sup>#</sup>	<5	<5	<5	<5	<5			µg/l	5	A-T-055w
Ali >C21-C35 (w) <sub>A</sub> <sup>#</sup>	6	<5	<5	<5	<5			µg/l	5	A-T-055w
Ali >C35-C44 (w) <sub>A</sub>	<5	<5	<5	<5	<5			µg/l	5	A-T-055w
Total Aliphatics (w) <sub>A</sub>	11	<5	<5	<5	<5			µg/l	5	A-T-055w
Aro >C5-C7 (w) <sub>A</sub> <sup>#</sup>	<1	<1	<1	<1	<1			µg/l	1	A-T-022w
Aro >C7-C8 (w) <sub>A</sub> <sup>#</sup>	<1	<1	<1	<1	<1			µg/l	1	A-T-022w
Aro >C8-C10 (w) <sub>A</sub>	16	<5	<5	<5	<5			µg/l	5	A-T-055w
Aro >C10-C12 (w) <sub>A</sub> <sup>#</sup>	16	<5	<5	<5	<5			µg/l	5	A-T-055w
Aro >C12-C16 (w) <sub>A</sub> <sup>#</sup>	9	<5	<5	<5	<5			µg/l	5	A-T-055w
Aro >C16-C21 (w) <sub>A</sub> <sup>#</sup>	6	<5	<5	<5	<5			µg/l	5	A-T-055w
Aro >C21-C35 (w) <sub>A</sub> <sup>#</sup>	11	<10	<10	<10	<10			µg/l	10	A-T-055w
Aro >C35-C44 (w) <sub>A</sub>	<5	<5	<5	<5	<5			µg/l	5	A-T-055w
Total Aromatics (w) <sub>A</sub>	58	<10	<10	<10	<10			µg/l	10	A-T-055w
TPH (Ali & Aro >C5-C44) (w) <sub>A</sub>	69	<10	<10	<10	<10			µg/l	10	A-T-055w
BTEX - Benzene (w) <sub>A</sub> <sup>#</sup>	<1	<1	<1	<1	<1			µg/l	1	A-T-022w
BTEX - Toluene (w) <sub>A</sub> <sup>#</sup>	<1	<1	<1	<1	<1			µg/l	1	A-T-022w
BTEX - Ethyl Benzene (w) <sub>A</sub> <sup>#</sup>	<1	<1	<1	<1	<1			µg/l	1	A-T-022w
BTEX - m & p Xylene (w) <sub>A</sub> <sup>#</sup>	<1	<1	<1	<1	<1			µg/l	1	A-T-022w
BTEX - o Xylene (w) <sub>A</sub> <sup>#</sup>	<1	<1	<1	<1	<1			µg/l	1	A-T-022w
MTBE (w) <sub>A</sub> <sup>#</sup>	<1	<1	<1	<1	<1			µg/l	1	A-T-022w

## **REPORT NOTES**

### **General**

This report shall not be reproduced, except in full, without written approval from Envirolab.

The results reported herein relate only to the material supplied to the laboratory.

The residue of any samples contained within this report, and any received with the same delivery, will be disposed of six weeks after initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of six months after the initial Asbestos testing is completed.

Analytical results reflect the quality of the sample at the time of analysis only.

Opinions and interpretations expressed are outside the scope of our accreditation.

If results are in italic font they are associated with an AQC failure, these are not accredited and are unreliable.

A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.

The Client Sample No, Client Sample ID, Depth to Top, Depth to Bottom and Date Sampled were all provided by the client.

### **Soil chemical analysis:**

All results are reported as dry weight (<40°C).

For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.

For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts

All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

### **TPH analysis of water by method A-T-007:**

Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

### **Electrical Conductivity of water by Method A-T-037:**

Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the calibration range and as such are unaccredited.

### **Asbestos:**

Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.

Stones etc. are not removed from the sample prior to analysis.

Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

### **Predominant Matrix Codes:**

1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample.

Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.

### **Secondary Matrix Codes:**

A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal,

E = contains roots/twigs.

### **Key:**

IS indicates Insufficient Sample for analysis.

US indicates Unsuitable Sample for analysis.

NDP indicates No Determination Possible.

NAD indicates No Asbestos Detected.

N/A indicates Not Applicable.

Superscript # indicates method accredited to ISO 17025.

Superscript "M" indicates method accredited to MCERTS.

Subscript "A" indicates analysis performed on the sample as received.

Subscript "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve

Please contact us if you need any further information.

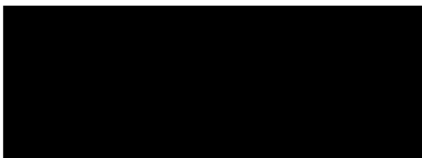
## FINAL ANALYTICAL TEST REPORT

**Envirolab Job Number:** 20/06245  
**Issue Number:** 1  
**Date:** 14 August, 2020

**Client:** Norse Eastern Ltd t/a Norse Highways  
280 Fifers Lane  
Norwich  
Norfolk  
NR6 6EQ

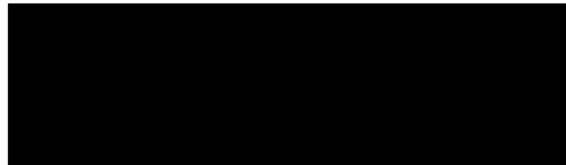
**Project Manager:** Civil Lab/Sharon Woods; Simon Holden  
**Project Name:** West Winch By Pass  
**Project Ref:** 100746  
**Order No:** PN05006589  
**Date Samples Received:** 27/07/20  
**Date Instructions Received:** 30/07/20  
**Date Analysis Completed:** 14/08/20

**Prepared by:**



Sophie France  
Client Service Manager

**Approved by:**



Richard Wong  
Client Manager

Envirolab Job Number: 20/06245

Client Project Name: West Winch By Pass

Client Project Ref: 100746

Lab Sample ID	20/06245/1	20/06245/2	20/06245/3	20/06245/4	20/06245/5	20/06245/6	20/06245/7	Units	Limit of Detection	Method ref
Client Sample No	1	1	1	1	1	1	1			
Client Sample ID	205	206	207	216	217	210	213			
Depth to Top	0.40	0.40	0.40	0.50	0.50	0.30	0.40			
Depth To Bottom										
Date Sampled	23-Jul-20	23-Jul-20	23-Jul-20	22-Jul-20	22-Jul-20	24-Jul-20	24-Jul-20			
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES			
Sample Matrix Code	5A	1AE	5AE	5AE	4AE	4AE	1AE			
% Natural Moisture Content (NMC) at 105C <sub>A</sub>	-	-	-	-	19.4	8.5	-			
% Stones >10mm <sub>A</sub>	<0.1	5.8	0.8	<0.1	<0.1	<0.1	<0.1	% w/w	0.1	A-T-044
pH <sub>D</sub> <sup>M#</sup>	8.11	8.20	7.95	7.68	8.01	7.58	7.49	pH	0.01	A-T-031s
Sulphate (water sol 2:1) <sub>D</sub> <sup>M#</sup>	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	g/l	0.01	A-T-026s
Sulphate (acid soluble) <sub>D</sub> <sup>M#</sup>	<200	200	220	430	340	250	<200	mg/kg	200	A-T-028s
Cyanide (total) <sub>A</sub> <sup>M#</sup>	<1	<1	<1	<1	<1	<1	<1	mg/kg	1	A-T-042sTCN
Phenols - Total by HPLC <sub>A</sub>	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	mg/kg	0.2	A-T-050s
Sulphide <sub>A</sub>	<5	<5	22	<5	7	<5	7	mg/kg	5	A-T-S2-s
Sulphur (elemental) <sub>D</sub> <sup>M#</sup>	<5	<5	<5	<5	<5	<5	<5	mg/kg	5	A-T-029s
Organic matter <sub>D</sub> <sup>M#</sup>	0.8	0.9	1.2	0.7	2.3	1.6	1.1	% w/w	0.1	A-T-032 OM
Arsenic <sub>D</sub> <sup>M#</sup>	5	4	5	5	7	5	2	mg/kg	1	A-T-024s
Boron (water soluble) <sub>D</sub>	<1.0	<1.0	1.1	<1.0	1.0	<1.0	<1.0	mg/kg	1	A-T-027s
Cadmium <sub>D</sub> <sup>M#</sup>	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	mg/kg	0.5	A-T-024s
Copper <sub>D</sub> <sup>M#</sup>	13	3	13	7	28	9	3	mg/kg	1	A-T-024s
Chromium <sub>D</sub> <sup>M#</sup>	27	10	31	19	17	14	10	mg/kg	1	A-T-024s
Chromium (hexavalent) <sub>D</sub>	<1	<1	<1	<1	<1	<1	<1	mg/kg	1	A-T-040s
Lead <sub>D</sub> <sup>M#</sup>	13	14	27	18	65	29	6	mg/kg	1	A-T-024s
Mercury <sub>D</sub>	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	mg/kg	0.17	A-T-024s
Nickel <sub>D</sub> <sup>M#</sup>	17	5	18	6	9	7	6	mg/kg	1	A-T-024s
Selenium <sub>D</sub> <sup>M#</sup>	1	<1	<1	<1	<1	<1	<1	mg/kg	1	A-T-024s
Zinc <sub>D</sub> <sup>M#</sup>	39	17	64	27	47	42	16	mg/kg	5	A-T-024s
<b>Acid Herbicides</b>										
2,4,5-T <sub>A</sub>	-	-	-	-	<0.5	<0.5	-	mg/kg	0.5	Subcon Chemtest
2,4-D <sub>A</sub>	-	-	-	-	<0.5	<0.5	-	mg/kg	0.5	Subcon Chemtest
2,4-DP; (Dichlorprop) <sub>A</sub>	-	-	-	-	<0.5	<0.5	-	mg/kg	0.5	Subcon Chemtest
MCPA <sub>A</sub>	-	-	-	-	<0.5	<0.5	-	mg/kg	0.5	Subcon Chemtest
MCPB <sub>A</sub>	-	-	-	-	<0.5	<0.5	-	mg/kg	0.5	Subcon Chemtest
MCP; (Mecoprop) <sub>A</sub>	-	-	-	-	<0.5	<0.5	-	mg/kg	0.5	Subcon Chemtest



Envirolab Job Number: 20/06245

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Lab Sample ID	20/06245/1	20/06245/2	20/06245/3	20/06245/4	20/06245/5	20/06245/6	20/06245/7	Units	Limit of Detection	Method ref
Client Sample No	1	1	1	1	1	1	1			
Client Sample ID	205	206	207	216	217	210	213			
Depth to Top	0.40	0.40	0.40	0.50	0.50	0.30	0.40			
Depth To Bottom										
Date Sampled	23-Jul-20	23-Jul-20	23-Jul-20	22-Jul-20	22-Jul-20	24-Jul-20	24-Jul-20			
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES			
Sample Matrix Code	5A	1AE	5AE	5AE	4AE	4AE	1AE			
OPP										
Dichlorvos <sub>A</sub>	-	-	-	-	<0.01	<0.01	-	mg/kg	0.01	A-T-056
Mevinphos <sub>A</sub>	-	-	-	-	<0.01	<0.01	-	mg/kg	0.01	A-T-056
Demeton-S <sub>A</sub>	-	-	-	-	<0.50	<0.50	-	mg/kg	0.5	A-T-056
Phorate <sub>A</sub>	-	-	-	-	<0.01	<0.01	-	mg/kg	0.01	A-T-056
Dimethoate <sub>A</sub>	-	-	-	-	<0.01	<0.01	-	mg/kg	0.01	A-T-056
Demeton-O <sub>A</sub>	-	-	-	-	<0.50	<0.50	-	mg/kg	0.5	A-T-056
Propetamphos <sub>A</sub>	-	-	-	-	<0.01	<0.01	-	mg/kg	0.01	A-T-056
Diazinon (Dimpylate) <sub>A</sub>	-	-	-	-	<0.01	<0.01	-	mg/kg	0.01	A-T-056
Disulfoton <sub>A</sub>	-	-	-	-	<0.10	<0.10	-	mg/kg	0.1	A-T-056
Etrimphos <sub>A</sub>	-	-	-	-	<0.01	<0.01	-	mg/kg	0.01	A-T-056
Chlorpyrifos-methyl <sub>A</sub>	-	-	-	-	<0.01	<0.01	-	mg/kg	0.01	A-T-056
Methyl Parathion <sub>A</sub>	-	-	-	-	<0.01	<0.01	-	mg/kg	0.01	A-T-056
Pirimiphos-methyl <sub>A</sub>	-	-	-	-	<0.01	<0.01	-	mg/kg	0.01	A-T-056
Fenitrothion <sub>A</sub>	-	-	-	-	<0.01	<0.01	-	mg/kg	0.01	A-T-056
Malathion <sub>A</sub>	-	-	-	-	<0.01	<0.01	-	mg/kg	0.01	A-T-056
Chlorpyrifos <sub>A</sub>	-	-	-	-	<0.01	<0.01	-	mg/kg	0.01	A-T-056
Fenthion <sub>A</sub>	-	-	-	-	<0.01	<0.01	-	mg/kg	0.01	A-T-056
Parathion (Ethyl Parathion) <sub>A</sub>	-	-	-	-	<0.01	<0.01	-	mg/kg	0.01	A-T-056
Trichloronate <sub>A</sub>	-	-	-	-	<0.01	<0.01	-	mg/kg	0.01	A-T-056
Chlorfenvinphos <sub>A</sub>	-	-	-	-	<0.01	<0.01	-	mg/kg	0.01	A-T-056
Fensulphothion <sub>A</sub>	-	-	-	-	<0.01	<0.01	-	mg/kg	0.01	A-T-056
Ethion <sub>A</sub>	-	-	-	-	<0.01	<0.01	-	mg/kg	0.01	A-T-056
Triazophos <sub>A</sub>	-	-	-	-	<0.01	<0.01	-	mg/kg	0.01	A-T-056
Sulprofos <sub>A</sub>	-	-	-	-	<0.01	<0.01	-	mg/kg	0.01	A-T-056
Carbophenothion <sub>A</sub>	-	-	-	-	<0.01	<0.01	-	mg/kg	0.01	A-T-056
Phosalone <sub>A</sub>	-	-	-	-	<0.01	<0.01	-	mg/kg	0.01	A-T-056
Azinphos-methyl <sub>A</sub>	-	-	-	-	<0.01	<0.01	-	mg/kg	0.01	A-T-056
Azinphos-ethyl <sub>A</sub>	-	-	-	-	<0.01	<0.01	-	mg/kg	0.01	A-T-056
Coumaphos <sub>A</sub>	-	-	-	-	<0.01	<0.01	-	mg/kg	0.01	A-T-056
Prothiofos (Tokuthion) <sub>A</sub>	-	-	-	-	<0.01	<0.01	-	mg/kg	0.01	A-T-056

Envirolab Job Number: 20/06245

Client Project Name: West Winch By Pass

Client Project Ref: 100746

Lab Sample ID	20/06245/1	20/06245/2	20/06245/3	20/06245/4	20/06245/5	20/06245/6	20/06245/7	Units	Limit of Detection	Method ref
Client Sample No	1	1	1	1	1	1	1			
Client Sample ID	205	206	207	216	217	210	213			
Depth to Top	0.40	0.40	0.40	0.50	0.50	0.30	0.40			
Depth To Bottom										
Date Sampled	23-Jul-20	23-Jul-20	23-Jul-20	22-Jul-20	22-Jul-20	24-Jul-20	24-Jul-20			
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES			
Sample Matrix Code	5A	1AE	5AE	5AE	4AE	4AE	1AE			
<b>PAH-16MS</b>										
Acenaphthene <sub>A</sub> <sup>M#</sup>	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-019s
Acenaphthylene <sub>A</sub> <sup>M#</sup>	<0.01	<0.01	<0.01	<0.01	0.02	<0.01	<0.01	mg/kg	0.01	A-T-019s
Anthracene <sub>A</sub> <sup>M#</sup>	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	mg/kg	0.02	A-T-019s
Benzo(a)anthracene <sub>A</sub> <sup>M#</sup>	<0.04	<0.04	<0.04	<0.04	0.23	<0.04	<0.04	mg/kg	0.04	A-T-019s
Benzo(a)pyrene <sub>A</sub> <sup>M#</sup>	<0.04	<0.04	<0.04	<0.04	0.33	<0.04	<0.04	mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene <sub>A</sub> <sup>M#</sup>	<0.05	<0.05	<0.05	<0.05	0.42	<0.05	<0.05	mg/kg	0.05	A-T-019s
Benzo(ghi)perylene <sub>A</sub> <sup>M#</sup>	<0.05	<0.05	<0.05	<0.05	0.23	<0.05	<0.05	mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene <sub>A</sub> <sup>M#</sup>	<0.07	<0.07	<0.07	<0.07	0.14	<0.07	<0.07	mg/kg	0.07	A-T-019s
Chrysene <sub>A</sub> <sup>M#</sup>	<0.06	<0.06	<0.06	<0.06	0.32	<0.06	<0.06	mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene <sub>A</sub> <sup>M#</sup>	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	mg/kg	0.04	A-T-019s
Fluoranthene <sub>A</sub> <sup>M#</sup>	<0.08	<0.08	<0.08	<0.08	0.48	<0.08	<0.08	mg/kg	0.08	A-T-019s
Fluorene <sub>A</sub> <sup>M#</sup>	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene <sub>A</sub> <sup>M#</sup>	<0.03	<0.03	<0.03	<0.03	0.26	<0.03	<0.03	mg/kg	0.03	A-T-019s
Naphthalene <sub>A</sub> <sup>M#</sup>	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	mg/kg	0.03	A-T-019s
Phenanthrene <sub>A</sub> <sup>M#</sup>	<0.03	<0.03	<0.03	<0.03	0.13	<0.03	<0.03	mg/kg	0.03	A-T-019s
Pyrene <sub>A</sub> <sup>M#</sup>	<0.07	<0.07	<0.07	<0.07	0.42	<0.07	<0.07	mg/kg	0.07	A-T-019s
Total PAH-16MS <sub>A</sub> <sup>M#</sup>	<0.08	<0.08	<0.08	<0.08	2.98	<0.08	<0.08	mg/kg	0.01	A-T-019s

Envirolab Job Number: 20/06245

Client Project Name: West Winch By Pass

Client Project Ref: 100746

Lab Sample ID	20/06245/1	20/06245/2	20/06245/3	20/06245/4	20/06245/5	20/06245/6	20/06245/7	Units	Limit of Detection	Method ref
Client Sample No	1	1	1	1	1	1	1			
Client Sample ID	205	206	207	216	217	210	213			
Depth to Top	0.40	0.40	0.40	0.50	0.50	0.30	0.40			
Depth To Bottom										
Date Sampled	23-Jul-20	23-Jul-20	23-Jul-20	22-Jul-20	22-Jul-20	24-Jul-20	24-Jul-20			
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES			
Sample Matrix Code	5A	1AE	5AE	5AE	4AE	4AE	1AE			
<b>Speciated PCB-EC7</b>										
PCB BZ 28 <sub>A</sub>	-	-	-	-	<0.002	<0.002	-	mg/kg	0.002	A-T-004s
PCB BZ 52 <sub>A</sub> <sup>M#</sup>	-	-	-	-	<0.002	<0.002	-	mg/kg	0.002	A-T-004s
PCB BZ 101 <sub>A</sub> <sup>M#</sup>	-	-	-	-	<0.004	<0.004	-	mg/kg	0.004	A-T-004s
PCB BZ 118 <sub>A</sub> <sup>M#</sup>	-	-	-	-	<0.007	<0.007	-	mg/kg	0.007	A-T-004s
PCB BZ 138 <sub>A</sub> <sup>M#</sup>	-	-	-	-	<0.006	<0.006	-	mg/kg	0.006	A-T-004s
PCB BZ 153 <sub>A</sub> <sup>M#</sup>	-	-	-	-	<0.004	<0.004	-	mg/kg	0.004	A-T-004s
PCB BZ 180 <sub>A</sub> <sup>M#</sup>	-	-	-	-	<0.004	<0.004	-	mg/kg	0.004	A-T-004s
Total Speciated PCB-EC7 <sub>A</sub>	-	-	-	-	<0.007	<0.007	-	mg/kg	0.002	A-T-004s

Envirolab Job Number: 20/06245

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Lab Sample ID	20/06245/1	20/06245/2	20/06245/3	20/06245/4	20/06245/5	20/06245/6	20/06245/7	Units	Limit of Detection	Method ref
Client Sample No	1	1	1	1	1	1	1			
Client Sample ID	205	206	207	216	217	210	213			
Depth to Top	0.40	0.40	0.40	0.50	0.50	0.30	0.40			
Depth To Bottom										
Date Sampled	23-Jul-20	23-Jul-20	23-Jul-20	22-Jul-20	22-Jul-20	24-Jul-20	24-Jul-20			
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES			
Sample Matrix Code	5A	1AE	5AE	5AE	4AE	4AE	1AE			
SVOC										
Hexachlorobenzene <sub>A</sub>	-	-	-	-	<100	<100	-	µg/kg	100	A-T-052s
Diethyl phthalate <sub>A</sub>	-	-	-	-	<100	<100	-	µg/kg	100	A-T-052s
Dimethyl phthalate <sub>A</sub>	-	-	-	-	<100	<100	-	µg/kg	100	A-T-052s
Dibenzofuran <sub>A</sub>	-	-	-	-	<100	<100	-	µg/kg	100	A-T-052s
Carbazole <sub>A</sub>	-	-	-	-	<100	<100	-	µg/kg	100	A-T-052s
Butylbenzyl phthalate <sub>A</sub>	-	-	-	-	<100	<100	-	µg/kg	100	A-T-052s
Bis(2-ethylhexyl)phthalate <sub>A</sub>	-	-	-	-	<500	<500	-	µg/kg	500	A-T-052s
Bis(2-chloroethoxy)methane <sub>A</sub>	-	-	-	-	<100	<100	-	µg/kg	100	A-T-052s
Bis(2-chloroethyl)ether <sub>A</sub>	-	-	-	-	<100	<100	-	µg/kg	100	A-T-052s
4-Nitrophenol <sub>A</sub>	-	-	-	-	<100	<100	-	µg/kg	100	A-T-052s
3+4-Methylphenol <sub>A</sub>	-	-	-	-	<100	<100	-	µg/kg	100	A-T-052s
4-Chloro-3-methylphenol <sub>A</sub>	-	-	-	-	<100	<100	-	µg/kg	100	A-T-052s
2-Nitrophenol <sub>A</sub>	-	-	-	-	<100	<100	-	µg/kg	100	A-T-052s
2-Methylphenol <sub>A</sub>	-	-	-	-	<100	<100	-	µg/kg	100	A-T-052s
2-Chlorophenol <sub>A</sub>	-	-	-	-	<100	<100	-	µg/kg	100	A-T-052s
2,6-Dinitrotoluene <sub>A</sub>	-	-	-	-	<100	<100	-	µg/kg	100	A-T-052s
2,4-Dinitrotoluene <sub>A</sub>	-	-	-	-	<100	<100	-	µg/kg	100	A-T-052s
2,4-Dimethylphenol <sub>A</sub>	-	-	-	-	<100	<100	-	µg/kg	100	A-T-052s
2,4-Dichlorophenol <sub>A</sub>	-	-	-	-	<100	<100	-	µg/kg	100	A-T-052s
2,4,6-Trichlorophenol <sub>A</sub>	-	-	-	-	<100	<100	-	µg/kg	100	A-T-052s
2,4,5-Trichlorophenol <sub>A</sub>	-	-	-	-	<100	<100	-	µg/kg	100	A-T-052s
2-Chloronaphthalene <sub>A</sub>	-	-	-	-	<100	<100	-	µg/kg	100	A-T-052s
2-Methylnaphthalene <sub>A</sub>	-	-	-	-	<100	<100	-	µg/kg	100	A-T-052s
Bis(2-chloroisopropyl)ether <sub>A</sub>	-	-	-	-	<100	<100	-	µg/kg	100	A-T-052s
Phenol <sub>A</sub>	-	-	-	-	<100	<100	-	µg/kg	100	A-T-052s
Pentachlorophenol (SVOC) <sub>A</sub>	-	-	-	-	<100	<100	-	µg/kg	100	A-T-052s
n-Nitroso-n-dipropylamine <sub>A</sub>	-	-	-	-	<100	<100	-	µg/kg	100	A-T-052s
n-Diethylphthalate <sub>A</sub>	-	-	-	-	<500	<500	-	µg/kg	500	A-T-052s
n-Dibutylphthalate <sub>A</sub>	-	-	-	-	<100	<100	-	µg/kg	100	A-T-052s
Nitrobenzene <sub>A</sub>	-	-	-	-	<100	<100	-	µg/kg	100	A-T-052s
Isophorone <sub>A</sub>	-	-	-	-	<100	<100	-	µg/kg	100	A-T-052s
Hexachloroethane <sub>A</sub>	-	-	-	-	<100	<100	-	µg/kg	100	A-T-052s

Envirolab Job Number: 20/06245

Client Project Name: West Winch By Pass

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Lab Sample ID	20/06245/1	20/06245/2	20/06245/3	20/06245/4	20/06245/5	20/06245/6	20/06245/7	Units	Limit of Detection	Method ref
Client Sample No	1	1	1	1	1	1	1			
Client Sample ID	205	206	207	216	217	210	213			
Depth to Top	0.40	0.40	0.40	0.50	0.50	0.30	0.40			
Depth To Bottom										
Date Sampled	23-Jul-20	23-Jul-20	23-Jul-20	22-Jul-20	22-Jul-20	24-Jul-20	24-Jul-20			
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES			
Sample Matrix Code	5A	1AE	5AE	5AE	4AE	4AE	1AE			
Hexachlorocyclopentadiene <sub>A</sub>	-	-	-	-	<100	<100	-			
Perylene <sub>A</sub>	-	-	-	-	<100	<100	-	µg/kg	100	A-T-052s

Envirolab Job Number: 20/06245

Client Project Name: West Winch By Pass

Client Project Ref: 100746

Lab Sample ID	20/06245/1	20/06245/2	20/06245/3	20/06245/4	20/06245/5	20/06245/6	20/06245/7	Units	Limit of Detection	Method ref
Client Sample No	1	1	1	1	1	1	1			
Client Sample ID	205	206	207	216	217	210	213			
Depth to Top	0.40	0.40	0.40	0.50	0.50	0.30	0.40			
Depth To Bottom										
Date Sampled	23-Jul-20	23-Jul-20	23-Jul-20	22-Jul-20	22-Jul-20	24-Jul-20	24-Jul-20			
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES			
Sample Matrix Code	5A	1AE	5AE	5AE	4AE	4AE	1AE			
VOC										
Dichlorodifluoromethane <sub>A</sub>	-	-	-	-	<1	<1	-	µg/kg	1	A-T-006s
Chloromethane <sub>A</sub>	-	-	-	-	<10	<10	-	µg/kg	10	A-T-006s
Vinyl Chloride (Chloroethene) <sub>A</sub> <sup>#</sup>	-	-	-	-	<1	<1	-	µg/kg	1	A-T-006s
Bromomethane <sub>A</sub> <sup>#</sup>	-	-	-	-	<1	<1	-	µg/kg	1	A-T-006s
Chloroethane <sub>A</sub> <sup>#</sup>	-	-	-	-	<1	<1	-	µg/kg	1	A-T-006s
Trichlorofluoromethane <sub>A</sub> <sup>#</sup>	-	-	-	-	<1	<1	-	µg/kg	1	A-T-006s
1,1-Dichloroethene <sub>A</sub> <sup>#</sup>	-	-	-	-	<1	<1	-	µg/kg	1	A-T-006s
Carbon Disulphide <sub>A</sub> <sup>#</sup>	-	-	-	-	<1	<1	-	µg/kg	1	A-T-006s
Dichloromethane <sub>A</sub>	-	-	-	-	<5	<5	-	µg/kg	5	A-T-006s
trans 1,2-Dichloroethene <sub>A</sub> <sup>#</sup>	-	-	-	-	<1	<1	-	µg/kg	1	A-T-006s
1,1-Dichloroethane <sub>A</sub> <sup>#</sup>	-	-	-	-	<1	<1	-	µg/kg	1	A-T-006s
cis 1,2-Dichloroethane <sub>A</sub> <sup>#</sup>	-	-	-	-	<1	<1	-	µg/kg	1	A-T-006s
2,2-Dichloropropane <sub>A</sub> <sup>#</sup>	-	-	-	-	<1	<1	-	µg/kg	1	A-T-006s
Bromochloromethane <sub>A</sub> <sup>#</sup>	-	-	-	-	<5	<5	-	µg/kg	5	A-T-006s
Chloroform <sub>A</sub> <sup>#</sup>	-	-	-	-	<1	<1	-	µg/kg	1	A-T-006s
1,1,1-Trichloroethane <sub>A</sub> <sup>#</sup>	-	-	-	-	<1	<1	-	µg/kg	1	A-T-006s
1,1-Dichloropropene <sub>A</sub> <sup>#</sup>	-	-	-	-	<1	<1	-	µg/kg	1	A-T-006s
Carbon Tetrachloride <sub>A</sub> <sup>#</sup>	-	-	-	-	<1	<1	-	µg/kg	1	A-T-006s
1,2-Dichloroethane <sub>A</sub> <sup>#</sup>	-	-	-	-	<2	<2	-	µg/kg	2	A-T-006s
Benzene <sub>A</sub> <sup>#</sup>	-	-	-	-	<1	<1	-	µg/kg	1	A-T-006s
Trichloroethene <sub>A</sub> <sup>#</sup>	-	-	-	-	<1	<1	-	µg/kg	1	A-T-006s
1,2-Dichloropropane <sub>A</sub> <sup>#</sup>	-	-	-	-	<1	<1	-	µg/kg	1	A-T-006s
Dibromomethane <sub>A</sub> <sup>#</sup>	-	-	-	-	<1	<1	-	µg/kg	1	A-T-006s
Bromodichloromethane <sub>A</sub> <sup>#</sup>	-	-	-	-	<10	<10	-	µg/kg	10	A-T-006s
cis 1,3-Dichloropropene <sub>A</sub> <sup>#</sup>	-	-	-	-	<1	<1	-	µg/kg	1	A-T-006s
Toluene <sub>A</sub> <sup>#</sup>	-	-	-	-	<1	<1	-	µg/kg	1	A-T-006s
trans 1,3-Dichloropropene <sub>A</sub> <sup>#</sup>	-	-	-	-	<1	<1	-	µg/kg	1	A-T-006s
1,1,2-Trichloroethane <sub>A</sub> <sup>#</sup>	-	-	-	-	<1	<1	-	µg/kg	1	A-T-006s
1,3-Dichloropropane <sub>A</sub> <sup>#</sup>	-	-	-	-	<1	<1	-	µg/kg	1	A-T-006s
Tetrachloroethene <sub>A</sub> <sup>#</sup>	-	-	-	-	<1	<1	-	µg/kg	1	A-T-006s
Dibromochloromethane <sub>A</sub> <sup>#</sup>	-	-	-	-	<3	<3	-	µg/kg	3	A-T-006s
1,2-Dibromoethane <sub>A</sub> <sup>#</sup>	-	-	-	-	<1	<1	-	µg/kg	1	A-T-006s

Envirolab Job Number: 20/06245

Client Project Name: West Winch By Pass

Client Project Ref: 100746

Lab Sample ID	20/06245/1	20/06245/2	20/06245/3	20/06245/4	20/06245/5	20/06245/6	20/06245/7	Units	Limit of Detection	Method ref
Client Sample No	1	1	1	1	1	1	1			
Client Sample ID	205	206	207	216	217	210	213			
Depth to Top	0.40	0.40	0.40	0.50	0.50	0.30	0.40			
Depth To Bottom										
Date Sampled	23-Jul-20	23-Jul-20	23-Jul-20	22-Jul-20	22-Jul-20	24-Jul-20	24-Jul-20			
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES			
Sample Matrix Code	5A	1AE	5AE	5AE	4AE	4AE	1AE			
Chlorobenzene <sub>A</sub> <sup>#</sup>	-	-	-	-	<1	<1	-			
1,1,1,2-Tetrachloroethane <sub>A</sub>	-	-	-	-	<1	<1	-	µg/kg	1	A-T-006s
Ethylbenzene <sub>A</sub> <sup>#</sup>	-	-	-	-	<1	<1	-	µg/kg	1	A-T-006s
m & p Xylene <sub>A</sub> <sup>#</sup>	-	-	-	-	<1	<1	-	µg/kg	1	A-T-006s
o-Xylene <sub>A</sub> <sup>#</sup>	-	-	-	-	<1	<1	-	µg/kg	1	A-T-006s
Styrene <sub>A</sub> <sup>#</sup>	-	-	-	-	<1	<1	-	µg/kg	1	A-T-006s
Bromoform <sub>A</sub> <sup>#</sup>	-	-	-	-	<1	<1	-	µg/kg	1	A-T-006s
Isopropylbenzene <sub>A</sub> <sup>#</sup>	-	-	-	-	<1	<1	-	µg/kg	1	A-T-006s
1,1,2,2-Tetrachloroethane <sub>A</sub>	-	-	-	-	<1	<1	-	µg/kg	1	A-T-006s
1,2,3-Trichloropropane <sub>A</sub> <sup>#</sup>	-	-	-	-	<1	<1	-	µg/kg	1	A-T-006s
Bromobenzene <sub>A</sub> <sup>#</sup>	-	-	-	-	<1	<1	-	µg/kg	1	A-T-006s
n-Propylbenzene <sub>A</sub> <sup>#</sup>	-	-	-	-	<1	<1	-	µg/kg	1	A-T-006s
2-Chlorotoluene <sub>A</sub> <sup>#</sup>	-	-	-	-	<1	<1	-	µg/kg	1	A-T-006s
1,3,5-Trimethylbenzene <sub>A</sub> <sup>#</sup>	-	-	-	-	<1	<1	-	µg/kg	1	A-T-006s
4-Chlorotoluene <sub>A</sub> <sup>#</sup>	-	-	-	-	<1	<1	-	µg/kg	1	A-T-006s
tert-Butylbenzene <sub>A</sub> <sup>#</sup>	-	-	-	-	<2	<2	-	µg/kg	2	A-T-006s
1,2,4-Trimethylbenzene <sub>A</sub> <sup>#</sup>	-	-	-	-	<1	<1	-	µg/kg	1	A-T-006s
sec-Butylbenzene <sub>A</sub> <sup>#</sup>	-	-	-	-	<1	<1	-	µg/kg	1	A-T-006s
4-Isopropyltoluene <sub>A</sub> <sup>#</sup>	-	-	-	-	<1	<1	-	µg/kg	1	A-T-006s
1,3-Dichlorobenzene <sub>A</sub>	-	-	-	-	<1	<1	-	µg/kg	1	A-T-006s
1,4-Dichlorobenzene <sub>A</sub> <sup>#</sup>	-	-	-	-	<1	<1	-	µg/kg	1	A-T-006s
n-Butylbenzene <sub>A</sub> <sup>#</sup>	-	-	-	-	<1	<1	-	µg/kg	1	A-T-006s
1,2-Dichlorobenzene <sub>A</sub> <sup>#</sup>	-	-	-	-	<1	<1	-	µg/kg	1	A-T-006s
1,2-Dibromo-3-chloropropane (DCBP) <sub>A</sub>	-	-	-	-	<2	<2	-	µg/kg	2	A-T-006s
1,2,4-Trichlorobenzene <sub>A</sub>	-	-	-	-	<3	<3	-	µg/kg	3	A-T-006s
Hexachlorobutadiene <sub>A</sub> <sup>#</sup>	-	-	-	-	<1	<1	-	µg/kg	1	A-T-006s
1,2,3-Trichlorobenzene <sub>A</sub>	-	-	-	-	<3	<3	-	µg/kg	3	A-T-006s

Envirolab Job Number: 20/06245

Client Project Name: West Winch By Pass

Client Project Ref: 100746

Lab Sample ID	20/06245/1	20/06245/2	20/06245/3	20/06245/4	20/06245/5	20/06245/6	20/06245/7	Units	Limit of Detection	Method ref
Client Sample No	1	1	1	1	1	1	1			
Client Sample ID	205	206	207	216	217	210	213			
Depth to Top	0.40	0.40	0.40	0.50	0.50	0.30	0.40			
Depth To Bottom										
Date Sampled	23-Jul-20	23-Jul-20	23-Jul-20	22-Jul-20	22-Jul-20	24-Jul-20	24-Jul-20			
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES			
Sample Matrix Code	5A	1AE	5AE	5AE	4AE	4AE	1AE			
<b>TPH UKCWG</b>										
Ali >C5-C6 <sub>A</sub> <sup>#</sup>	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
Ali >C6-C8 <sub>A</sub> <sup>#</sup>	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
Ali >C8-C10 <sub>A</sub>	<1	<1	<1	<1	<1	<1	<1	mg/kg	1	A-T-055s
Ali >C10-C12 <sub>A</sub> <sup>M#</sup>	<1	<1	<1	<1	<1	<1	<1	mg/kg	1	A-T-055s
Ali >C12-C16 <sub>A</sub> <sup>M#</sup>	<1	<1	<1	<1	<1	<1	<1	mg/kg	1	A-T-055s
Ali >C16-C21 <sub>A</sub> <sup>M#</sup>	<1	<1	<1	<1	<1	<1	<1	mg/kg	1	A-T-055s
Ali >C21-C35 <sub>A</sub>	<1	<1	<1	<1	7	9	2	mg/kg	1	A-T-055s
Ali >C35-C44 <sub>A</sub>	<1	<1	<1	<1	2	1	<1	mg/kg	1	A-T-055s
Total Aliphatics <sub>A</sub>	<1	<1	<1	<1	10	10	2	mg/kg	1	A-T-055s
Aro >C5-C7 <sub>A</sub> <sup>#</sup>	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
Aro >C7-C8 <sub>A</sub> <sup>#</sup>	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
Aro >C8-C10 <sub>A</sub>	<1	<1	<1	<1	1	1	<1	mg/kg	1	A-T-055s
Aro >C10-C12 <sub>A</sub> <sup>M#</sup>	<1	<1	<1	<1	<1	<1	<1	mg/kg	1	A-T-055s
Aro >C12-C16 <sub>A</sub>	<1	<1	<1	<1	1	<1	<1	mg/kg	1	A-T-055s
Aro >C16-C21 <sub>A</sub> <sup>M#</sup>	<1	<1	<1	<1	4	1	<1	mg/kg	1	A-T-055s
Aro >C21-C35 <sub>A</sub> <sup>M#</sup>	<1	<1	<1	<1	23	5	1	mg/kg	1	A-T-055s
Aro >C35-C44 <sub>A</sub>	<1	<1	<1	<1	2	1	<1	mg/kg	1	A-T-055s
Total Aromatics <sub>A</sub>	<1	<1	<1	<1	31	10	1	mg/kg	1	A-T-055s
TPH (Ali & Aro >C5-C44) <sub>A</sub>	<1	<1	<1	<1	40	19	3	mg/kg	1	A-T-055s
BTEX - Benzene <sub>A</sub> <sup>#</sup>	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
BTEX - Toluene <sub>A</sub> <sup>#</sup>	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene <sub>A</sub> <sup>#</sup>	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
BTEX - m & p Xylene <sub>A</sub> <sup>#</sup>	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
BTEX - o Xylene <sub>A</sub> <sup>#</sup>	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
MTBE <sub>A</sub> <sup>#</sup>	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s



Envirolab Job Number: 20/06245

Client Project Name: West Winch By Pass

Client Project Ref: 100746

Lab Sample ID	20/06245/8	20/06245/9	20/06245/10	20/06245/11	20/06245/12	20/06245/13	20/06245/14	Units	Limit of Detection	Method ref
Client Sample No	1	1	2							
Client Sample ID	214	215	210	101	101	102	103			
Depth to Top	0.50	0.50	0.70	0.10	0.40	0.30	0.30			
Depth To Bottom							0.60			
Date Sampled	24-Jul-20	24-Jul-20	24-Jul-20	24-Jul-20	24-Jul-20	24-Jul-20	27-Jul-20			
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES			
Sample Matrix Code	1AE	1AE	5AE	4AE	1AE	5AE	1AB			
% Natural Moisture Content (NMC) at 105C <sub>A</sub>	13.9	-	-	13.6	-	-	11.5			
% Stones >10mm <sub>A</sub>	<0.1	<0.1	<0.1	4.0	3.8	5.2	18.4	% w/w	0.1	A-T-044
pH <sub>D</sub> <sup>M#</sup>	7.98	8.04	8.08	6.84	7.49	7.90	7.73	pH	0.01	A-T-031s
Sulphate (water sol 2:1) <sub>D</sub> <sup>M#</sup>	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	g/l	0.01	A-T-026s
Sulphate (acid soluble) <sub>D</sub> <sup>M#</sup>	<200	<200	<200	260	<200	<200	<200	mg/kg	200	A-T-028s
Cyanide (total) <sub>A</sub> <sup>M#</sup>	<1	<1	<1	<1	<1	<1	<1	mg/kg	1	A-T-042sTCN
Phenols - Total by HPLC <sub>A</sub>	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	mg/kg	0.2	A-T-050s
Sulphide <sub>A</sub>	17	<5	<5	<5	<5	<5	<5	mg/kg	5	A-T-S2-s
Sulphur (elemental) <sub>D</sub> <sup>M#</sup>	<5	<5	<5	<5	<5	<5	<5	mg/kg	5	A-T-029s
Organic matter <sub>D</sub> <sup>M#</sup>	0.6	0.6	0.3	3.5	1.0	0.9	1.1	% w/w	0.1	A-T-032 OM
Arsenic <sub>D</sub> <sup>M#</sup>	3	3	13	5	<1	4	19	mg/kg	1	A-T-024s
Boron (water soluble) <sub>D</sub>	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	mg/kg	1	A-T-027s
Cadmium <sub>D</sub> <sup>M#</sup>	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.1	mg/kg	0.5	A-T-024s
Copper <sub>D</sub> <sup>M#</sup>	4	2	5	10	3	12	5	mg/kg	1	A-T-024s
Chromium <sub>D</sub> <sup>M#</sup>	18	6	23	11	5	28	20	mg/kg	1	A-T-024s
Chromium (hexavalent) <sub>D</sub>	<1	<1	<1	<1	<1	<1	<1	mg/kg	1	A-T-040s
Lead <sub>D</sub> <sup>M#</sup>	10	5	16	26	7	13	20	mg/kg	1	A-T-024s
Mercury <sub>D</sub>	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	mg/kg	0.17	A-T-024s
Nickel <sub>D</sub> <sup>M#</sup>	13	3	8	7	3	19	20	mg/kg	1	A-T-024s
Selenium <sub>D</sub> <sup>M#</sup>	<1	<1	<1	<1	<1	<1	<1	mg/kg	1	A-T-024s
Zinc <sub>D</sub> <sup>M#</sup>	18	8	35	28	9	46	101	mg/kg	5	A-T-024s
<b>Acid Herbicides</b>										
2,4,5-T <sub>A</sub>	<0.5	-	-	<0.5	-	-	<0.5	mg/kg	0.5	Subcon Chemtest
2,4-D <sub>A</sub>	<0.5	-	-	<0.5	-	-	<0.5	mg/kg	0.5	Subcon Chemtest
2,4-DP; (Dichlorprop) <sub>A</sub>	<0.5	-	-	<0.5	-	-	<0.5	mg/kg	0.5	Subcon Chemtest
MCPA <sub>A</sub>	<0.5	-	-	<0.5	-	-	<0.5	mg/kg	0.5	Subcon Chemtest
MCPB <sub>A</sub>	<0.5	-	-	<0.5	-	-	<0.5	mg/kg	0.5	Subcon Chemtest
MCP; (Mecoprop) <sub>A</sub>	<0.5	-	-	<0.5	-	-	<0.5	mg/kg	0.5	Subcon Chemtest

Envirolab Job Number: 20/06245

Client Project Name: West Winch By Pass

Client Project Ref: 100746

Lab Sample ID	20/06245/8	20/06245/9	20/06245/10	20/06245/11	20/06245/12	20/06245/13	20/06245/14	Units	Limit of Detection	Method ref
Client Sample No	1	1	2							
Client Sample ID	214	215	210	101	101	102	103			
Depth to Top	0.50	0.50	0.70	0.10	0.40	0.30	0.30			
Depth To Bottom							0.60			
Date Sampled	24-Jul-20	24-Jul-20	24-Jul-20	24-Jul-20	24-Jul-20	24-Jul-20	27-Jul-20			
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES			
Sample Matrix Code	1AE	1AE	5AE	4AE	1AE	5AE	1AB			
<b>Asbestos in Soil (inc. matrix)</b>										
Asbestos in soil <sup>#</sup>	-	-	-	NAD	-	-	-			A-T-045
Asbestos ACM - Suitable for Water Absorption Test? <sup>D</sup>	-	-	-	N/A	-	-	-			A-T-045
<b>OPP</b>										
Dichlorvos <sub>A</sub>	<0.01	-	-	<0.01	-	-	<0.01	mg/kg	0.01	A-T-056
Mevinphos <sub>A</sub>	<0.01	-	-	<0.01	-	-	<0.01	mg/kg	0.01	A-T-056
Demeton-S <sub>A</sub>	<0.50	-	-	<0.50	-	-	<0.50	mg/kg	0.5	A-T-056
Phorate <sub>A</sub>	<0.01	-	-	<0.01	-	-	<0.01	mg/kg	0.01	A-T-056
Dimethoate <sub>A</sub>	<0.01	-	-	<0.01	-	-	<0.01	mg/kg	0.01	A-T-056
Demeton-O <sub>A</sub>	<0.50	-	-	<0.50	-	-	<0.50	mg/kg	0.5	A-T-056
Propetamphos <sub>A</sub>	<0.01	-	-	<0.01	-	-	<0.01	mg/kg	0.01	A-T-056
Diazinon (Dimpylate) <sub>A</sub>	<0.01	-	-	<0.01	-	-	<0.01	mg/kg	0.01	A-T-056
Disulfoton <sub>A</sub>	<0.10	-	-	<0.10	-	-	<0.10	mg/kg	0.1	A-T-056
Etrimphos <sub>A</sub>	<0.01	-	-	<0.01	-	-	<0.01	mg/kg	0.01	A-T-056
Chlorpyrifos-methyl <sub>A</sub>	<0.01	-	-	<0.01	-	-	<0.01	mg/kg	0.01	A-T-056
Methyl Parathion <sub>A</sub>	<0.01	-	-	<0.01	-	-	<0.01	mg/kg	0.01	A-T-056
Pirimiphos-methyl <sub>A</sub>	<0.01	-	-	<0.01	-	-	<0.01	mg/kg	0.01	A-T-056
Fenitrothion <sub>A</sub>	<0.01	-	-	<0.01	-	-	<0.01	mg/kg	0.01	A-T-056
Malathion <sub>A</sub>	<0.01	-	-	<0.01	-	-	<0.01	mg/kg	0.01	A-T-056
Chlorpyrifos <sub>A</sub>	<0.01	-	-	<0.01	-	-	<0.01	mg/kg	0.01	A-T-056
Fenthion <sub>A</sub>	<0.01	-	-	<0.01	-	-	<0.01	mg/kg	0.01	A-T-056
Parathion (Ethyl Parathion) <sub>A</sub>	<0.01	-	-	<0.01	-	-	<0.01	mg/kg	0.01	A-T-056
Trichloronate <sub>A</sub>	<0.01	-	-	<0.01	-	-	<0.01	mg/kg	0.01	A-T-056
Chlorfenvinphos <sub>A</sub>	<0.01	-	-	<0.01	-	-	<0.01	mg/kg	0.01	A-T-056
Fensulphothion <sub>A</sub>	<0.01	-	-	<0.01	-	-	<0.01	mg/kg	0.01	A-T-056
Ethion <sub>A</sub>	<0.01	-	-	<0.01	-	-	<0.01	mg/kg	0.01	A-T-056
Triazophos <sub>A</sub>	<0.01	-	-	<0.01	-	-	<0.01	mg/kg	0.01	A-T-056
Sulprofos <sub>A</sub>	<0.01	-	-	<0.01	-	-	<0.01	mg/kg	0.01	A-T-056
Carbophenothion <sub>A</sub>	<0.01	-	-	<0.01	-	-	<0.01	mg/kg	0.01	A-T-056
Phosalone <sub>A</sub>	<0.01	-	-	<0.01	-	-	<0.01	mg/kg	0.01	A-T-056
Azinphos-methyl <sub>A</sub>	<0.01	-	-	<0.01	-	-	<0.01	mg/kg	0.01	A-T-056
Azinphos-ethyl <sub>A</sub>	<0.01	-	-	<0.01	-	-	<0.01	mg/kg	0.01	A-T-056

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Client Project Name: West Winch By Pass

Client Project Ref: 100746

Lab Sample ID	20/06245/8	20/06245/9	20/06245/10	20/06245/11	20/06245/12	20/06245/13	20/06245/14	Units	Limit of Detection	Method ref
Client Sample No	1	1	2							
Client Sample ID	214	215	210	101	101	102	103			
Depth to Top	0.50	0.50	0.70	0.10	0.40	0.30	0.30			
Depth To Bottom							0.60			
Date Sampled	24-Jul-20	24-Jul-20	24-Jul-20	24-Jul-20	24-Jul-20	24-Jul-20	27-Jul-20			
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES			
Sample Matrix Code	1AE	1AE	5AE	4AE	1AE	5AE	1AB			
Coumaphos <sub>A</sub>	<0.01	-	-	<0.01	-	-	<0.01	mg/kg	0.01	A-T-056
Prothiofos (Tokuthion) <sub>A</sub>	<0.01	-	-	<0.01	-	-	<0.01	mg/kg	0.01	A-T-056

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Client Project Name: West Winch By Pass

Client Project Ref: 100746

Lab Sample ID	20/06245/8	20/06245/9	20/06245/10	20/06245/11	20/06245/12	20/06245/13	20/06245/14	Units	Limit of Detection	Method ref
Client Sample No	1	1	2							
Client Sample ID	214	215	210	101	101	102	103			
Depth to Top	0.50	0.50	0.70	0.10	0.40	0.30	0.30			
Depth To Bottom							0.60			
Date Sampled	24-Jul-20	24-Jul-20	24-Jul-20	24-Jul-20	24-Jul-20	24-Jul-20	27-Jul-20			
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES			
Sample Matrix Code	1AE	1AE	5AE	4AE	1AE	5AE	1AB			
PAH-16MS										
Acenaphthene <sub>A</sub> <sup>M#</sup>	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-019s
Acenaphthylene <sub>A</sub> <sup>M#</sup>	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-019s
Anthracene <sub>A</sub> <sup>M#</sup>	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	mg/kg	0.02	A-T-019s
Benzo(a)anthracene <sub>A</sub> <sup>M#</sup>	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	mg/kg	0.04	A-T-019s
Benzo(a)pyrene <sub>A</sub> <sup>M#</sup>	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene <sub>A</sub> <sup>M#</sup>	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	mg/kg	0.05	A-T-019s
Benzo(ghi)perylene <sub>A</sub> <sup>M#</sup>	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene <sub>A</sub> <sup>M#</sup>	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	mg/kg	0.07	A-T-019s
Chrysene <sub>A</sub> <sup>M#</sup>	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene <sub>A</sub> <sup>M#</sup>	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	mg/kg	0.04	A-T-019s
Fluoranthene <sub>A</sub> <sup>M#</sup>	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	mg/kg	0.08	A-T-019s
Fluorene <sub>A</sub> <sup>M#</sup>	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene <sub>A</sub> <sup>M#</sup>	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	mg/kg	0.03	A-T-019s
Naphthalene <sub>A</sub> <sup>M#</sup>	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	mg/kg	0.03	A-T-019s
Phenanthrene <sub>A</sub> <sup>M#</sup>	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	mg/kg	0.03	A-T-019s
Pyrene <sub>A</sub> <sup>M#</sup>	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	mg/kg	0.07	A-T-019s
Total PAH-16MS <sub>A</sub> <sup>M#</sup>	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	mg/kg	0.01	A-T-019s

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Client Project Ref: 100746

Lab Sample ID	20/06245/8	20/06245/9	20/06245/10	20/06245/11	20/06245/12	20/06245/13	20/06245/14	Units	Limit of Detection	Method ref
Client Sample No	1	1	2							
Client Sample ID	214	215	210	101	101	102	103			
Depth to Top	0.50	0.50	0.70	0.10	0.40	0.30	0.30			
Depth To Bottom							0.60			
Date Sampled	24-Jul-20	24-Jul-20	24-Jul-20	24-Jul-20	24-Jul-20	24-Jul-20	27-Jul-20			
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES			
Sample Matrix Code	1AE	1AE	5AE	4AE	1AE	5AE	1AB			
Speciated PCB-EC7										
PCB BZ 28 <sub>A</sub>	<0.002	-	-	<0.002	-	-	<0.002	mg/kg	0.002	A-T-004s
PCB BZ 52 <sub>A</sub> <sup>M#</sup>	<0.002	-	-	<0.002	-	-	<0.002	mg/kg	0.002	A-T-004s
PCB BZ 101 <sub>A</sub> <sup>M#</sup>	<0.004	-	-	<0.004	-	-	<0.004	mg/kg	0.004	A-T-004s
PCB BZ 118 <sub>A</sub> <sup>M#</sup>	<0.007	-	-	<0.007	-	-	<0.007	mg/kg	0.007	A-T-004s
PCB BZ 138 <sub>A</sub> <sup>M#</sup>	<0.006	-	-	<0.006	-	-	<0.006	mg/kg	0.006	A-T-004s
PCB BZ 153 <sub>A</sub> <sup>M#</sup>	<0.004	-	-	<0.004	-	-	<0.004	mg/kg	0.004	A-T-004s
PCB BZ 180 <sub>A</sub> <sup>M#</sup>	<0.004	-	-	<0.004	-	-	<0.004	mg/kg	0.004	A-T-004s
Total Speciated PCB-EC7 <sub>A</sub>	<0.007	-	-	<0.007	-	-	<0.007	mg/kg	0.002	A-T-004s

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Lab Sample ID	20/06245/8	20/06245/9	20/06245/10	20/06245/11	20/06245/12	20/06245/13	20/06245/14	Units	Limit of Detection	Method ref
Client Sample No	1	1	2							
Client Sample ID	214	215	210	101	101	102	103			
Depth to Top	0.50	0.50	0.70	0.10	0.40	0.30	0.30			
Depth To Bottom							0.60			
Date Sampled	24-Jul-20	24-Jul-20	24-Jul-20	24-Jul-20	24-Jul-20	24-Jul-20	27-Jul-20			
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES			
Sample Matrix Code	1AE	1AE	5AE	4AE	1AE	5AE	1AB			
<b>SVOC</b>										
Hexachlorobenzene <sub>A</sub>	<100	-	-	<100	-	-	<100	µg/kg	100	A-T-052s
Diethyl phthalate <sub>A</sub>	<100	-	-	<100	-	-	<100	µg/kg	100	A-T-052s
Dimethyl phthalate <sub>A</sub>	<100	-	-	<100	-	-	<100	µg/kg	100	A-T-052s
Dibenzofuran <sub>A</sub>	<100	-	-	<100	-	-	<100	µg/kg	100	A-T-052s
Carbazole <sub>A</sub>	<100	-	-	<100	-	-	<100	µg/kg	100	A-T-052s
Butylbenzyl phthalate <sub>A</sub>	<100	-	-	<100	-	-	<100	µg/kg	100	A-T-052s
Bis(2-ethylhexyl)phthalate <sub>A</sub>	<500	-	-	<500	-	-	<500	µg/kg	500	A-T-052s
Bis(2-chloroethoxy)methane <sub>A</sub>	<100	-	-	<100	-	-	<100	µg/kg	100	A-T-052s
Bis(2-chloroethyl)ether <sub>A</sub>	<100	-	-	<100	-	-	<100	µg/kg	100	A-T-052s
4-Nitrophenol <sub>A</sub>	<100	-	-	<100	-	-	<100	µg/kg	100	A-T-052s
3+4-Methylphenol <sub>A</sub>	<100	-	-	<100	-	-	<100	µg/kg	100	A-T-052s
4-Chloro-3-methylphenol <sub>A</sub>	<100	-	-	<100	-	-	<100	µg/kg	100	A-T-052s
2-Nitrophenol <sub>A</sub>	<100	-	-	<100	-	-	<100	µg/kg	100	A-T-052s
2-Methylphenol <sub>A</sub>	<100	-	-	<100	-	-	<100	µg/kg	100	A-T-052s
2-Chlorophenol <sub>A</sub>	<100	-	-	<100	-	-	<100	µg/kg	100	A-T-052s
2,6-Dinitrotoluene <sub>A</sub>	<100	-	-	<100	-	-	<100	µg/kg	100	A-T-052s
2,4-Dinitrotoluene <sub>A</sub>	<100	-	-	<100	-	-	<100	µg/kg	100	A-T-052s
2,4-Dimethylphenol <sub>A</sub>	<100	-	-	<100	-	-	<100	µg/kg	100	A-T-052s
2,4-Dichlorophenol <sub>A</sub>	<100	-	-	<100	-	-	<100	µg/kg	100	A-T-052s
2,4,6-Trichlorophenol <sub>A</sub>	<100	-	-	<100	-	-	<100	µg/kg	100	A-T-052s
2,4,5-Trichlorophenol <sub>A</sub>	<100	-	-	<100	-	-	<100	µg/kg	100	A-T-052s
2-Chloronaphthalene <sub>A</sub>	<100	-	-	<100	-	-	<100	µg/kg	100	A-T-052s
2-Methylnaphthalene <sub>A</sub>	<100	-	-	<100	-	-	<100	µg/kg	100	A-T-052s
Bis(2-chloroisopropyl)ether <sub>A</sub>	<100	-	-	<100	-	-	<100	µg/kg	100	A-T-052s
Phenol <sub>A</sub>	<100	-	-	<100	-	-	<100	µg/kg	100	A-T-052s
Pentachlorophenol (SVOC) <sub>A</sub>	<100	-	-	<100	-	-	<100	µg/kg	100	A-T-052s
n-Nitroso-n-dipropylamine <sub>A</sub>	<100	-	-	<100	-	-	<100	µg/kg	100	A-T-052s
n-Diethylphthalate <sub>A</sub>	<500	-	-	<500	-	-	<500	µg/kg	500	A-T-052s
n-Dibutylphthalate <sub>A</sub>	<100	-	-	<100	-	-	<100	µg/kg	100	A-T-052s
Nitrobenzene <sub>A</sub>	<100	-	-	<100	-	-	<100	µg/kg	100	A-T-052s
Isophorone <sub>A</sub>	<100	-	-	<100	-	-	<100	µg/kg	100	A-T-052s
Hexachloroethane <sub>A</sub>	<100	-	-	<100	-	-	<100	µg/kg	100	A-T-052s

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Client Project Name: West Winch By Pass

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Lab Sample ID	20/06245/8	20/06245/9	20/06245/10	20/06245/11	20/06245/12	20/06245/13	20/06245/14	Units	Limit of Detection	Method ref
Client Sample No	1	1	2							
Client Sample ID	214	215	210	101	101	102	103			
Depth to Top	0.50	0.50	0.70	0.10	0.40	0.30	0.30			
Depth To Bottom							0.60			
Date Sampled	24-Jul-20	24-Jul-20	24-Jul-20	24-Jul-20	24-Jul-20	24-Jul-20	27-Jul-20			
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES			
Sample Matrix Code	1AE	1AE	5AE	4AE	1AE	5AE	1AB			
Hexachlorocyclopentadiene <sub>A</sub>	<100	-	-	<100	-	-	<100			
Perylene <sub>A</sub>	<100	-	-	<100	-	-	<100	µg/kg	100	A-T-052s

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Lab Sample ID	20/06245/8	20/06245/9	20/06245/10	20/06245/11	20/06245/12	20/06245/13	20/06245/14	Units	Limit of Detection	Method ref
Client Sample No	1	1	2							
Client Sample ID	214	215	210	101	101	102	103			
Depth to Top	0.50	0.50	0.70	0.10	0.40	0.30	0.30			
Depth To Bottom							0.60			
Date Sampled	24-Jul-20	24-Jul-20	24-Jul-20	24-Jul-20	24-Jul-20	24-Jul-20	27-Jul-20			
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES			
Sample Matrix Code	1AE	1AE	5AE	4AE	1AE	5AE	1AB			
VOC										
Dichlorodifluoromethane <sub>A</sub>	<1	-	-	<1	-	-	<1	µg/kg	1	A-T-006s
Chloromethane <sub>A</sub>	<10	-	-	<10	-	-	<10	µg/kg	10	A-T-006s
Vinyl Chloride (Chloroethene) <sub>A</sub> <sup>#</sup>	<1	-	-	<1	-	-	<1	µg/kg	1	A-T-006s
Bromomethane <sub>A</sub> <sup>#</sup>	<1	-	-	<1	-	-	<1	µg/kg	1	A-T-006s
Chloroethane <sub>A</sub> <sup>#</sup>	<1	-	-	<1	-	-	<1	µg/kg	1	A-T-006s
Trichlorofluoromethane <sub>A</sub> <sup>#</sup>	<1	-	-	<1	-	-	<1	µg/kg	1	A-T-006s
1,1-Dichloroethene <sub>A</sub> <sup>#</sup>	<1	-	-	<1	-	-	<1	µg/kg	1	A-T-006s
Carbon Disulphide <sub>A</sub> <sup>#</sup>	<1	-	-	<1	-	-	<1	µg/kg	1	A-T-006s
Dichloromethane <sub>A</sub>	<5	-	-	<5	-	-	<5	µg/kg	5	A-T-006s
trans 1,2-Dichloroethene <sub>A</sub> <sup>#</sup>	<1	-	-	<1	-	-	<1	µg/kg	1	A-T-006s
1,1-Dichloroethane <sub>A</sub> <sup>#</sup>	<1	-	-	<1	-	-	<1	µg/kg	1	A-T-006s
cis 1,2-Dichloroethene <sub>A</sub> <sup>#</sup>	<1	-	-	<1	-	-	<1	µg/kg	1	A-T-006s
2,2-Dichloropropane <sub>A</sub> <sup>#</sup>	<1	-	-	<1	-	-	<1	µg/kg	1	A-T-006s
Bromochloromethane <sub>A</sub> <sup>#</sup>	<5	-	-	<5	-	-	<5	µg/kg	5	A-T-006s
Chloroform <sub>A</sub> <sup>#</sup>	<1	-	-	<1	-	-	<1	µg/kg	1	A-T-006s
1,1,1-Trichloroethane <sub>A</sub> <sup>#</sup>	<1	-	-	<1	-	-	<1	µg/kg	1	A-T-006s
1,1-Dichloropropene <sub>A</sub> <sup>#</sup>	<1	-	-	<1	-	-	<1	µg/kg	1	A-T-006s
Carbon Tetrachloride <sub>A</sub> <sup>#</sup>	<1	-	-	<1	-	-	<1	µg/kg	1	A-T-006s
1,2-Dichloroethane <sub>A</sub> <sup>#</sup>	<2	-	-	<2	-	-	<2	µg/kg	2	A-T-006s
Benzene <sub>A</sub> <sup>#</sup>	<1	-	-	<1	-	-	<1	µg/kg	1	A-T-006s
Trichloroethene <sub>A</sub> <sup>#</sup>	<1	-	-	<1	-	-	<1	µg/kg	1	A-T-006s
1,2-Dichloropropane <sub>A</sub> <sup>#</sup>	<1	-	-	<1	-	-	<1	µg/kg	1	A-T-006s
Dibromomethane <sub>A</sub> <sup>#</sup>	<1	-	-	<1	-	-	<1	µg/kg	1	A-T-006s
Bromodichloromethane <sub>A</sub> <sup>#</sup>	<10	-	-	<10	-	-	<10	µg/kg	10	A-T-006s
cis 1,3-Dichloropropene <sub>A</sub> <sup>#</sup>	<1	-	-	<1	-	-	<1	µg/kg	1	A-T-006s
Toluene <sub>A</sub> <sup>#</sup>	<1	-	-	<1	-	-	<1	µg/kg	1	A-T-006s
trans 1,3-Dichloropropene <sub>A</sub> <sup>#</sup>	<1	-	-	<1	-	-	<1	µg/kg	1	A-T-006s
1,1,2-Trichloroethane <sub>A</sub> <sup>#</sup>	<1	-	-	<1	-	-	<1	µg/kg	1	A-T-006s
1,3-Dichloropropane <sub>A</sub> <sup>#</sup>	<1	-	-	<1	-	-	<1	µg/kg	1	A-T-006s
Tetrachloroethene <sub>A</sub> <sup>#</sup>	<1	-	-	<1	-	-	<1	µg/kg	1	A-T-006s
Dibromochloromethane <sub>A</sub> <sup>#</sup>	<3	-	-	<3	-	-	<3	µg/kg	3	A-T-006s
1,2-Dibromoethane <sub>A</sub> <sup>#</sup>	<1	-	-	<1	-	-	<1	µg/kg	1	A-T-006s



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Client Project Name: West Winch By Pass

Client Project Ref: 100746

Lab Sample ID	20/06245/8	20/06245/9	20/06245/10	20/06245/11	20/06245/12	20/06245/13	20/06245/14	Units	Limit of Detection	Method ref
Client Sample No	1	1	2							
Client Sample ID	214	215	210	101	101	102	103			
Depth to Top	0.50	0.50	0.70	0.10	0.40	0.30	0.30			
Depth To Bottom							0.60			
Date Sampled	24-Jul-20	24-Jul-20	24-Jul-20	24-Jul-20	24-Jul-20	24-Jul-20	27-Jul-20			
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES			
Sample Matrix Code	1AE	1AE	5AE	4AE	1AE	5AE	1AB			
Chlorobenzene <sub>A</sub> <sup>#</sup>	<1	-	-	<1	-	-	<1			
1,1,1,2-Tetrachloroethane <sub>A</sub>	<1	-	-	<1	-	-	<1	µg/kg	1	A-T-006s
Ethylbenzene <sub>A</sub> <sup>#</sup>	<1	-	-	<1	-	-	<1	µg/kg	1	A-T-006s
m & p Xylene <sub>A</sub> <sup>#</sup>	<1	-	-	<1	-	-	<1	µg/kg	1	A-T-006s
o-Xylene <sub>A</sub> <sup>#</sup>	<1	-	-	<1	-	-	<1	µg/kg	1	A-T-006s
Styrene <sub>A</sub> <sup>#</sup>	<1	-	-	<1	-	-	<1	µg/kg	1	A-T-006s
Bromoform <sub>A</sub> <sup>#</sup>	<1	-	-	<1	-	-	<1	µg/kg	1	A-T-006s
Isopropylbenzene <sub>A</sub> <sup>#</sup>	<1	-	-	<1	-	-	<1	µg/kg	1	A-T-006s
1,1,2,2-Tetrachloroethane <sub>A</sub>	<1	-	-	<1	-	-	<1	µg/kg	1	A-T-006s
1,2,3-Trichloropropane <sub>A</sub> <sup>#</sup>	<1	-	-	<1	-	-	<1	µg/kg	1	A-T-006s
Bromobenzene <sub>A</sub> <sup>#</sup>	<1	-	-	<1	-	-	<1	µg/kg	1	A-T-006s
n-Propylbenzene <sub>A</sub> <sup>#</sup>	<1	-	-	<1	-	-	<1	µg/kg	1	A-T-006s
2-Chlorotoluene <sub>A</sub> <sup>#</sup>	<1	-	-	<1	-	-	<1	µg/kg	1	A-T-006s
1,3,5-Trimethylbenzene <sub>A</sub> <sup>#</sup>	<1	-	-	<1	-	-	<1	µg/kg	1	A-T-006s
4-Chlorotoluene <sub>A</sub> <sup>#</sup>	<1	-	-	<1	-	-	<1	µg/kg	1	A-T-006s
tert-Butylbenzene <sub>A</sub> <sup>#</sup>	<2	-	-	<2	-	-	<2	µg/kg	2	A-T-006s
1,2,4-Trimethylbenzene <sub>A</sub> <sup>#</sup>	<1	-	-	<1	-	-	<1	µg/kg	1	A-T-006s
sec-Butylbenzene <sub>A</sub> <sup>#</sup>	<1	-	-	<1	-	-	<1	µg/kg	1	A-T-006s
4-Isopropyltoluene <sub>A</sub> <sup>#</sup>	<1	-	-	<1	-	-	<1	µg/kg	1	A-T-006s
1,3-Dichlorobenzene <sub>A</sub>	<1	-	-	<1	-	-	<1	µg/kg	1	A-T-006s
1,4-Dichlorobenzene <sub>A</sub> <sup>#</sup>	<1	-	-	<1	-	-	<1	µg/kg	1	A-T-006s
n-Butylbenzene <sub>A</sub> <sup>#</sup>	<1	-	-	<1	-	-	<1	µg/kg	1	A-T-006s
1,2-Dichlorobenzene <sub>A</sub> <sup>#</sup>	<1	-	-	<1	-	-	<1	µg/kg	1	A-T-006s
1,2-Dibromo-3-chloropropane (DCBP) <sub>A</sub>	<2	-	-	<2	-	-	<2	µg/kg	2	A-T-006s
1,2,4-Trichlorobenzene <sub>A</sub>	<3	-	-	<3	-	-	<3	µg/kg	3	A-T-006s
Hexachlorobutadiene <sub>A</sub> <sup>#</sup>	<1	-	-	<1	-	-	<1	µg/kg	1	A-T-006s
1,2,3-Trichlorobenzene <sub>A</sub>	<3	-	-	<3	-	-	<3	µg/kg	3	A-T-006s

Envirolab Job Number: 20/06245

Client Project Name: West Winch By Pass

Client Project Ref: 100746

Lab Sample ID	20/06245/8	20/06245/9	20/06245/10	20/06245/11	20/06245/12	20/06245/13	20/06245/14	Units	Limit of Detection	Method ref
Client Sample No	1	1	2							
Client Sample ID	214	215	210	101	101	102	103			
Depth to Top	0.50	0.50	0.70	0.10	0.40	0.30	0.30			
Depth To Bottom							0.60			
Date Sampled	24-Jul-20	24-Jul-20	24-Jul-20	24-Jul-20	24-Jul-20	24-Jul-20	27-Jul-20			
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES			
Sample Matrix Code	1AE	1AE	5AE	4AE	1AE	5AE	1AB			
TPH UKCWG										
Ali >C5-C6 <sub>A</sub> <sup>#</sup>	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
Ali >C6-C8 <sub>A</sub> <sup>#</sup>	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
Ali >C8-C10 <sub>A</sub>	<1	<1	<1	<1	<1	<1	<1	mg/kg	1	A-T-055s
Ali >C10-C12 <sub>A</sub> <sup>M#</sup>	<1	<1	<1	<1	<1	<1	<1	mg/kg	1	A-T-055s
Ali >C12-C16 <sub>A</sub> <sup>M#</sup>	<1	<1	<1	<1	<1	<1	<1	mg/kg	1	A-T-055s
Ali >C16-C21 <sub>A</sub> <sup>M#</sup>	<1	<1	<1	<1	<1	<1	<1	mg/kg	1	A-T-055s
Ali >C21-C35 <sub>A</sub>	2	<1	<1	8	3	<1	3	mg/kg	1	A-T-055s
Ali >C35-C44 <sub>A</sub>	<1	<1	<1	1	<1	<1	<1	mg/kg	1	A-T-055s
Total Aliphatics <sub>A</sub>	2	<1	<1	10	3	<1	3	mg/kg	1	A-T-055s
Aro >C5-C7 <sub>A</sub> <sup>#</sup>	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
Aro >C7-C8 <sub>A</sub> <sup>#</sup>	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
Aro >C8-C10 <sub>A</sub>	<1	<1	<1	<1	<1	<1	<1	mg/kg	1	A-T-055s
Aro >C10-C12 <sub>A</sub> <sup>M#</sup>	<1	<1	<1	<1	<1	<1	<1	mg/kg	1	A-T-055s
Aro >C12-C16 <sub>A</sub>	<1	<1	<1	<1	<1	<1	<1	mg/kg	1	A-T-055s
Aro >C16-C21 <sub>A</sub> <sup>M#</sup>	<1	<1	<1	<1	<1	<1	<1	mg/kg	1	A-T-055s
Aro >C21-C35 <sub>A</sub> <sup>M#</sup>	2	<1	<1	5	2	<1	<1	mg/kg	1	A-T-055s
Aro >C35-C44 <sub>A</sub>	<1	<1	<1	2	3	<1	<1	mg/kg	1	A-T-055s
Total Aromatics <sub>A</sub>	2	<1	<1	8	5	<1	<1	mg/kg	1	A-T-055s
TPH (Ali & Aro >C5-C44) <sub>A</sub>	5	<1	<1	16	7	<1	3	mg/kg	1	A-T-055s
BTEX - Benzene <sub>A</sub> <sup>#</sup>	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
BTEX - Toluene <sub>A</sub> <sup>#</sup>	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene <sub>A</sub> <sup>#</sup>	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
BTEX - m & p Xylene <sub>A</sub> <sup>#</sup>	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
BTEX - o Xylene <sub>A</sub> <sup>#</sup>	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
MTBE <sub>A</sub> <sup>#</sup>	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s

Envirolab Job Number: 20/06245

Client Project Name: West Winch By Pass

Client Project Ref: 100746

Lab Sample ID	20/06245/15	20/06245/16								
Client Sample No										
Client Sample ID	105	107								
Depth to Top	0.30	0.40								
Depth To Bottom		0.70								
Date Sampled	27-Jul-20	27-Jul-20								
Sample Type	Soil - ES	Soil - ES								
Sample Matrix Code	1ABE	1AB								
								Units	Limit of Detection	Method ref
% Stones >10mm <sub>A</sub>	5.2	12.6						% w/w	0.1	A-T-044
pH <sub>D</sub> <sup>M#</sup>	7.62	7.19						pH	0.01	A-T-031s
Sulphate (water sol 2:1) <sub>D</sub> <sup>M#</sup>	<0.01	0.02						g/l	0.01	A-T-026s
Sulphate (acid soluble) <sub>D</sub> <sup>M#</sup>	<200	<200						mg/kg	200	A-T-028s
Cyanide (total) <sub>A</sub> <sup>M#</sup>	<1	<1						mg/kg	1	A-T-042sTCN
Phenols - Total by HPLC <sub>A</sub>	<0.2	<0.2						mg/kg	0.2	A-T-050s
Sulphide <sub>A</sub>	67	14						mg/kg	5	A-T-S2-s
Sulphur (elemental) <sub>D</sub> <sup>M#</sup>	<5	<5						mg/kg	5	A-T-029s
Organic matter <sub>D</sub> <sup>M#</sup>	0.5	0.4						% w/w	0.1	A-T-032 OM
Arsenic <sub>D</sub> <sup>M#</sup>	5	3						mg/kg	1	A-T-024s
Boron (water soluble) <sub>D</sub>	<1.0	<1.0						mg/kg	1	A-T-027s
Cadmium <sub>D</sub> <sup>M#</sup>	<0.5	<0.5						mg/kg	0.5	A-T-024s
Copper <sub>D</sub> <sup>M#</sup>	6	4						mg/kg	1	A-T-024s
Chromium <sub>D</sub> <sup>M#</sup>	12	7						mg/kg	1	A-T-024s
Chromium (hexavalent) <sub>D</sub>	<1	<1						mg/kg	1	A-T-040s
Lead <sub>D</sub> <sup>M#</sup>	9	4						mg/kg	1	A-T-024s
Mercury <sub>D</sub>	<0.17	<0.17						mg/kg	0.17	A-T-024s
Nickel <sub>D</sub> <sup>M#</sup>	10	5						mg/kg	1	A-T-024s
Selenium <sub>D</sub> <sup>M#</sup>	<1	<1						mg/kg	1	A-T-024s
Zinc <sub>D</sub> <sup>M#</sup>	28	15						mg/kg	5	A-T-024s

Envirolab Job Number: 20/06245

Client Project Name: West Winch By Pass

Client Project Ref: 100746

Lab Sample ID	20/06245/15	20/06245/16						Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	105	107								
Depth to Top	0.30	0.40								
Depth To Bottom		0.70								
Date Sampled	27-Jul-20	27-Jul-20								
Sample Type	Soil - ES	Soil - ES								
Sample Matrix Code	1ABE	1AB								
PAH-16MS										
Acenaphthene <sub>A</sub> <sup>M#</sup>	<0.01	<0.01						mg/kg	0.01	A-T-019s
Acenaphthylene <sub>A</sub> <sup>M#</sup>	<0.01	<0.01						mg/kg	0.01	A-T-019s
Anthracene <sub>A</sub> <sup>M#</sup>	<0.02	<0.02						mg/kg	0.02	A-T-019s
Benzo(a)anthracene <sub>A</sub> <sup>M#</sup>	<0.04	<0.04						mg/kg	0.04	A-T-019s
Benzo(a)pyrene <sub>A</sub> <sup>M#</sup>	<0.04	<0.04						mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene <sub>A</sub> <sup>M#</sup>	<0.05	<0.05						mg/kg	0.05	A-T-019s
Benzo(ghi)perylene <sub>A</sub> <sup>M#</sup>	<0.05	<0.05						mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene <sub>A</sub> <sup>M#</sup>	<0.07	<0.07						mg/kg	0.07	A-T-019s
Chrysene <sub>A</sub> <sup>M#</sup>	<0.06	<0.06						mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene <sub>A</sub> <sup>M#</sup>	<0.04	<0.04						mg/kg	0.04	A-T-019s
Fluoranthene <sub>A</sub> <sup>M#</sup>	<0.08	<0.08						mg/kg	0.08	A-T-019s
Fluorene <sub>A</sub> <sup>M#</sup>	<0.01	<0.01						mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene <sub>A</sub> <sup>M#</sup>	<0.03	<0.03						mg/kg	0.03	A-T-019s
Naphthalene <sub>A</sub> <sup>M#</sup>	<0.03	<0.03						mg/kg	0.03	A-T-019s
Phenanthrene <sub>A</sub> <sup>M#</sup>	<0.03	<0.03						mg/kg	0.03	A-T-019s
Pyrene <sub>A</sub> <sup>M#</sup>	<0.07	<0.07						mg/kg	0.07	A-T-019s
Total PAH-16MS <sub>A</sub> <sup>M#</sup>	<0.08	<0.08						mg/kg	0.01	A-T-019s

Envirolab Job Number: 20/06245

Client Project Name: West Winch By Pass

Client Project Ref: 100746

Lab Sample ID	20/06245/15	20/06245/16						Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	105	107								
Depth to Top	0.30	0.40								
Depth To Bottom		0.70								
Date Sampled	27-Jul-20	27-Jul-20								
Sample Type	Soil - ES	Soil - ES								
Sample Matrix Code	1ABE	1AB								
TPH UKCWG										
Ali >C5-C6 <sub>A</sub> <sup>#</sup>	<0.01	<0.01					mg/kg	0.01	A-T-022s	
Ali >C6-C8 <sub>A</sub> <sup>#</sup>	<0.01	<0.01					mg/kg	0.01	A-T-022s	
Ali >C8-C10 <sub>A</sub>	<1	<1					mg/kg	1	A-T-055s	
Ali >C10-C12 <sub>A</sub> <sup>M#</sup>	<1	<1					mg/kg	1	A-T-055s	
Ali >C12-C16 <sub>A</sub> <sup>M#</sup>	<1	<1					mg/kg	1	A-T-055s	
Ali >C16-C21 <sub>A</sub> <sup>M#</sup>	<1	<1					mg/kg	1	A-T-055s	
Ali >C21-C35 <sub>A</sub>	<1	<1					mg/kg	1	A-T-055s	
Ali >C35-C44 <sub>A</sub>	<1	<1					mg/kg	1	A-T-055s	
Total Aliphatics <sub>A</sub>	<1	<1					mg/kg	1	A-T-055s	
Aro >C5-C7 <sub>A</sub> <sup>#</sup>	<0.01	<0.01					mg/kg	0.01	A-T-022s	
Aro >C7-C8 <sub>A</sub> <sup>#</sup>	<0.01	<0.01					mg/kg	0.01	A-T-022s	
Aro >C8-C10 <sub>A</sub>	<1	<1					mg/kg	1	A-T-055s	
Aro >C10-C12 <sub>A</sub> <sup>M#</sup>	<1	<1					mg/kg	1	A-T-055s	
Aro >C12-C16 <sub>A</sub>	<1	<1					mg/kg	1	A-T-055s	
Aro >C16-C21 <sub>A</sub> <sup>M#</sup>	<1	<1					mg/kg	1	A-T-055s	
Aro >C21-C35 <sub>A</sub> <sup>M#</sup>	<1	<1					mg/kg	1	A-T-055s	
Aro >C35-C44 <sub>A</sub>	<1	<1					mg/kg	1	A-T-055s	
Total Aromatics <sub>A</sub>	<1	<1					mg/kg	1	A-T-055s	
TPH (Ali & Aro >C5-C44) <sub>A</sub>	<1	<1					mg/kg	1	A-T-055s	
BTEX - Benzene <sub>A</sub> <sup>#</sup>	<0.01	<0.01					mg/kg	0.01	A-T-022s	
BTEX - Toluene <sub>A</sub> <sup>#</sup>	<0.01	<0.01					mg/kg	0.01	A-T-022s	
BTEX - Ethyl Benzene <sub>A</sub> <sup>#</sup>	<0.01	<0.01					mg/kg	0.01	A-T-022s	
BTEX - m & p Xylene <sub>A</sub> <sup>#</sup>	<0.01	<0.01					mg/kg	0.01	A-T-022s	
BTEX - o Xylene <sub>A</sub> <sup>#</sup>	<0.01	<0.01					mg/kg	0.01	A-T-022s	
MTBE <sub>A</sub> <sup>#</sup>	<0.01	<0.01					mg/kg	0.01	A-T-022s	

## **REPORT NOTES**

### **General**

This report shall not be reproduced, except in full, without written approval from Envirolab.

The results reported herein relate only to the material supplied to the laboratory.

The residue of any samples contained within this report, and any received with the same delivery, will be disposed of six weeks after initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of six months after the initial Asbestos testing is completed.

Analytical results reflect the quality of the sample at the time of analysis only.

Opinions and interpretations expressed are outside the scope of our accreditation.

If results are in italic font they are associated with an AQC failure, these are not accredited and are unreliable.

A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.

The Client Sample No, Client Sample ID, Depth to Top, Depth to Bottom and Date Sampled were all provided by the client.

### **Soil chemical analysis:**

All results are reported as dry weight (<40°C).

For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.

For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts

All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

### **TPH analysis of water by method A-T-007:**

Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

### **Electrical Conductivity of water by Method A-T-037:**

Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the calibration range and as such are unaccredited.

### **Asbestos:**

Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.

Stones etc. are not removed from the sample prior to analysis.

Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

### **Predominant Matrix Codes:**

1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample.

Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.

### **Secondary Matrix Codes:**

A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal,

E = contains roots/twigs.

### **Key:**

IS indicates Insufficient Sample for analysis.

US indicates Unsuitable Sample for analysis.

NDP indicates No Determination Possible.

NAD indicates No Asbestos Detected.

N/A indicates Not Applicable.

Superscript # indicates method accredited to ISO 17025.

Superscript "M" indicates method accredited to MCERTS.

Subscript "A" indicates analysis performed on the sample as received.

Subscript "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve

Please contact us if you need any further information.

## FINAL ANALYTICAL TEST REPORT

**Envirolab Job Number:** 20/06509  
**Issue Number:** 1  
**Date:** 14 August, 2020

**Client:** Norse Eastern Ltd t/a Norse Highways  
280 Fifers Lane  
Norwich  
Norfolk  
NR6 6EQ

**Project Manager:** Civil Lab/Sharon Woods; Simon Holden  
**Project Name:** West Winch By Pass  
**Project Ref:** 100746  
**Order No:** PN05006788  
**Date Samples Received:** 06/08/20  
**Date Instructions Received:** 06/08/20  
**Date Analysis Completed:** 14/08/20

**Prepared by:**



Sophie France  
Client Service Manager

**Approved by:**



John Gustafson  
Managing Director

Envirolab Job Number: 20/06509

Client Project Name: West Winch By Pass

Client Project Ref: 100746

Lab Sample ID	20/06509/1	20/06509/2	20/06509/3					Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	106	208	211							
Depth to Top	0.5	0.5	0.4							
Depth To Bottom										
Date Sampled	01-Aug-20	01-Aug-20	01-Aug-20							
Sample Type	Soil - ES	Soil - ES	Soil - ES							
Sample Matrix Code	6AB	4AE	6AE							
% Stones >10mm <sub>A</sub>	15.1	0.5	<0.1							
pH <sub>D</sub> <sup>M#</sup>	7.71	7.16	7.69					pH	0.01	A-T-031s
Sulphate (water sol 2:1) <sub>D</sub> <sup>M#</sup>	<0.01	<0.01	<0.01					g/l	0.01	A-T-026s
Sulphate (acid soluble) <sub>D</sub> <sup>M#</sup>	<200	<200	210					mg/kg	200	A-T-028s
Cyanide (total) <sub>A</sub> <sup>M#</sup>	<1	<1	<1					mg/kg	1	A-T-042sTCN
Phenols - Total by HPLC <sub>A</sub>	<0.2	<0.2	<0.2					mg/kg	0.2	A-T-050s
Sulphide <sub>A</sub>	<5	<5	<5					mg/kg	5	A-T-S2-s
Sulphur (elemental) <sub>D</sub> <sup>M#</sup>	<5	<5	<5					mg/kg	5	A-T-029s
Organic matter <sub>D</sub> <sup>M#</sup>	1.0	0.8	1.7					% w/w	0.1	A-T-032 OM
Arsenic <sub>D</sub> <sup>M#</sup>	2	4	6					mg/kg	1	A-T-024s
Boron (water soluble) <sub>D</sub>	<1.0	<1.0	<1.0					mg/kg	1	A-T-027s
Cadmium <sub>D</sub> <sup>M#</sup>	<0.5	<0.5	<0.5					mg/kg	0.5	A-T-024s
Copper <sub>D</sub> <sup>M#</sup>	3	4	7					mg/kg	1	A-T-024s
Chromium <sub>D</sub> <sup>M#</sup>	8	6	11					mg/kg	1	A-T-024s
Chromium (hexavalent) <sub>D</sub>	<1	<1	<1					mg/kg	1	A-T-040s
Lead <sub>D</sub> <sup>M#</sup>	10	7	19					mg/kg	1	A-T-024s
Mercury <sub>D</sub>	0.18	<0.17	<0.17					mg/kg	0.17	A-T-024s
Nickel <sub>D</sub> <sup>M#</sup>	6	4	7					mg/kg	1	A-T-024s
Selenium <sub>D</sub> <sup>M#</sup>	<1	<1	<1					mg/kg	1	A-T-024s
Zinc <sub>D</sub> <sup>M#</sup>	14	23	29					mg/kg	5	A-T-024s



Envirolab Job Number: 20/06509

Client Project Name: West Winch By Pass

Client Project Ref: 100746

Lab Sample ID	20/06509/1	20/06509/2	20/06509/3					Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	106	208	211							
Depth to Top	0.5	0.5	0.4							
Depth To Bottom										
Date Sampled	01-Aug-20	01-Aug-20	01-Aug-20							
Sample Type	Soil - ES	Soil - ES	Soil - ES							
Sample Matrix Code	6AB	4AE	6AE							
PAH-16MS										
Acenaphthene <sub>A</sub> <sup>M#</sup>	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-019s
Acenaphthylene <sub>A</sub> <sup>M#</sup>	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-019s
Anthracene <sub>A</sub> <sup>M#</sup>	<0.02	<0.02	<0.02					mg/kg	0.02	A-T-019s
Benzo(a)anthracene <sub>A</sub> <sup>M#</sup>	<0.04	<0.04	<0.04					mg/kg	0.04	A-T-019s
Benzo(a)pyrene <sub>A</sub> <sup>M#</sup>	<0.04	<0.04	<0.04					mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene <sub>A</sub> <sup>M#</sup>	<0.05	<0.05	<0.05					mg/kg	0.05	A-T-019s
Benzo(ghi)perylene <sub>A</sub> <sup>M#</sup>	<0.05	<0.05	<0.05					mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene <sub>A</sub> <sup>M#</sup>	<0.07	<0.07	<0.07					mg/kg	0.07	A-T-019s
Chrysene <sub>A</sub> <sup>M#</sup>	<0.06	<0.06	<0.06					mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene <sub>A</sub> <sup>M#</sup>	<0.04	<0.04	<0.04					mg/kg	0.04	A-T-019s
Fluoranthene <sub>A</sub> <sup>M#</sup>	<0.08	<0.08	<0.08					mg/kg	0.08	A-T-019s
Fluorene <sub>A</sub> <sup>M#</sup>	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene <sub>A</sub> <sup>M#</sup>	<0.03	<0.03	<0.03					mg/kg	0.03	A-T-019s
Naphthalene <sub>A</sub> <sup>M#</sup>	<0.03	<0.03	<0.03					mg/kg	0.03	A-T-019s
Phenanthrene <sub>A</sub> <sup>M#</sup>	<0.03	<0.03	0.06					mg/kg	0.03	A-T-019s
Pyrene <sub>A</sub> <sup>M#</sup>	<0.07	<0.07	<0.07					mg/kg	0.07	A-T-019s
Total PAH-16MS <sub>A</sub> <sup>M#</sup>	<0.08	<0.08	<0.08					mg/kg	0.01	A-T-019s

Envirolab Job Number: 20/06509

Client Project Name: West Winch By Pass

Client Project Ref: 100746

Lab Sample ID	20/06509/1	20/06509/2	20/06509/3					Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	106	208	211							
Depth to Top	0.5	0.5	0.4							
Depth To Bottom										
Date Sampled	01-Aug-20	01-Aug-20	01-Aug-20							
Sample Type	Soil - ES	Soil - ES	Soil - ES							
Sample Matrix Code	6AB	4AE	6AE							
TPH UKCWG										
Ali >C5-C6 <sub>A</sub> <sup>#</sup>	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
Ali >C6-C8 <sub>A</sub> <sup>#</sup>	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
Ali >C8-C10 <sub>A</sub>	<1	<1	<1					mg/kg	1	A-T-055s
Ali >C10-C12 <sub>A</sub> <sup>M#</sup>	<1	<1	<1					mg/kg	1	A-T-055s
Ali >C12-C16 <sub>A</sub> <sup>M#</sup>	<1	<1	<1					mg/kg	1	A-T-055s
Ali >C16-C21 <sub>A</sub> <sup>M#</sup>	<1	<1	<1					mg/kg	1	A-T-055s
Ali >C21-C35 <sub>A</sub>	<1	<1	9					mg/kg	1	A-T-055s
Ali >C35-C44 <sub>A</sub>	<1	<1	<1					mg/kg	1	A-T-055s
Total Aliphatics <sub>A</sub>	<1	<1	9					mg/kg	1	A-T-055s
Aro >C5-C7 <sub>A</sub> <sup>#</sup>	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
Aro >C7-C8 <sub>A</sub> <sup>#</sup>	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
Aro >C8-C10 <sub>A</sub>	<1	<1	<1					mg/kg	1	A-T-055s
Aro >C10-C12 <sub>A</sub> <sup>M#</sup>	<1	<1	<1					mg/kg	1	A-T-055s
Aro >C12-C16 <sub>A</sub>	<1	<1	<1					mg/kg	1	A-T-055s
Aro >C16-C21 <sub>A</sub> <sup>M#</sup>	<1	<1	<1					mg/kg	1	A-T-055s
Aro >C21-C35 <sub>A</sub> <sup>M#</sup>	<1	<1	5					mg/kg	1	A-T-055s
Aro >C35-C44 <sub>A</sub>	<1	<1	1					mg/kg	1	A-T-055s
Total Aromatics <sub>A</sub>	<1	<1	6					mg/kg	1	A-T-055s
TPH (Ali & Aro >C5-C44) <sub>A</sub>	<1	<1	15					mg/kg	1	A-T-055s
BTEX - Benzene <sub>A</sub> <sup>#</sup>	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
BTEX - Toluene <sub>A</sub> <sup>#</sup>	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene <sub>A</sub> <sup>#</sup>	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
BTEX - m & p Xylene <sub>A</sub> <sup>#</sup>	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
BTEX - o Xylene <sub>A</sub> <sup>#</sup>	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
MTBE <sub>A</sub> <sup>#</sup>	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s

## **REPORT NOTES**

### **General**

This report shall not be reproduced, except in full, without written approval from Envirolab.

The results reported herein relate only to the material supplied to the laboratory.

The residue of any samples contained within this report, and any received with the same delivery, will be disposed of six weeks after initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of six months after the initial Asbestos testing is completed.

Analytical results reflect the quality of the sample at the time of analysis only.

Opinions and interpretations expressed are outside the scope of our accreditation.

If results are in italic font they are associated with an AQC failure, these are not accredited and are unreliable.

A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.

The Client Sample No, Client Sample ID, Depth to Top, Depth to Bottom and Date Sampled were all provided by the client.

### **Soil chemical analysis:**

All results are reported as dry weight (<40°C).

For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.

For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts

All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

### **TPH analysis of water by method A-T-007:**

Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

### **Electrical Conductivity of water by Method A-T-037:**

Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the calibration range and as such are unaccredited.

### **Asbestos:**

Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.

Stones etc. are not removed from the sample prior to analysis.

Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

### **Predominant Matrix Codes:**

1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample.

Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.

### **Secondary Matrix Codes:**

A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal,

E = contains roots/twigs.

### **Key:**

IS indicates Insufficient Sample for analysis.

US indicates Unsuitable Sample for analysis.

NDP indicates No Determination Possible.

NAD indicates No Asbestos Detected.

N/A indicates Not Applicable.

Superscript # indicates method accredited to ISO 17025.

Superscript "M" indicates method accredited to MCERTS.

Subscript "A" indicates analysis performed on the sample as received.

Subscript "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve

Please contact us if you need any further information.

## FINAL ANALYTICAL TEST REPORT

**Envirolab Job Number:** 20/09647  
**Issue Number:** 1  
**Date:** 25 November, 2020

**Client:** Norse Eastern Ltd t/a Norse Highways  
280 Fifers Lane  
Norwich  
Norfolk  
NR6 6EQ

**Project Manager:** Civil Lab/Sharon Woods; Simon Holden  
**Project Name:** West Winch Relief Road  
**Project Ref:** 100746  
**Order No:** PN05009386  
**Date Samples Received:** 11/11/20  
**Date Instructions Received:** 11/11/20  
**Date Analysis Completed:** 25/11/20

**Prepared by:**



Melanie Marshall  
Laboratory Coordinator

**Approved by:**



Holly Neary-King  
Client Services Supervisor

Envirolab Job Number: 20/09647

Client Project Name: West Winch Relief Road

Client Project Ref: 100746

Lab Sample ID	20/09647/1	20/09647/2	20/09647/3	20/09647/4	20/09647/5	20/09647/6		Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	101	102	103	105	106	107				
Depth to Top	1.48	0.46	0.75	1.45	0.77	0.85				
Depth To Bottom										
Date Sampled	09-Nov-20	09-Nov-20	09-Nov-20	09-Nov-20	09-Nov-20	09-Nov-20				
Sample Type	Water - EW	Water - EW	Water - EW	Water - EW	Water - EW	Water - EW				
Sample Matrix Code	N/A	N/A	N/A	N/A	N/A	N/A				
pH (w) <sub>A</sub> <sup>#</sup>	6.97	7.23	6.16	7.48	7.48	7.33				
Hardness Total <sub>A</sub> <sup>#</sup>	173	469	181	386	283	419		mg/l Ca CO3	2	A-T-049w
Ammoniacal nitrogen as N (w) <sub>A</sub> <sup>#</sup>	0.07	0.18	0.20	0.08	0.14	0.37		mg/l	0.02	A-T-033w
Nitrite (w) <sub>A</sub> <sup>#</sup>	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1		mg/l	0.1	A-T-026w
Nitrate (w) <sub>A</sub> <sup>#</sup>	192	0.5	<0.1	95.9	0.4	77.5		mg/l	0.1	A-T-026w
Sulphate (w) <sub>A</sub> <sup>#</sup>	51	100	214	87	41	97		mg/l	1	A-T-026w
Cyanide (total) (w) <sub>A</sub> <sup>#</sup>	<0.005	<0.005	<0.005	0.020	<0.005	0.015		mg/l	0.005	A-T-042wTCN
Phenols - Total by HPLC (w) <sub>A</sub>	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		mg/l	0.01	A-T-050w
Sulphide (w) <sub>A</sub>	0.1	<0.1	<0.1	<0.1	<0.1	0.1		mg/l	0.1	A-T-S2-w
Arsenic (dissolved) <sub>A</sub> <sup>#</sup>	4	2	2	1	4	1		µg/l	1	A-T-025w
Boron (dissolved) <sub>A</sub> <sup>#</sup>	30	71	31	76	56	91		µg/l	10	A-T-025w
Cadmium (dissolved) <sub>A</sub> <sup>#</sup>	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2		µg/l	0.2	A-T-025w
Copper (total) <sub>A</sub>	361	45	155	34	43	22		µg/l	1	A-T-025w
Chromium (dissolved) <sub>A</sub> <sup>#</sup>	<1	<1	<1	<1	1	<1		µg/l	1	A-T-025w
Chromium (hexavalent) (w) <sub>A</sub> <sup>#</sup>	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		mg/l	0.01	A-T-040w
Lead (dissolved) <sub>A</sub> <sup>#</sup>	<1	<1	<1	<1	3	<1		µg/l	1	A-T-025w
Mercury (dissolved) <sub>A</sub> <sup>#</sup>	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1		µg/l	0.1	A-T-025w
Nickel (dissolved) <sub>A</sub> <sup>#</sup>	9	2	13	3	7	5		µg/l	1	A-T-025w
Selenium (dissolved) <sub>A</sub> <sup>#</sup>	<1	<1	<1	2	<1	1		µg/l	1	A-T-025w
Sulphur (elemental/free) (w) <sub>A</sub>	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1		mg/l	0.1	A-T-029w
Zinc (total) <sub>A</sub>	768	89	1030	79	153	34		µg/l	1	A-T-025w
Aldrin (w) <sub>A</sub>	<0.1	-	<0.1	<0.1	-	-		µg/l	0.1	A-T-056w
alpha-Hexachlorocyclohexane (HCH) (w) <sub>A</sub>	<0.1	-	<0.1	<0.1	-	-		µg/l	0.1	A-T-056w
Azinphos-methyl (w) <sub>A</sub>	<0.1	-	<0.1	<0.1	-	-		µg/l	0.1	A-T-056w
beta-Hexachlorocyclohexane (HCH) (w) <sub>A</sub>	<0.1	-	<0.1	<0.1	-	-		µg/l	0.1	A-T-056w
Diazinon (Dimpylate) (w) <sub>A</sub>	<0.1	-	<0.1	<0.1	-	-		µg/l	0.1	A-T-056w
Dichlorvos (w) <sub>A</sub>	<0.1	-	<0.1	<0.1	-	-		µg/l	0.1	A-T-056w
Dieldrin (w) <sub>A</sub>	<0.1	-	<0.1	<0.1	-	-		µg/l	0.1	A-T-056w
Endrin (w) <sub>A</sub>	<0.1	-	<0.1	<0.1	-	-		µg/l	0.1	A-T-056w
Ethion (w) <sub>A</sub>	<0.1	-	<0.1	<0.1	-	-		µg/l	0.1	A-T-056w
Endosulphan Sulphate (w) <sub>A</sub>	<0.1	-	<0.1	<0.1	-	-		µg/l	0.1	A-T-056w
Endosulphan II (Beta) (w) <sub>A</sub>	<0.1	-	<0.1	<0.1	-	-		µg/l	0.1	A-T-056w
Endosulphan I (Alpha) (w) <sub>A</sub>	<0.1	-	<0.1	<0.1	-	-		µg/l	0.1	A-T-056w

Envirolab Job Number: 20/09647

Client Project Name: West Winch Relief Road

Client Project Ref: 100746

Lab Sample ID	20/09647/1	20/09647/2	20/09647/3	20/09647/4	20/09647/5	20/09647/6		Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	101	102	103	105	106	107				
Depth to Top	1.48	0.46	0.75	1.45	0.77	0.85				
Depth To Bottom										
Date Sampled	09-Nov-20	09-Nov-20	09-Nov-20	09-Nov-20	09-Nov-20	09-Nov-20				
Sample Type	Water - EW	Water - EW	Water - EW	Water - EW	Water - EW	Water - EW				
Sample Matrix Code	N/A	N/A	N/A	N/A	N/A	N/A				
Fenitrothion (w) <sub>A</sub>	<0.1	-	<0.1	<0.1	-	-				
gamma-Hexachlorocyclohexane (HCH / Lindane) (w) <sub>A</sub>	<0.1	-	<0.1	<0.1	-	-		µg/l	0.1	A-T-056w
Heptachlor (w) <sub>A</sub>	<0.1	-	<0.1	<0.1	-	-		µg/l	0.1	A-T-056w
Heptachlor epoxide (w) <sub>A</sub>	<0.1	-	<0.1	<0.1	-	-		µg/l	0.1	A-T-056w
Malathion (w) <sub>A</sub>	<0.1	-	<0.1	<0.1	-	-		µg/l	0.1	A-T-056w
Methyl Parathion (w) <sub>A</sub>	<0.1	-	<0.1	<0.1	-	-		µg/l	0.1	A-T-056w
Mevinphos (w) <sub>A</sub>	<0.5	-	<0.5	<0.5	-	-		µg/l	0.5	A-T-056w
Parathion (Ethyl Parathion) (w) <sub>A</sub>	<0.1	-	<0.1	<0.1	-	-		µg/l	0.1	A-T-056w

Envirolab Job Number: 20/09647

Client Project Name: West Winch Relief Road

Client Project Ref: 100746

Lab Sample ID	20/09647/1	20/09647/2	20/09647/3	20/09647/4	20/09647/5	20/09647/6		Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	101	102	103	105	106	107				
Depth to Top	1.48	0.46	0.75	1.45	0.77	0.85				
Depth To Bottom										
Date Sampled	09-Nov-20	09-Nov-20	09-Nov-20	09-Nov-20	09-Nov-20	09-Nov-20				
Sample Type	Water - EW	Water - EW	Water - EW	Water - EW	Water - EW	Water - EW				
Sample Matrix Code	N/A	N/A	N/A	N/A	N/A	N/A				
PAH 16MS (w)										
Acenaphthene (w) <sub>A</sub> <sup>#</sup>	<0.01	<0.01	0.01	<0.01	<0.01	<0.01		µg/l	0.01	A-T-019w
Acenaphthylene (w) <sub>A</sub> <sup>#</sup>	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		µg/l	0.01	A-T-019w
Anthracene (w) <sub>A</sub> <sup>#</sup>	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		µg/l	0.01	A-T-019w
Benzo(a)anthracene (w) <sub>A</sub> <sup>#</sup>	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		µg/l	0.01	A-T-019w
Benzo(a)pyrene (w) <sub>A</sub> <sup>#</sup>	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		µg/l	0.01	A-T-019w
Benzo(b)fluoranthene (w) <sub>A</sub> <sup>#</sup>	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		µg/l	0.01	A-T-019w
Benzo(ghi)perylene (w) <sub>A</sub> <sup>#</sup>	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		µg/l	0.01	A-T-019w
Benzo(k)fluoranthene (w) <sub>A</sub> <sup>#</sup>	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		µg/l	0.01	A-T-019w
Chrysene (w) <sub>A</sub> <sup>#</sup>	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		µg/l	0.01	A-T-019w
Dibenzo(ah)anthracene (w) <sub>A</sub> <sup>#</sup>	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		µg/l	0.01	A-T-019w
Fluoranthene (w) <sub>A</sub> <sup>#</sup>	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		µg/l	0.01	A-T-019w
Fluorene (w) <sub>A</sub> <sup>#</sup>	<0.01	<0.01	0.02	<0.01	<0.01	<0.01		µg/l	0.01	A-T-019w
Indeno(123-cd)pyrene (w) <sub>A</sub> <sup>#</sup>	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		µg/l	0.01	A-T-019w
Naphthalene (w) <sub>A</sub> <sup>#</sup>	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		µg/l	0.01	A-T-019w
Phenanthrene (w) <sub>A</sub> <sup>#</sup>	<0.01	<0.01	0.03	<0.01	<0.01	<0.01		µg/l	0.01	A-T-019w
Pyrene (w) <sub>A</sub> <sup>#</sup>	<0.01	<0.01	0.01	<0.01	<0.01	<0.01		µg/l	0.01	A-T-019w
Total PAH 16MS (w) <sub>A</sub> <sup>#</sup>	<0.01	<0.01	0.07	<0.01	<0.01	<0.01		µg/l	0.01	A-T-019w

Envirolab Job Number: 20/09647

Client Project Name: West Winch Relief Road

Client Project Ref: 100746

Lab Sample ID	20/09647/1	20/09647/2	20/09647/3	20/09647/4	20/09647/5	20/09647/6		Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	101	102	103	105	106	107				
Depth to Top	1.48	0.46	0.75	1.45	0.77	0.85				
Depth To Bottom										
Date Sampled	09-Nov-20	09-Nov-20	09-Nov-20	09-Nov-20	09-Nov-20	09-Nov-20				
Sample Type	Water - EW	Water - EW	Water - EW	Water - EW	Water - EW	Water - EW				
Sample Matrix Code	N/A	N/A	N/A	N/A	N/A	N/A				
Speciated PCB-EC7 (w)										
PCB BZ 28 (w) <sub>A</sub> <sup>#</sup>	<0.001	-	<0.001	<0.001	-	-		µg/l	0.001	A-T-004w
PCB BZ 52 (w) <sub>A</sub> <sup>#</sup>	<0.001	-	<0.001	<0.001	-	-		µg/l	0.001	A-T-004w
PCB BZ 101 (w) <sub>A</sub> <sup>#</sup>	<0.001	-	<0.001	<0.001	-	-		µg/l	0.001	A-T-004w
PCB BZ 118 (w) <sub>A</sub> <sup>#</sup>	<0.002	-	<0.002	<0.002	-	-		µg/l	0.002	A-T-004w
PCB BZ 138 (w) <sub>A</sub> <sup>#</sup>	<0.001	-	<0.001	<0.001	-	-		µg/l	0.001	A-T-004w
PCB BZ 153 (w) <sub>A</sub> <sup>#</sup>	<0.001	-	<0.001	<0.001	-	-		µg/l	0.001	A-T-004w
PCB BZ 180 (w) <sub>A</sub> <sup>#</sup>	<0.001	-	<0.001	<0.001	-	-		µg/l	0.001	A-T-004w
Total Speciated PCB-EC7 (w) <sub>A</sub> <sup>#</sup>	<0.002	-	<0.002	<0.002	-	-		µg/l	0.001	A-T-004w



Envirolab Job Number: 20/09647

Client Project Name: West Winch Relief Road

Client Project Ref: 100746

Lab Sample ID	20/09647/1	20/09647/2	20/09647/3	20/09647/4	20/09647/5	20/09647/6		Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	101	102	103	105	106	107				
Depth to Top	1.48	0.46	0.75	1.45	0.77	0.85				
Depth To Bottom										
Date Sampled	09-Nov-20	09-Nov-20	09-Nov-20	09-Nov-20	09-Nov-20	09-Nov-20				
Sample Type	Water - EW	Water - EW	Water - EW	Water - EW	Water - EW	Water - EW				
Sample Matrix Code	N/A	N/A	N/A	N/A	N/A	N/A				
SVOC (excluding PAH-16) (w)										
2,4,5-Trichlorophenol <sub>A</sub>	I.S	-	I.S	<1	-	-		µg/l	1	A-T-052w
2,4,6-Trichlorophenol <sub>A</sub>	I.S	-	I.S	<1	-	-		µg/l	1	A-T-052w
2,4-Dichlorophenol <sub>A</sub>	I.S	-	I.S	<1	-	-		µg/l	1	A-T-052w
2,4-Dimethylphenol <sub>A</sub>	I.S	-	I.S	<1	-	-		µg/l	1	A-T-052w
2,4-Dinitrotoluene <sub>A</sub>	I.S	-	I.S	<1	-	-		µg/l	1	A-T-052w
2,6-Dinitrotoluene <sub>A</sub>	I.S	-	I.S	<1	-	-		µg/l	1	A-T-052w
2-Chloronaphthalene <sub>A</sub>	I.S	-	I.S	<1	-	-		µg/l	1	A-T-052w
2-Chlorophenol <sub>A</sub>	I.S	-	I.S	<1	-	-		µg/l	1	A-T-052w
2-Methylnaphthalene <sub>A</sub>	I.S	-	I.S	<1	-	-		µg/l	1	A-T-052w
2-Methylphenol <sub>A</sub>	I.S	-	I.S	<1	-	-		µg/l	1	A-T-052w
2-Nitrophenol <sub>A</sub>	I.S	-	I.S	<1	-	-		µg/l	1	A-T-052w
4-Bromophenyl phenyl ether <sub>A</sub>	I.S	-	I.S	<1	-	-		µg/l	1	A-T-052w
4-Chloro-3-methylphenol <sub>A</sub>	I.S	-	I.S	<1	-	-		µg/l	1	A-T-052w
Bis(2-chloroisopropyl)ether <sub>A</sub>	I.S	-	I.S	<1	-	-		µg/l	1	A-T-052w
3+4-Methylphenol <sub>A</sub>	I.S	-	I.S	<1	-	-		µg/l	1	A-T-052w
4-Nitrophenol <sub>A</sub>	I.S	-	I.S	<1	-	-		µg/l	1	A-T-052w
Bis(2-chloroethyl)ether <sub>A</sub>	I.S	-	I.S	<1	-	-		µg/l	1	A-T-052w
Bis(2-chloroethoxy)methane <sub>A</sub>	I.S	-	I.S	<1	-	-		µg/l	1	A-T-052w
Bis(2-ethylhexyl)phthalate <sub>A</sub>	I.S	-	I.S	<10	-	-		µg/l	10	A-T-052w
Butylbenzyl phthalate <sub>A</sub>	I.S	-	I.S	<1	-	-		µg/l	1	A-T-052w
Carbazole <sub>A</sub>	I.S	-	I.S	<1	-	-		µg/l	1	A-T-052w
Dibenzofuran <sub>A</sub>	I.S	-	I.S	<1	-	-		µg/l	1	A-T-052w
n-Dibutylphthalate <sub>A</sub>	I.S	-	I.S	<1	-	-		µg/l	1	A-T-052w
n-Diethylphthalate <sub>A</sub>	I.S	-	I.S	<10	-	-		µg/l	10	A-T-052w
n-Nitroso-n-dipropylamine <sub>A</sub>	I.S	-	I.S	<1	-	-		µg/l	1	A-T-052w
Diethyl phthalate <sub>A</sub>	I.S	-	I.S	<1	-	-		µg/l	1	A-T-052w
Dimethyl phthalate <sub>A</sub>	I.S	-	I.S	<1	-	-		µg/l	1	A-T-052w
Hexachlorobenzene <sub>A</sub>	I.S	-	I.S	<1	-	-		µg/l	1	A-T-052w
Pentachlorophenol (SVOC) <sub>A</sub>	I.S	-	I.S	<1	-	-		µg/l	1	A-T-052w
Phenol <sub>A</sub>	I.S	-	I.S	<1	-	-		µg/l	1	A-T-052w
Hexachloroethane <sub>A</sub>	I.S	-	I.S	<1	-	-		µg/l	1	A-T-052w
Nitrobenzene <sub>A</sub>	I.S	-	I.S	<1	-	-		µg/l	1	A-T-052w

Envirolab Job Number: 20/09647

Client Project Name: West Winch Relief Road

Client Project Ref: 100746

Lab Sample ID	20/09647/1	20/09647/2	20/09647/3	20/09647/4	20/09647/5	20/09647/6		Units	Limit of Detection	Method ref			
Client Sample No													
Client Sample ID	101	102	103	105	106	107							
Depth to Top	1.48	0.46	0.75	1.45	0.77	0.85							
Depth To Bottom													
Date Sampled	09-Nov-20	09-Nov-20	09-Nov-20	09-Nov-20	09-Nov-20	09-Nov-20							
Sample Type	Water - EW	Water - EW	Water - EW	Water - EW	Water - EW	Water - EW							
Sample Matrix Code	N/A	N/A	N/A	N/A	N/A	N/A							
Isophorone <sub>A</sub>	I.S	-	I.S	<1	-	-					µg/l	1	A-T-052w
Hexachlorocyclopentadiene <sub>A</sub>	I.S	-	I.S	<1	-	-					µg/l	1	A-T-052w
Perylene <sub>A</sub>	I.S	-	I.S	<1	-	-		µg/l	1	A-T-052w			

Envirolab Job Number: 20/09647

Client Project Name: West Winch Relief Road

Client Project Ref: 100746

Lab Sample ID	20/09647/1	20/09647/2	20/09647/3	20/09647/4	20/09647/5	20/09647/6		Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	101	102	103	105	106	107				
Depth to Top	1.48	0.46	0.75	1.45	0.77	0.85				
Depth To Bottom										
Date Sampled	09-Nov-20	09-Nov-20	09-Nov-20	09-Nov-20	09-Nov-20	09-Nov-20				
Sample Type	Water - EW	Water - EW	Water - EW	Water - EW	Water - EW	Water - EW				
Sample Matrix Code	N/A	N/A	N/A	N/A	N/A	N/A				
VOC (w)										
Dichlorodifluoromethane <sub>A</sub>	<1	-	<1	<1	-	-		µg/l	1	A-T-006w
Chloromethane <sub>A</sub>	<10	-	<10	<10	-	-		µg/l	10	A-T-006w
Vinyl Chloride <sub>A</sub> <sup>#</sup>	<1	-	<1	<1	-	-		µg/l	1	A-T-006w
Bromomethane <sub>A</sub> <sup>#</sup>	<1	-	<1	<1	-	-		µg/l	1	A-T-006w
Chloroethane <sub>A</sub> <sup>#</sup>	<1	-	<1	<1	-	-		µg/l	1	A-T-006w
Trichlorofluoromethane <sub>A</sub> <sup>#</sup>	<1	-	<1	<1	-	-		µg/l	1	A-T-006w
trans 1,2-Dichloroethene <sub>A</sub> <sup>#</sup>	<1	-	<1	<1	-	-		µg/l	1	A-T-006w
Dichloromethane <sub>A</sub>	<5	-	<5	<5	-	-		µg/l	5	A-T-006w
Carbon Disulphide <sub>A</sub> <sup>#</sup>	<1	-	<1	<1	-	-		µg/l	1	A-T-006w
1,1-Dichloroethene <sub>A</sub> <sup>#</sup>	<1	-	<1	<1	-	-		µg/l	1	A-T-006w
1,1-Dichloroethane <sub>A</sub> <sup>#</sup>	<1	-	<1	<1	-	-		µg/l	1	A-T-006w
cis 1,2-Dichloroethene <sub>A</sub> <sup>#</sup>	<1	-	<1	<1	-	-		µg/l	1	A-T-006w
Bromochloromethane <sub>A</sub> <sup>#</sup>	<5	-	<5	<5	-	-		µg/l	5	A-T-006w
Chloroform <sub>A</sub> <sup>#</sup>	<1	-	<1	<1	-	-		µg/l	1	A-T-006w
2,2-Dichloropropane <sub>A</sub> <sup>#</sup>	<1	-	<1	<1	-	-		µg/l	1	A-T-006w
1,2-Dichloroethane <sub>A</sub> <sup>#</sup>	<2	-	<2	<2	-	-		µg/l	2	A-T-006w
1,1,1-Trichloroethane <sub>A</sub> <sup>#</sup>	<1	-	<1	<1	-	-		µg/l	1	A-T-006w
1,1-Dichloropropene <sub>A</sub> <sup>#</sup>	<1	-	<1	<1	-	-		µg/l	1	A-T-006w
Benzene <sub>A</sub> <sup>#</sup>	<1	-	<1	<1	-	-		µg/l	1	A-T-006w
Carbon Tetrachloride <sub>A</sub> <sup>#</sup>	<1	-	<1	<1	-	-		µg/l	1	A-T-006w
Dibromomethane <sub>A</sub> <sup>#</sup>	<1	-	<1	<1	-	-		µg/l	1	A-T-006w
1,2-Dichloropropane <sub>A</sub> <sup>#</sup>	<1	-	<1	<1	-	-		µg/l	1	A-T-006w
Bromodichloromethane <sub>A</sub> <sup>#</sup>	<10	-	<10	<10	-	-		µg/l	10	A-T-006w
Trichloroethene <sub>A</sub> <sup>#</sup>	<1	-	<1	<1	-	-		µg/l	1	A-T-006w
cis 1,3-Dichloropropene <sub>A</sub> <sup>#</sup>	<1	-	<1	<1	-	-		µg/l	1	A-T-006w
trans 1,3-Dichloropropene <sub>A</sub> <sup>#</sup>	<1	-	<1	<1	-	-		µg/l	1	A-T-006w
1,1,2-Trichloroethane <sub>A</sub> <sup>#</sup>	<1	-	<1	<1	-	-		µg/l	1	A-T-006w
Toluene <sub>A</sub> <sup>#</sup>	<1	-	<1	<1	-	-		µg/l	1	A-T-006w
1,3-Dichloropropane <sub>A</sub> <sup>#</sup>	<1	-	<1	<1	-	-		µg/l	1	A-T-006w
Dibromochloromethane <sub>A</sub> <sup>#</sup>	<3	-	<3	<3	-	-		µg/l	3	A-T-006w
1,2-Dibromoethane <sub>A</sub> <sup>#</sup>	<1	-	<1	<1	-	-		µg/l	1	A-T-006w
Tetrachloroethene <sub>A</sub>	<1	-	<1	<1	-	-		µg/l	1	A-T-006w

Envirolab Job Number: 20/09647

Client Project Name: West Winch Relief Road

Client Project Ref: 100746

Lab Sample ID	20/09647/1	20/09647/2	20/09647/3	20/09647/4	20/09647/5	20/09647/6		Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	101	102	103	105	106	107				
Depth to Top	1.48	0.46	0.75	1.45	0.77	0.85				
Depth To Bottom										
Date Sampled	09-Nov-20	09-Nov-20	09-Nov-20	09-Nov-20	09-Nov-20	09-Nov-20				
Sample Type	Water - EW	Water - EW	Water - EW	Water - EW	Water - EW	Water - EW				
Sample Matrix Code	N/A	N/A	N/A	N/A	N/A	N/A				
1,1,1,2-Tetrachloroethane <sub>A</sub>	<1	-	<1	<1	-	-		µg/l	1	A-T-006w
Chlorobenzene <sub>A</sub> <sup>#</sup>	<1	-	<1	<1	-	-		µg/l	1	A-T-006w
Ethylbenzene <sub>A</sub> <sup>#</sup>	<1	-	<1	<1	-	-		µg/l	1	A-T-006w
m & p Xylene <sub>A</sub> <sup>#</sup>	<1	-	<1	<1	-	-		µg/l	1	A-T-006w
Bromoform <sub>A</sub> <sup>#</sup>	<1	-	<1	<1	-	-		µg/l	1	A-T-006w
Styrene <sub>A</sub> <sup>#</sup>	<1	-	<1	<1	-	-		µg/l	1	A-T-006w
1,1,2,2-Tetrachloroethane <sub>A</sub>	<1	-	<1	<1	-	-		µg/l	1	A-T-006w
o-Xylene <sub>A</sub> <sup>#</sup>	<1	-	<1	<1	-	-		µg/l	1	A-T-006w
1,2,3-Trichloropropane <sub>A</sub> <sup>#</sup>	<1	-	<1	<1	-	-		µg/l	1	A-T-006w
Isopropylbenzene <sub>A</sub> <sup>#</sup>	<1	-	<1	<1	-	-		µg/l	1	A-T-006w
Bromobenzene <sub>A</sub> <sup>#</sup>	<1	-	<1	<1	-	-		µg/l	1	A-T-006w
2-Chlorotoluene <sub>A</sub> <sup>#</sup>	<1	-	<1	<1	-	-		µg/l	1	A-T-006w
n-propylbenzene <sub>A</sub> <sup>#</sup>	<1	-	<1	<1	-	-		µg/l	1	A-T-006w
4-Chlorotoluene <sub>A</sub> <sup>#</sup>	<1	-	<1	<1	-	-		µg/l	1	A-T-006w
1,2,4-Trimethylbenzene <sub>A</sub> <sup>#</sup>	<1	-	<1	<1	-	-		µg/l	1	A-T-006w
4-Isopropyltoluene <sub>A</sub> <sup>#</sup>	<1	-	<1	<1	-	-		µg/l	1	A-T-006w
1,3,5-Trimethylbenzene <sub>A</sub> <sup>#</sup>	<1	-	<1	<1	-	-		µg/l	1	A-T-006w
1,2-Dichlorobenzene <sub>A</sub> <sup>#</sup>	<1	-	<1	<1	-	-		µg/l	1	A-T-006w
1,4-Dichlorobenzene <sub>A</sub> <sup>#</sup>	<1	-	<1	<1	-	-		µg/l	1	A-T-006w
sec-Butylbenzene <sub>A</sub> <sup>#</sup>	<1	-	<1	<1	-	-		µg/l	1	A-T-006w
tert-Butylbenzene <sub>A</sub> <sup>#</sup>	<2	-	<2	<2	-	-		µg/l	2	A-T-006w
1,3-Dichlorobenzene <sub>A</sub> <sup>#</sup>	<1	-	<1	<1	-	-		µg/l	1	A-T-006w
n-butylbenzene <sub>A</sub> <sup>#</sup>	<1	-	<1	<1	-	-		µg/l	1	A-T-006w
1,2-Dibromo-3-chloropropane <sub>A</sub> <sup>#</sup>	<2	-	<2	<2	-	-		µg/l	2	A-T-006w
1,2,4-Trichlorobenzene <sub>A</sub> <sup>#</sup>	<3	-	<3	<3	-	-		µg/l	3	A-T-006w
1,2,3-Trichlorobenzene <sub>A</sub> <sup>#</sup>	<3	-	<3	<3	-	-		µg/l	3	A-T-006w
Hexachlorobutadiene <sub>A</sub> <sup>#</sup>	<1	-	<1	<1	-	-		µg/l	1	A-T-006w

Envirolab Job Number: 20/09647

Client Project Name: West Winch Relief Road

Client Project Ref: 100746

Lab Sample ID	20/09647/1	20/09647/2	20/09647/3	20/09647/4	20/09647/5	20/09647/6		Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	101	102	103	105	106	107				
Depth to Top	1.48	0.46	0.75	1.45	0.77	0.85				
Depth To Bottom										
Date Sampled	09-Nov-20	09-Nov-20	09-Nov-20	09-Nov-20	09-Nov-20	09-Nov-20				
Sample Type	Water - EW	Water - EW	Water - EW	Water - EW	Water - EW	Water - EW				
Sample Matrix Code	N/A	N/A	N/A	N/A	N/A	N/A				
TPH UKCWG (w)										
Ali >C5-C6 (w) <sub>A</sub> <sup>#</sup>	<1	<1	<1	<1	<1	<1		µg/l	1	A-T-022w
Ali >C6-C8 (w) <sub>A</sub> <sup>#</sup>	<1	<1	<1	<1	<1	<1		µg/l	1	A-T-022w
Ali >C8-C10 (w) <sub>A</sub> <sup>#</sup>	<5	<5	8	<5	6	<5		µg/l	5	A-T-055w
Ali >C10-C12 (w) <sub>A</sub> <sup>#</sup>	<5	<5	13	<5	8	<5		µg/l	5	A-T-055w
Ali >C12-C16 (w) <sub>A</sub> <sup>#</sup>	<5	<5	<5	<5	<5	<5		µg/l	5	A-T-055w
Ali >C16-C21 (w) <sub>A</sub> <sup>#</sup>	<5	<5	<5	<5	5	<5		µg/l	5	A-T-055w
Ali >C21-C35 (w) <sub>A</sub> <sup>#</sup>	<5	<5	21	<5	39	<5		µg/l	5	A-T-055w
Ali >C35-C44 (w) <sub>A</sub>	<5	<5	<5	<5	8	<5		µg/l	5	A-T-055w
Total Aliphatics (w) <sub>A</sub>	<5	<5	42	<5	66	<5		µg/l	5	A-T-055w
Aro >C5-C7 (w) <sub>A</sub> <sup>#</sup>	<1	<1	<1	<1	<1	<1		µg/l	1	A-T-022w
Aro >C7-C8 (w) <sub>A</sub> <sup>#</sup>	<1	<1	<1	<1	<1	<1		µg/l	1	A-T-022w
Aro >C8-C10 (w) <sub>A</sub>	<5	<5	13	<5	10	<5		µg/l	5	A-T-055w
Aro >C10-C12 (w) <sub>A</sub> <sup>#</sup>	<5	<5	14	<5	9	<5		µg/l	5	A-T-055w
Aro >C12-C16 (w) <sub>A</sub> <sup>#</sup>	<5	<5	9	<5	10	<5		µg/l	5	A-T-055w
Aro >C16-C21 (w) <sub>A</sub> <sup>#</sup>	<5	<5	9	<5	10	<5		µg/l	5	A-T-055w
Aro >C21-C35 (w) <sub>A</sub> <sup>#</sup>	<10	<10	11	<10	12	<10		µg/l	10	A-T-055w
Aro >C35-C44 (w) <sub>A</sub>	<5	<5	<5	<5	<5	<5		µg/l	5	A-T-055w
Total Aromatics (w) <sub>A</sub>	<10	<10	56	<10	51	<10		µg/l	10	A-T-055w
TPH (Ali & Aro >C5-C44) (w) <sub>A</sub>	<10	<10	98	<10	117	<10		µg/l	10	A-T-055w
BTEX - Benzene (w) <sub>A</sub> <sup>#</sup>	<1	<1	<1	<1	<1	<1		µg/l	1	A-T-022w
BTEX - Toluene (w) <sub>A</sub> <sup>#</sup>	<1	<1	<1	<1	<1	<1		µg/l	1	A-T-022w
BTEX - Ethyl Benzene (w) <sub>A</sub> <sup>#</sup>	<1	<1	<1	<1	<1	<1		µg/l	1	A-T-022w
BTEX - m & p Xylene (w) <sub>A</sub> <sup>#</sup>	<1	<1	<1	<1	<1	<1		µg/l	1	A-T-022w
BTEX - o Xylene (w) <sub>A</sub> <sup>#</sup>	<1	<1	<1	<1	<1	<1		µg/l	1	A-T-022w
MTBE (w) <sub>A</sub> <sup>#</sup>	<1	<1	<1	<1	<1	<1		µg/l	1	A-T-022w

## **REPORT NOTES**

### **General**

This report shall not be reproduced, except in full, without written approval from Envirolab.

The results reported herein relate only to the material supplied to the laboratory.

The residue of any samples contained within this report, and any received with the same delivery, will be disposed of six weeks after initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of six months after the initial Asbestos testing is completed.

Analytical results reflect the quality of the sample at the time of analysis only.

Opinions and interpretations expressed are outside the scope of our accreditation.

If results are in italic font they are associated with an AQC failure, these are not accredited and are unreliable.

A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.

The Client Sample No, Client Sample ID, Depth to Top, Depth to Bottom and Date Sampled were all provided by the client.

### **Soil chemical analysis:**

All results are reported as dry weight (<40°C).

For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.

For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts

All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

### **TPH analysis of water by method A-T-007:**

Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

### **Electrical Conductivity of water by Method A-T-037:**

Results greater than 12900µS/cm @ 25°C / 1155µS/cm @ 20°C fall outside the calibration range and as such are unaccredited.

### **Asbestos:**

Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.

Stones etc. are not removed from the sample prior to analysis.

Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

### **Predominant Matrix Codes:**

1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample.

Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.

### **Secondary Matrix Codes:**

A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal,

E = contains roots/twigs.

### **Key:**

IS indicates Insufficient Sample for analysis.

US indicates Unsuitable Sample for analysis.

NDP indicates No Determination Possible.

NAD indicates No Asbestos Detected.

N/A indicates Not Applicable.

Superscript # indicates method accredited to ISO 17025.

Superscript "M" indicates method accredited to MCERTS.

Subscript "A" indicates analysis performed on the sample as received.

Subscript "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve

Please contact us if you need any further information.













