EXPLORATION
& TESTING ASSOCIATES

APPENDIX 5: GEOTECHNICAL LABORATORY TESTING

EXPLORATION
& TESTING ASSOCIATES

Unit 8B, Bowburn South Industrial Estate, Durham, DH6 5AD

Laboratory Test Report

Client:	Exploration and Testing Associates Limited
Job Number:	C10172
Project:	Oxfordshire
Report Number:	L21-642 - 1
Date Received:	04.10.2021
Client Contact:	Jack Murray
Address:	'number three' Siskin Drive, Middlemarch Business Park, Coventry, CV3 4FJ

Testing Required:	Water Content – BS EN ISO 17892-1:2014 Determination of Liquid and Plastic Limits and Plasticity Index – BS EN ISO 17892-12:2018 Particle Size Distribution - BS EN ISO 17892-4:2016 Sedimentation by Pipetee - BS EN ISO 17892-4:2016* Determination of Maximum Dry Density / Optimum Moisture Content by 2.5kg Rammer – BS:1377-4:1990 Determination of Maximum Dry Density / Optimum Moisture Content by 4.5kg Rammer – BS:1377-4:1990
Date Testing Started:	07.10.2021
Date Testing Finished:	22.10.2021

Date Report Issued:	22.10.2021
Reviewed By:	N. O'Brien - Laboratory Manager
Authorised By:	N. Hodson - Materials Director
Remarks:	(*) Denotes testing is outside of UKAS Accreditation Scope.

Samples will be stored for one month after the report has been issued before being disposed of.

The published results are appertaining only to the specimens tested.

UKAS TESTING 20632

EXPLORATION & TESTING ASSOCIATES

Determination of Water Content, Liquid Limit, Plastic Limit and Derivation of Plasticity Index

Project No.	Project Name
C10172	Oxfordshire

Hole No.	Sample Type	Sample Ref	Sample Depth	Soil Description	Water Content %	Passing 425µm %	Liquid Limit %	Plastic Limit %	Plasticity Index %	Remarks
TP110	D	1	0.40	Brown, Sandy CLAY (Topsoil - Dry)	13	99	33	22	11	Sample tested in natural state - material passing 425um estimated by hand picking
TP117	D	1	0.40	Brown, Sandy CLAY (Topsoil - Dry)	13	100	37	26	11	Sample tested in natural state - material passing 425um estimated by hand picking
TP126	D	1	0.40	Brown, Sandy CLAY (Topsoil)	14					
TP154	D	1	0.40	Brown, Sandy CLAY (Topsoil)	12					
TP119	B	1	0.50	Brown, Slightly Sandy, Gravelly CLAY with COBBLES	13					
TP131	D	1	0.50	Brown, Sandy CLAY (Topsoil)	14	96	44	30	14	Sample tested in natural state - material passing 425um estimated by hand picking
TP150	D	1	0.50	Brown, Very Sandy CLAY	14	100	28	18	10	Sample tested in natural state - material passing 425um estimated by hand picking
TP126	D	2	0.50	Brown/Grey with Orange Mottling, Slightly Sandy CLAY	18	100	37	16	21	Sample tested in natural state - material passing 425um estimated by hand picking
TP109	B	2	0.60	Brown, Clayey, Sandy GRAVEL with COBBLES	6.9					
TP163	B	1	0.70	Brown, Clayey, Sandy GRAVEL with COBBLES	7.7					
SA09	B	1	0.70	Brown, Clayey, Sandy GRAVEL with COBBLES	8.3					
TP151	B	1	0.80	Brown, Clayey, Very Sandy GRAVEL with COBBLES	14					
TP131	B	1	0.80	Brown, Slightly Clayey, Very Sandy GRAVEL with COBBLES	5.7					
TP142	B	1	0.80	Brown, Very Clayey, Sandy GRAVEL with COBBLES	15					
TP149	B	1	0.90	Brown, Clayey, Very Sandy GRAVEL with COBBLES	9.6					
TP157	B	1	1.00	Brown, Very Clayey, Sandy GRAVEL with COBBLES	11					
TP121	B	1	1.00	Brown, Slightly Clayey, Sandy GRAVEL	8.8					
TP106	D	2	1.00	Grey with Orangle Mottling, Slightly Sandy CLAY	15	98	35	17	18	Sample tested in natural state - material passing 425um estimated by hand picking
TP159	D	2	1.00	Brown, Slightly Clayey, Sandy GRAVEL	9.3					Non Plastic
TP154	D	2	1.00	Brown, Slightly Sandy CLAY	28	100	51	25	26	Sample tested in natural state - material passing 425um estimated by hand picking
TP138	D	2	1.00	Brown, Slightly Clayey, Sandy GRAVEL	6.2					Non Plastic
TP136	B	1	1.20	Brown, Slightly Clayey, Very Sandy GRAVEL with COBBLES	6.9					
SA05	D	2	1.30	Pale Grey, Sandy, Gravelly CLAY	13	91	23	16	7	Sample tested in natural state - material passing 425um estimated by hand picking
TP121	D	2	1.50	Grey, Slightly Sandy CLAY	35	100	66	35	31	Sample tested in natural state - material passing 425um estimated by hand picking
TP123	D	3	1.50	Brown/Grey with Orange Mottling, Slightly Sandy, Slightly Gravelly CLAY	16	100	34	15	19	Sample tested in natural state - material passing 425um estimated by hand picking
TP120	D	3	1.50	Brown, Clayey, Fine SAND/SILT with Occasional Gravel	30					

	Date	Approved By	
Water Content carried out in accordance with BS EN ISO 17892: Part 1: 2014: Clause 5.1 & 5.2		N Hodson	UKAS Accredited Laboratory No. 20632
Liquid Limit, Plastic Limit & Plasticity Index all performed in accordance with BS EN ISO 17892: Part 12: 2018 - Fall cone four point method - Cone 80g/30°	22/10/2021 11:20	NHodson	

EXPLORATION & TESTING ASSOCIATES

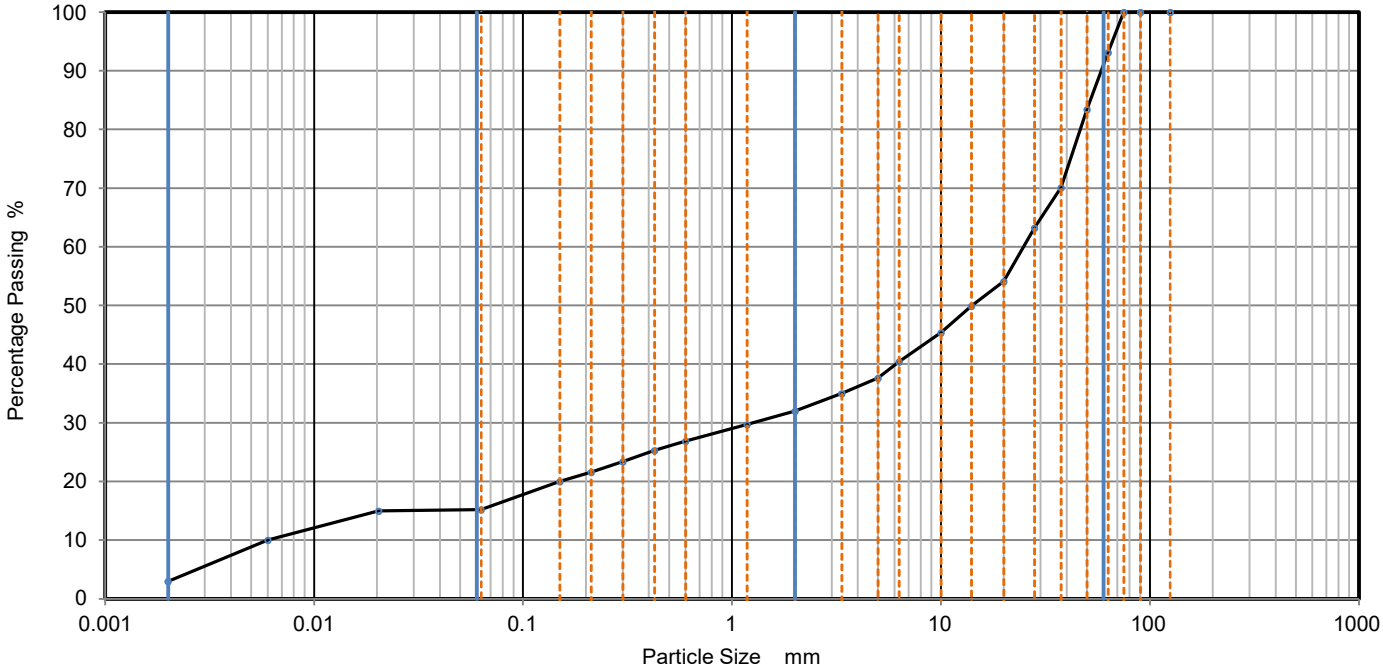
Determination of Water Content, Liquid Limit, Plastic Limit and Derivation of Plasticity Index

Project No.	Project Name
C10172	Oxfordshire

Hole No.	Sample Type	Sample Ref	Sample Depth	Soil Description	Water Content %	Passing 425µm %	Liquid Limit %	Plastic Limit %	Plasticity Index %	Remarks
TP124	B	1	1.60	Brown with Orange Mottling, Slightly Sandy CLAY	21	98	46	20	26	Sample tested in natural state - material passing 425um estimated by hand picking
TP146	D	4	1.70	Brown with Orange Mottling, Slightly Sandy CLAY	26	100	35	18	17	Sample tested in natural state - material passing 425um estimated by hand picking
TP121	D	4	2.00	Grey, Slightly Sandy CLAY	29	100	66	28	38	Sample tested in natural state - material passing 425um estimated by hand picking
TP120	D	4	2.00	Grey, Slightly Sandy CLAY	22	100	39	21	18	Sample tested in natural state - material passing 425um estimated by hand picking
TP121	D	5	2.30	Grey, Slightly Sandy CLAY	28					

	Date	Approved By	
Water Content carried out in accordance with BS EN ISO 17892: Part 1: 2014: Clause 5.1 & 5.2		N Hodson	UKAS Accredited Laboratory No. 20632
Liquid Limit, Plastic Limit & Plasticity Index all performed in accordance with BS EN ISO 17892: Part 12: 2018 - Fall cone four point method - Cone 80g/30°	22/10/2021 11:22	NHodson	

EXPLORATION & TESTING ASSOCIATES	PARTICLE SIZE DISTRIBUTION			Job Ref	C10172
				Borehole/Pit No.	SA08
Site Name	Oxfordshire			Sample No.	1
Soil Description	Brown, Clayey, Sandy GRAVEL with COBBLES			Depth, m	1.00
Specimen Reference		Specimen Depth	m	Sample Type	B
Test Method	BS1377:Part 2:1990, clauses 9.2 and 9.4			KeyLAB ID	EAT_202110129



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0203	15
90	100	0.0060	10
75	100	0.0020	3
63	93		
50	83		
37.5	70		
28	63		
20	54		
14	50		
10	45		
6.3	40		
5	38		
3.35	35		
2	32		
1.18	30		
0.6	27	Particle density	(assumed)
0.425	25	2.65	Mg/m3
0.3	23		
0.212	22		
0.15	20		
0.063	15.2		

Sample Proportions	% dry mass
Very coarse	7
Gravel	61
Sand	17
Silt	12
Clay	3

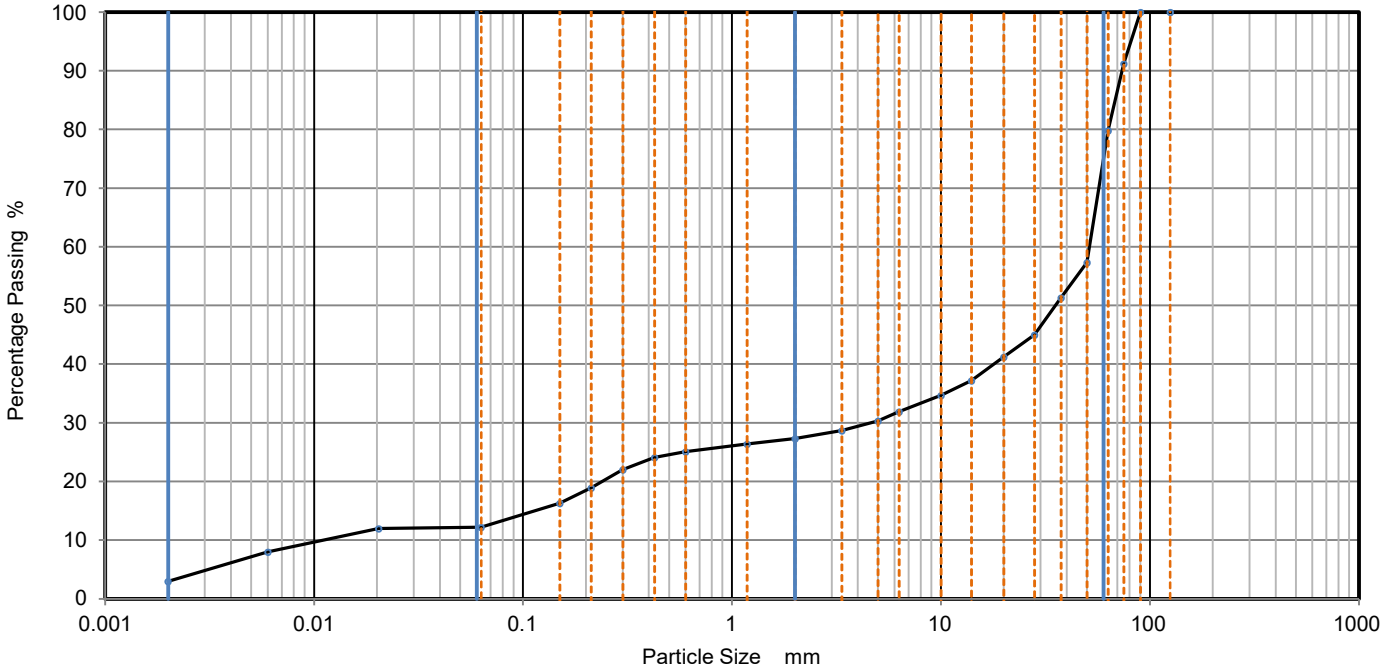
Grading Analysis		
D_{100}	mm	
D_{60}	mm	24.9
D_{30}	mm	1.27
D_{10}	mm	0.00599
Uniformity Coefficient		4200
Curvature Coefficient		11

Remarks

Preparation and testing in accordance with BS EN ISO 17892-4:2016 unless noted below

Date	Approved By		UKAS Accredited Laboratory No. 20632
22/10/2021 11:30	N Hodson	N Hodson	

EXPLORATION & TESTING ASSOCIATES	PARTICLE SIZE DISTRIBUTION			Job Ref	C10172
				Borehole/Pit No.	SA09
Site Name	Oxfordshire			Sample No.	1
Soil Description	Brown, Clayey, Sandy GRAVEL with COBBLES			Depth, m	0.70
Specimen Reference		Specimen Depth	m	Sample Type	B
Test Method	BS1377:Part 2:1990, clauses 9.2 and 9.4			KeyLAB ID	EAT_2021101210



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0203	12
90	100	0.0060	8
75	91	0.0020	3
63	80		
50	57		
37.5	51		
28	45		
20	41		
14	37		
10	35		
6.3	32		
5	30		
3.35	29		
2	27		
1.18	26		
0.6	25	Particle density (assumed)	
0.425	24	2.65 Mg/m3	
0.3	22		
0.212	19		
0.15	16		
0.063	12.2		

Sample Proportions	% dry mass
Very coarse	20
Gravel	53
Sand	15
Silt	9
Clay	3

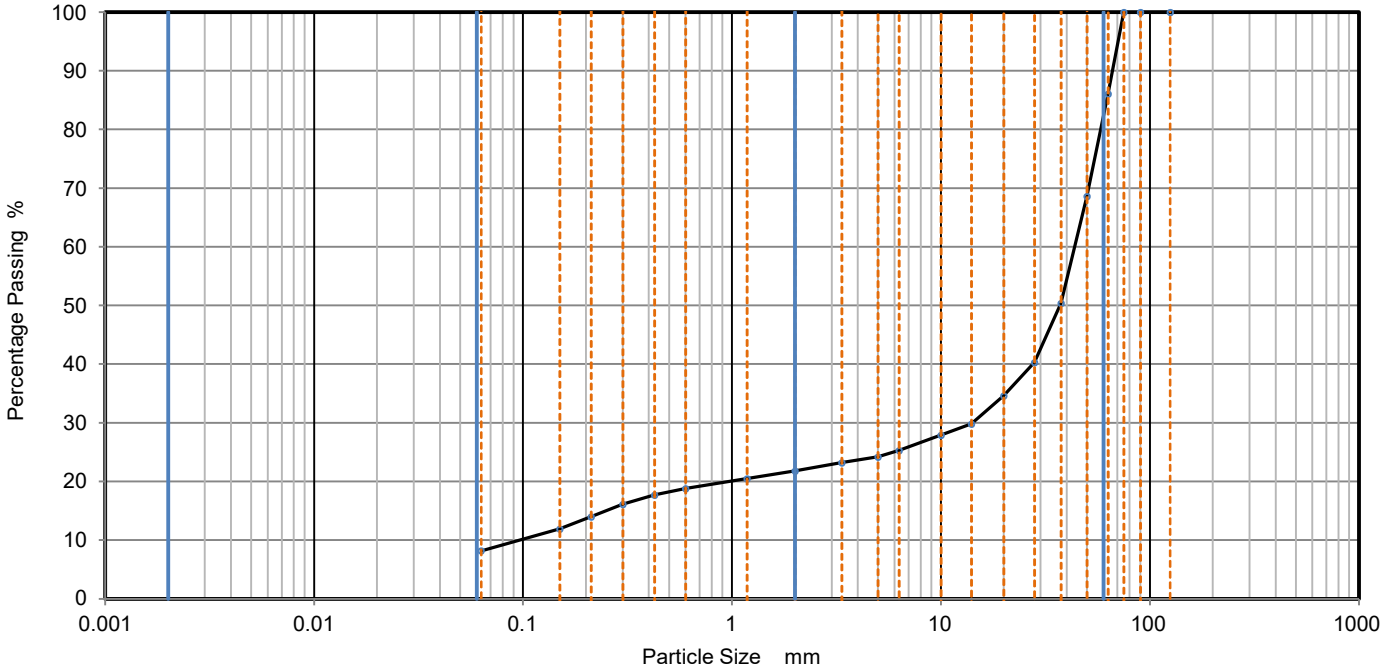
Grading Analysis		
D_{100}	mm	
D_{60}	mm	51.4
D_{30}	mm	4.62
D_{10}	mm	0.0113
Uniformity Coefficient		4600
Curvature Coefficient		37

Remarks

Preparation and testing in accordance with BS EN ISO 17892-4:2016 unless noted below

Date	Approved By		UKAS Accredited Laboratory No. 20632
22/10/2021 11:28	N Hodson	N Hodson	

EXPLORATION & TESTING ASSOCIATES	PARTICLE SIZE DISTRIBUTION			Job Ref	C10172
				Borehole/Pit No.	TP109
Site Name	Oxfordshire			Sample No.	2
Soil Description	Brown, Clayey, Sandy GRAVEL with COBBLES			Depth, m	0.60
Specimen Reference		Specimen Depth	m	Sample Type	B
Test Method	BS1377:Part 2:1990, clause 9.2			KeyLAB ID	EAT_2021101212



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	86		
50	69		
37.5	50		
28	40		
20	35		
14	30		
10	28		
6.3	25		
5	24		
3.35	23		
2	22		
1.18	21		
0.6	19		
0.425	18		
0.3	16		
0.212	14		
0.15	12		
0.063	8.2		

Sample Proportions	% dry mass
Very coarse	14
Gravel	64
Sand	14
Fines <0.063mm	8

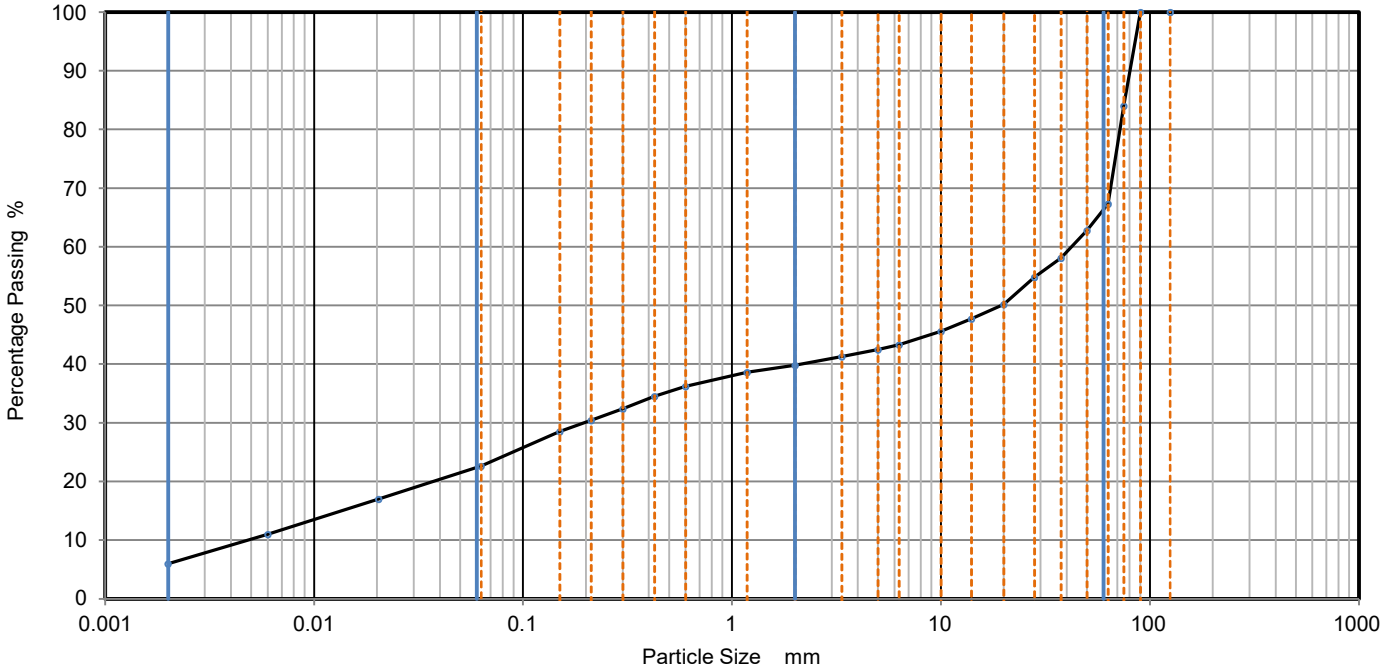
Grading Analysis		
D_{100}	mm	
D_{60}	mm	43.7
D_{30}	mm	14.3
D_{10}	mm	0.1
Uniformity Coefficient		440
Curvature Coefficient		47

Remarks

Preparation and testing in accordance with BS EN ISO 17892-4:2016 unless noted below

Date	Approved By		UKAS Accredited Laboratory No. 20632
22/10/2021 11:27	N Hodson	N Hodson	

EXPLORATION & TESTING ASSOCIATES	PARTICLE SIZE DISTRIBUTION			Job Ref	C10172
				Borehole/Pit No.	TP119
Site Name	Oxfordshire			Sample No.	1
Soil Description	Brown, Slightly Sandy, Gravelly CLAY with COBBLES			Depth, m	0.50
Specimen Reference		Specimen Depth	m	Sample Type	B
Test Method	BS1377:Part 2:1990, clauses 9.2 and 9.4			KeyLAB ID	EAT_2021101215



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0203	17
90	100	0.0060	11
75	84	0.0020	6
63	67		
50	63		
37.5	58		
28	55		
20	50		
14	48		
10	46		
6.3	43		
5	43		
3.35	41		
2	40		
1.18	39		
0.6	36	Particle density (assumed)	
0.425	35	2.65 Mg/m3	
0.3	32		
0.212	30		
0.15	29		
0.063	22.6		

Sample Proportions	% dry mass
Very coarse	33
Gravel	28
Sand	17
Silt	17
Clay	6

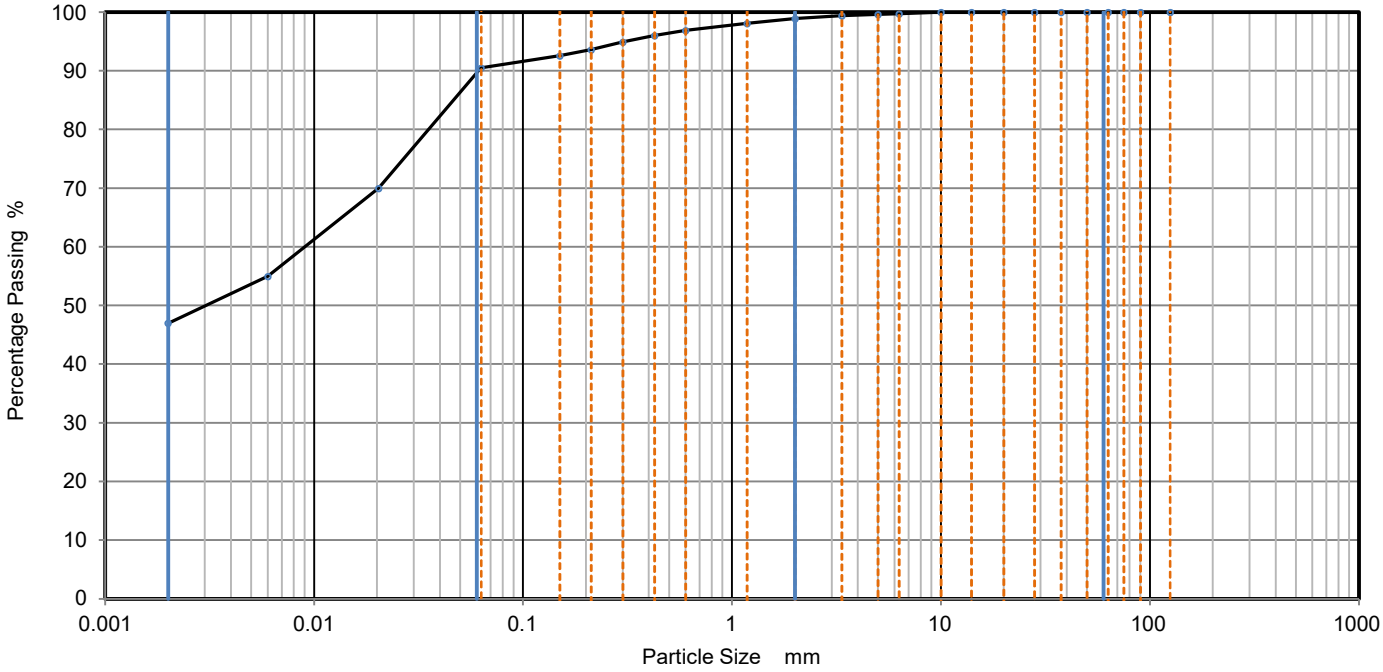
Grading Analysis		
D_{100}	mm	
D_{60}	mm	42.1
D_{30}	mm	0.197
D_{10}	mm	0.00531
Uniformity Coefficient		7900
Curvature Coefficient		0.17

Remarks

Preparation and testing in accordance with BS EN ISO 17892-4:2016 unless noted below

Date	Approved By		UKAS Accredited Laboratory No. 20632
22/10/2021 11:26	N Hodson	N Hodson	

EXPLORATION & TESTING ASSOCIATES	PARTICLE SIZE DISTRIBUTION			Job Ref	C10172
				Borehole/Pit No.	TP121
Site Name	Oxfordshire			Sample No.	2
Soil Description	Grey, Slightly Sandy CLAY			Depth, m	1.90
Specimen Reference		Specimen Depth	m	Sample Type	B
Test Method	BS1377:Part 2:1990, clauses 9.2 and 9.4			KeyLAB ID	EAT_2021101220



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0203	70
90	100	0.0060	55
75	100	0.0020	47
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	99		
2	99		
1.18	98		
0.6	97	Particle density	(assumed)
0.425	96	2.65	Mg/m3
0.3	95		
0.212	94		
0.15	93		
0.063	90.5		

Sample Proportions	% dry mass
Very coarse	0
Gravel	1
Sand	8
Silt	44
Clay	47

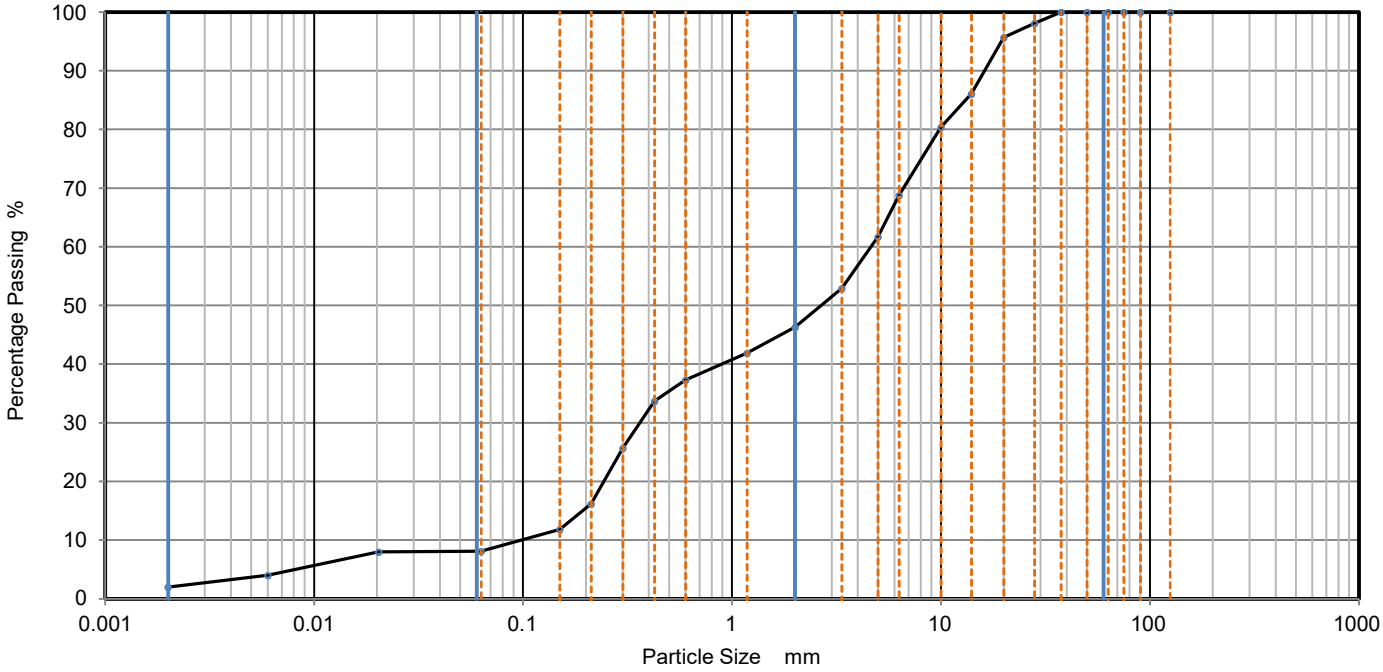
Grading Analysis		
D_{100}	mm	
D_{60}	mm	0.00925
D_{30}	mm	
D_{10}	mm	
Uniformity Coefficient		
Curvature Coefficient		

Remarks

Preparation and testing in accordance with BS EN ISO 17892-4:2016 unless noted below

Date	Approved By		UKAS Accredited Laboratory No. 20632
22/10/2021 11:35	N Hodson	N Hodson	

EXPLORATION & TESTING ASSOCIATES	PARTICLE SIZE DISTRIBUTION			Job Ref	C10172
				Borehole/Pit No.	TP121
Site Name	Oxfordshire			Sample No.	1
Soil Description	Brown, Slightly Clayey, Sandy GRAVEL			Depth, m	1.00
Specimen Reference		Specimen Depth	m	Sample Type	B
Test Method	BS1377:Part 2:1990, clauses 9.2 and 9.4			KeyLAB ID	EAT_2021101218



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0203	8
90	100	0.0060	4
75	100	0.0020	2
63	100		
50	100		
37.5	100		
28	98		
20	96		
14	86		
10	80		
6.3	69		
5	62		
3.35	53		
2	46		
1.18	42		
0.6	37	Particle density	(assumed)
0.425	34	2.65	Mg/m3
0.3	26		
0.212	16		
0.15	12		
0.063	8.1		

Sample Proportions	% dry mass
Very coarse	0
Gravel	54
Sand	38
Silt	6
Clay	2

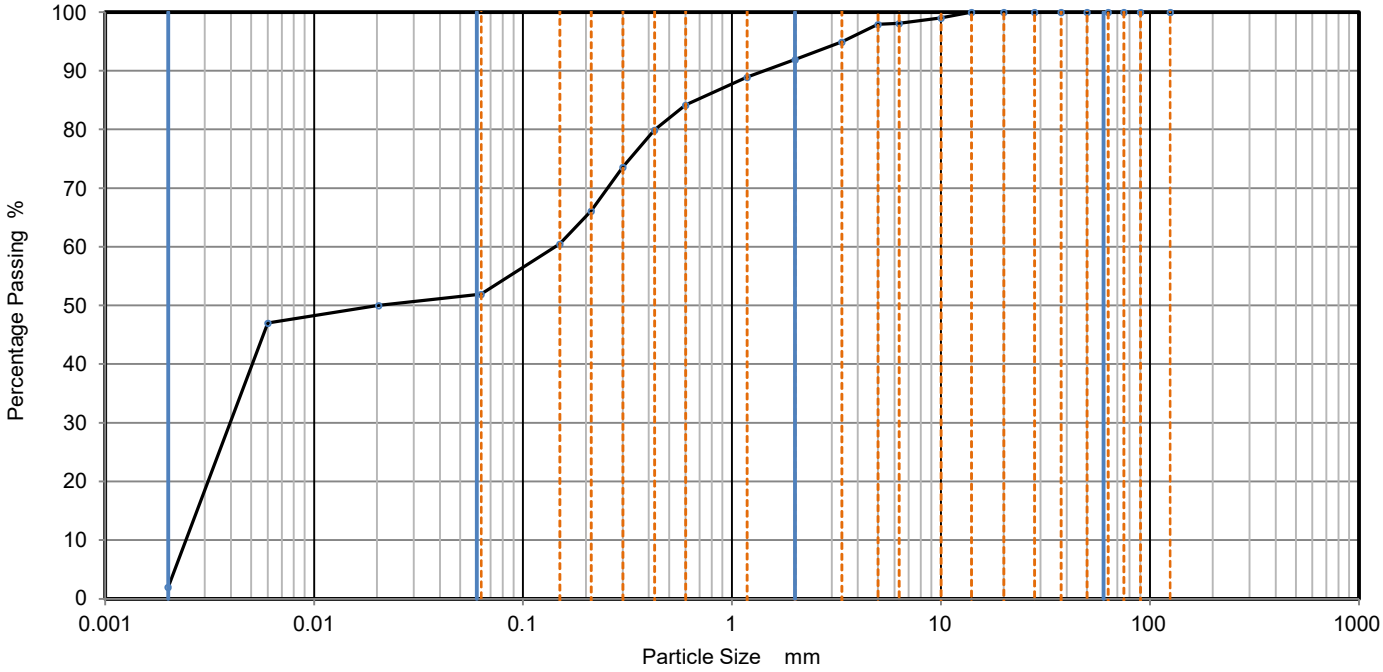
Grading Analysis		
D_{100}	mm	
D_{60}	mm	4.62
D_{30}	mm	0.362
D_{10}	mm	0.103
Uniformity Coefficient		45
Curvature Coefficient		0.27

Remarks

Preparation and testing in accordance with BS EN ISO 17892-4:2016 unless noted below

Date	Approved By		UKAS Accredited Laboratory No. 20632
22/10/2021 11:31	N Hodson	N Hodson	

EXPLORATION & TESTING ASSOCIATES	PARTICLE SIZE DISTRIBUTION			Job Ref	C10172
				Borehole/Pit No.	TP124
Site Name	Oxfordshire			Sample No.	1
Soil Description	Brown with Orange Mottling, Slightly Sandy CLAY			Depth, m	1.60
Specimen Reference		Specimen Depth	m	Sample Type	B
Test Method	BS1377:Part 2:1990, clauses 9.2 and 9.4			KeyLAB ID	EAT_2021101224



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0203	50
90	100	0.0060	47
75	100	0.0020	2
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	99		
6.3	98		
5	98		
3.35	95		
2	92		
1.18	89		
0.6	84	Particle density	(assumed)
0.425	80	2.65	Mg/m3
0.3	74		
0.212	66		
0.15	61		
0.063	51.9		

Sample Proportions	% dry mass
Very coarse	0
Gravel	8
Sand	40
Silt	50
Clay	2

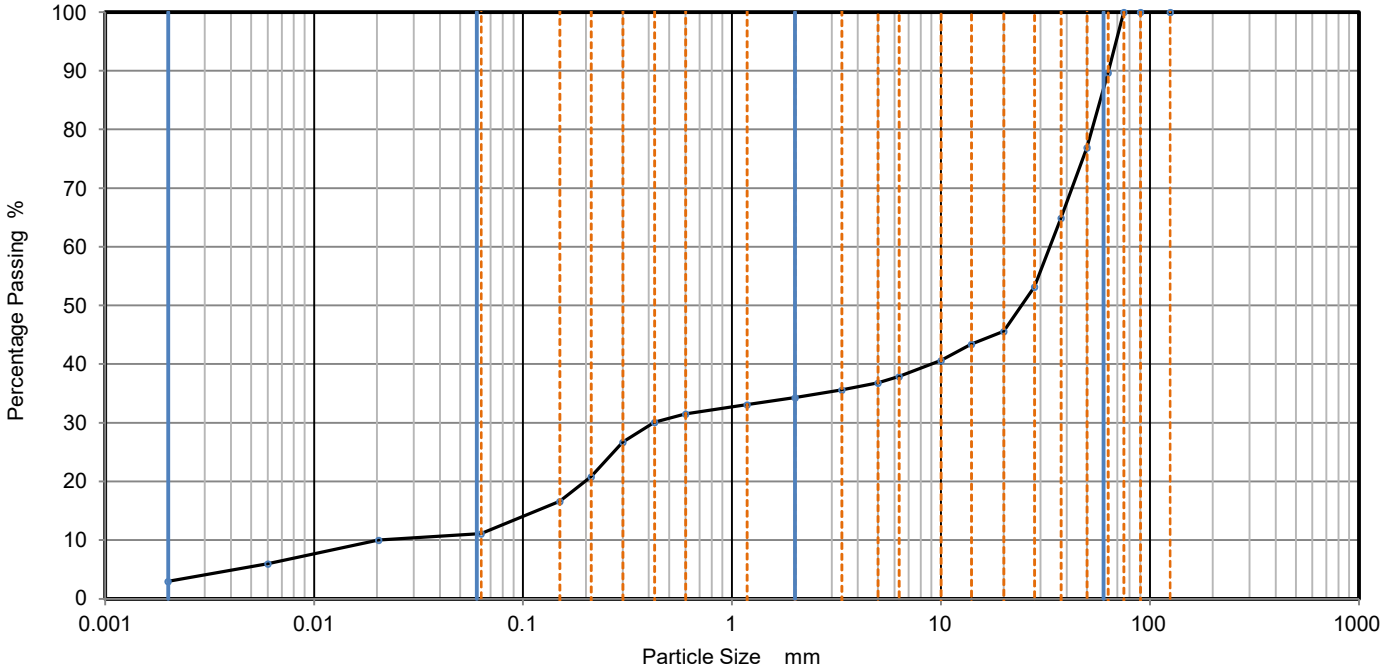
Grading Analysis		
D_{100}	mm	
D_{60}	mm	0.143
D_{30}	mm	0.00394
D_{10}	mm	0.00241
Uniformity Coefficient		60
Curvature Coefficient		0.045

Remarks

Preparation and testing in accordance with BS EN ISO 17892-4:2016 unless noted below

Date	Approved By		UKAS Accredited Laboratory No. 20632
22/10/2021 11:38	N Hodson	NHodson	

EXPLORATION & TESTING ASSOCIATES	PARTICLE SIZE DISTRIBUTION			Job Ref	C10172
				Borehole/Pit No.	TP131
Site Name	Oxfordshire			Sample No.	1
Soil Description	Brown, Slightly Clayey, Very Sandy GRAVEL With COBBLES			Depth, m	0.80
Specimen Reference		Specimen Depth	m	Sample Type	B
Test Method	BS1377:Part 2:1990, clauses 9.2 and 9.4			KeyLAB ID	EAT_2021101228



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0203	10
90	100	0.0060	6
75	100	0.0020	3
63	90		
50	77		
37.5	65		
28	53		
20	46		
14	43		
10	41		
6.3	38		
5	37		
3.35	36		
2	34		
1.18	33		
0.6	32	Particle density (assumed)	
0.425	30	2.65 Mg/m3	
0.3	27		
0.212	21		
0.15	17		
0.063	11.1		

Sample Proportions	% dry mass
Very coarse	10
Gravel	55
Sand	23
Silt	8
Clay	3

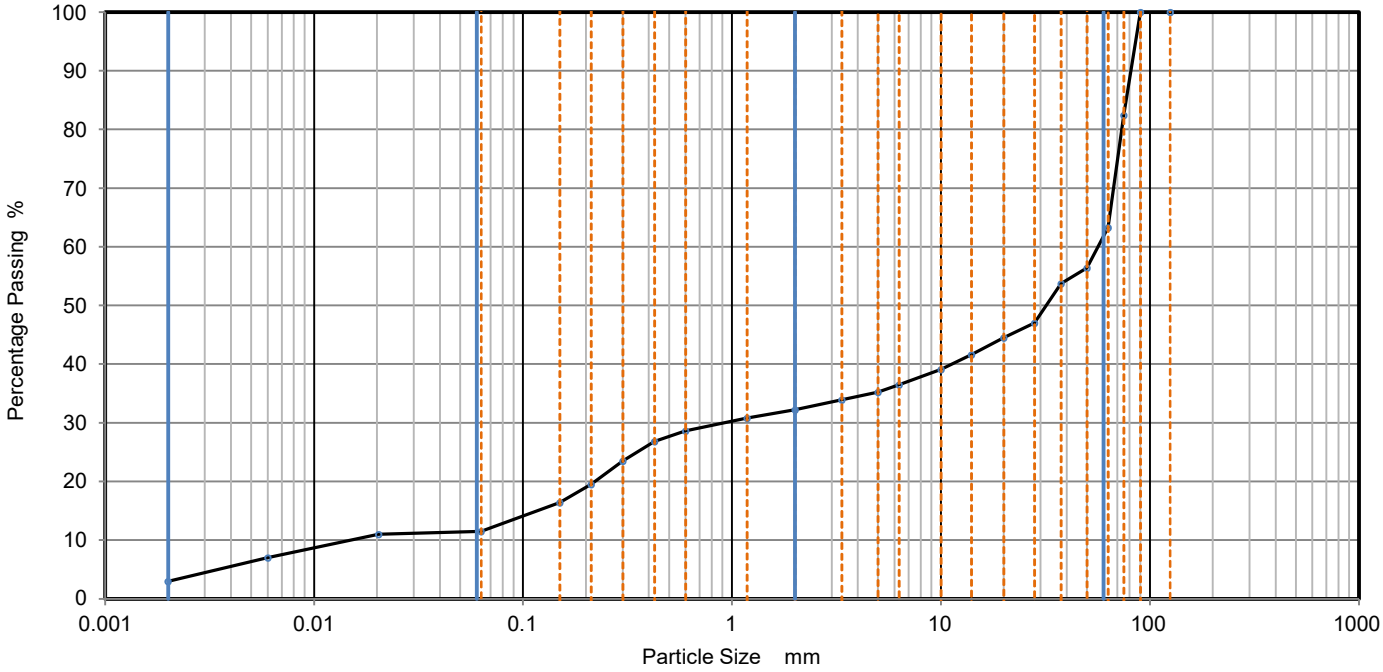
Grading Analysis		
D_{100}	mm	
D_{60}	mm	33.2
D_{30}	mm	0.419
D_{10}	mm	0.0254
Uniformity Coefficient		1300
Curvature Coefficient		0.21

Remarks

Preparation and testing in accordance with BS EN ISO 17892-4:2016 unless noted below

Date	Approved By		UKAS Accredited Laboratory No. 20632
22/10/2021 11:28	N Hodson	N Hodson	

EXPLORATION & TESTING ASSOCIATES	PARTICLE SIZE DISTRIBUTION			Job Ref	C10172
				Borehole/Pit No.	TP136
Site Name	Oxfordshire			Sample No.	1
Soil Description	Brown, Slightly Clayey, Very Sandy GRAVEL with COBBLES			Depth, m	1.20
Specimen Reference		Specimen Depth	m	Sample Type	B
Test Method	BS EN ISO 17892-4:2016 - Wet & Dry Sieving			KeyLAB ID	EAT_2021101229



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0203	11
90	100	0.0060	7
75	82	0.0020	3
63	63		
50	56		
37.5	54		
28	47		
20	45		
14	42		
10	39		
6.3	37		
5	35		
3.35	34		
2	32		
1.18	31		
0.6	29	Particle density (assumed)	
0.425	27	2.65 Mg/m3	
0.3	24		
0.212	20		
0.15	16		
0.063	11.5		

Sample Proportions	% dry mass
Very coarse	37
Gravel	31
Sand	21
Silt	8
Clay	3

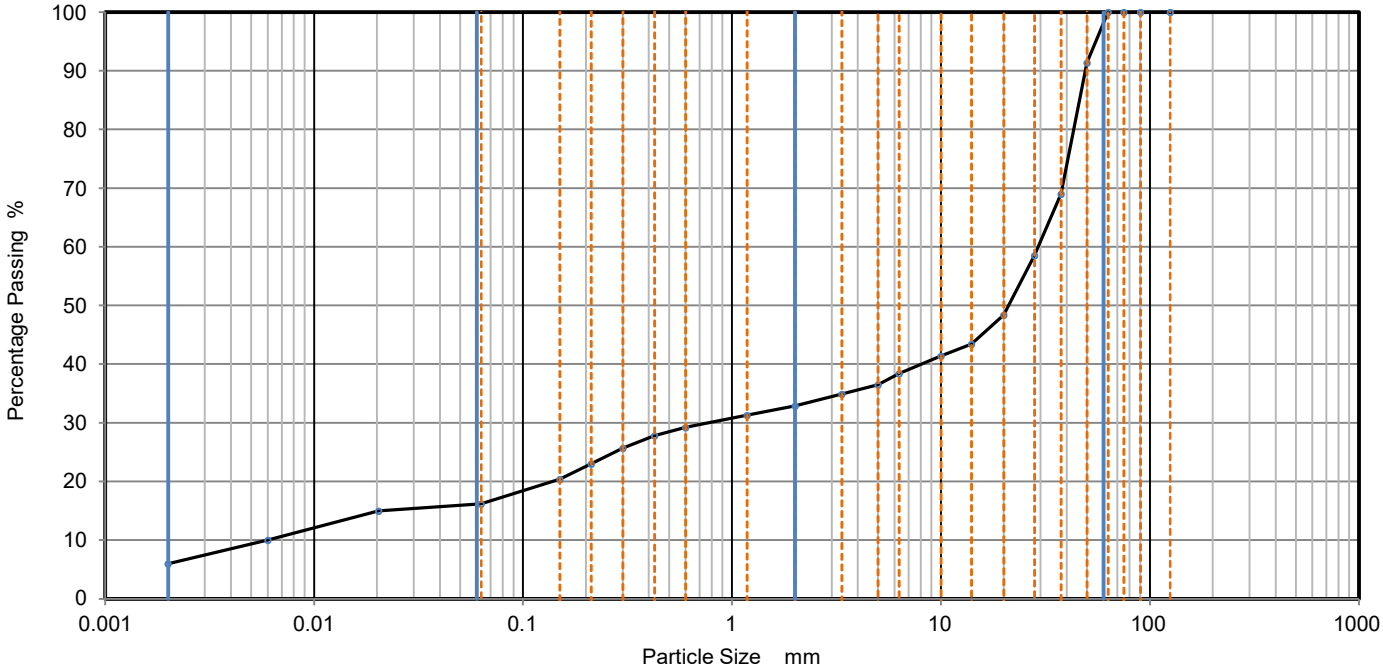
Grading Analysis		
D_{100}	mm	
D_{60}	mm	56.4
D_{30}	mm	0.932
D_{10}	mm	0.0137
Uniformity Coefficient		4100
Curvature Coefficient		1.1

Remarks

Preparation and testing in accordance with BS EN ISO 17892-4:2016 unless noted below

Date	Approved By		UKAS Accredited Laboratory No. 20632
28/10/2021 12:10	N O'Brien		

EXPLORATION & TESTING ASSOCIATES	PARTICLE SIZE DISTRIBUTION			Job Ref	C10172
				Borehole/Pit No.	TP140
Site Name	Oxfordshire			Sample No.	1
Soil Description	Brown, Slightly Sandy, Slightly Clayey GRAVEL			Depth, m	0.50
Specimen Reference		Specimen Depth	m	Sample Type	B
Test Method	BS1377:Part 2:1990, clauses 9.2 and 9.4			KeyLAB ID	EAT_2021101232



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0203	15
90	100	0.0060	10
75	100	0.0020	6
63	100		
50	91		
37.5	69		
28	59		
20	48		
14	43		
10	41		
6.3	38		
5	37		
3.35	35		
2	33		
1.18	31		
0.6	29	Particle density	(assumed)
0.425	28	2.65	Mg/m3
0.3	26		
0.212	23		
0.15	20		
0.063	16.2		

Sample Proportions	% dry mass
Very coarse	0
Gravel	67
Sand	17
Silt	10
Clay	6

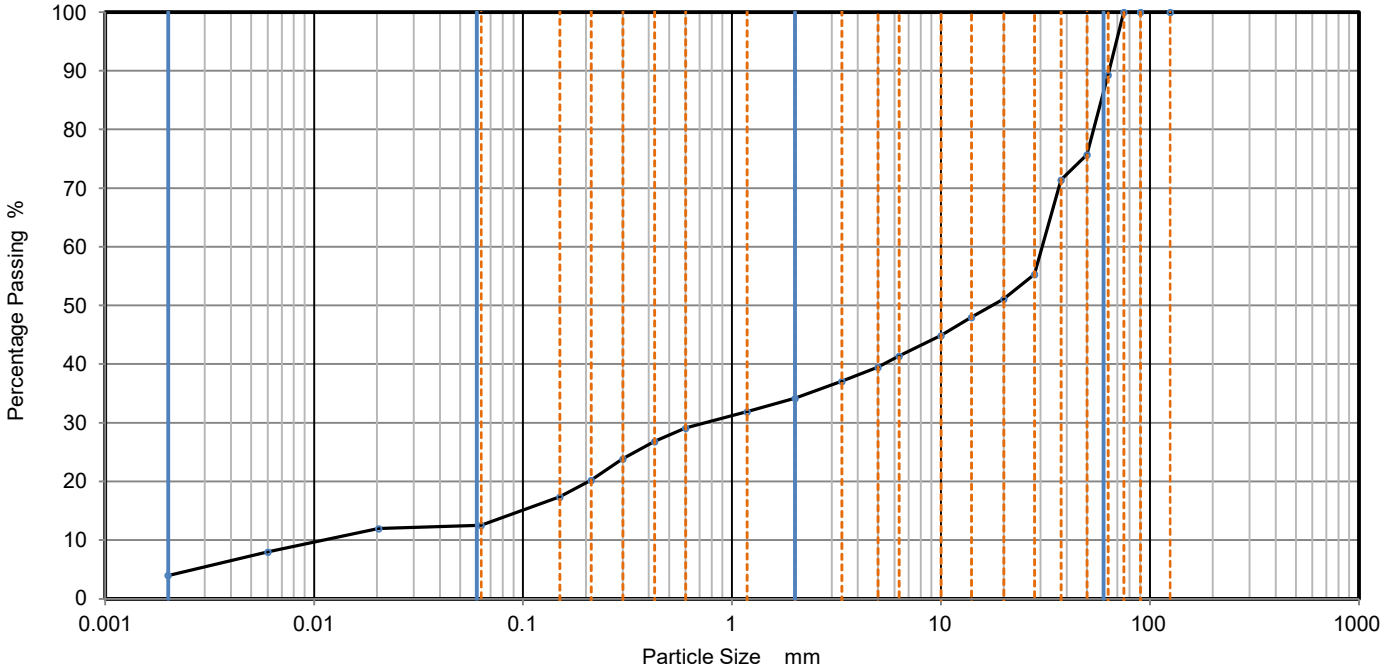
Grading Analysis		
D_{100}	mm	
D_{60}	mm	29.2
D_{30}	mm	0.769
D_{10}	mm	0.00552
Uniformity Coefficient		5300
Curvature Coefficient		3.7

Remarks

Preparation and testing in accordance with BS EN ISO 17892-4:2016 unless noted below

Date	Approved By		UKAS Accredited Laboratory No. 20632
22/10/2021 11:25	N Hodson	NHodson	

EXPLORATION & TESTING ASSOCIATES	PARTICLE SIZE DISTRIBUTION			Job Ref	C10172
				Borehole/Pit No.	TP149
Site Name	Oxfordshire			Sample No.	1
Soil Description	Brown, Clayey, Very Sandy GRAVEL with COBBLES			Depth, m	0.90
Specimen Reference		Specimen Depth	m	Sample Type	B
Test Method	BS EN ISO 17892-4:2016 - Wet & Dry Sieving			KeyLAB ID	EAT_2021101235



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0203	12
90	100	0.0060	8
75	100	0.0020	4
63	89		
50	76		
37.5	71		
28	55		
20	51		
14	48		
10	45		
6.3	41		
5	40		
3.35	37		
2	34		
1.18	32		
0.6	29	Particle density	(assumed)
0.425	27	2.65	Mg/m3
0.3	24		
0.212	20		
0.15	17		
0.063	12.5		

Sample Proportions	% dry mass
Very coarse	11
Gravel	55
Sand	22
Silt	8
Clay	4

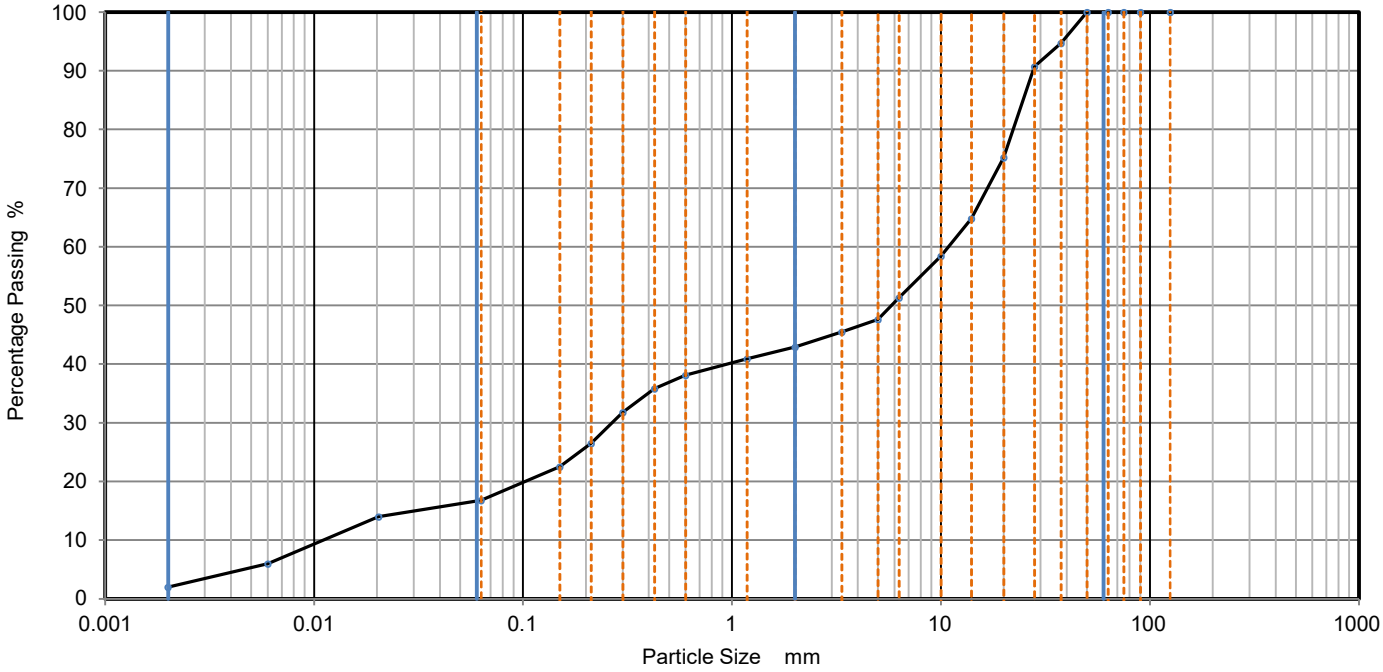
Grading Analysis		
D_{100}	mm	
D_{60}	mm	30.5
D_{30}	mm	0.748
D_{10}	mm	0.0114
Uniformity Coefficient		2700
Curvature Coefficient		1.6

Remarks

Preparation and testing in accordance with BS EN ISO 17892-4:2016 unless noted below

Date	Approved By		UKAS Accredited Laboratory No. 20632
28/10/2021 12:09	N O'Brien		

EXPLORATION & TESTING ASSOCIATES	PARTICLE SIZE DISTRIBUTION			Job Ref	C10172
				Borehole/Pit No.	TP150
Site Name	Oxfordshire			Sample No.	1
Soil Description	Brown, Very Sandy CLAY			Depth, m	0.50
Specimen Reference		Specimen Depth	m	Sample Type	B
Test Method	BS1377:Part 2:1990, clauses 9.2 and 9.4			KeyLAB ID	EAT_2021101236



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0203	14
90	100	0.0060	6
75	100	0.0020	2
63	100		
50	100		
37.5	95		
28	91		
20	75		
14	65		
10	58		
6.3	51		
5	48		
3.35	46		
2	43		
1.18	41		
0.6	38	Particle density	(assumed)
0.425	36	2.65	Mg/m3
0.3	32		
0.212	27		
0.15	23		
0.063	16.8		

Sample Proportions	% dry mass
Very coarse	0
Gravel	57
Sand	26
Silt	15
Clay	2

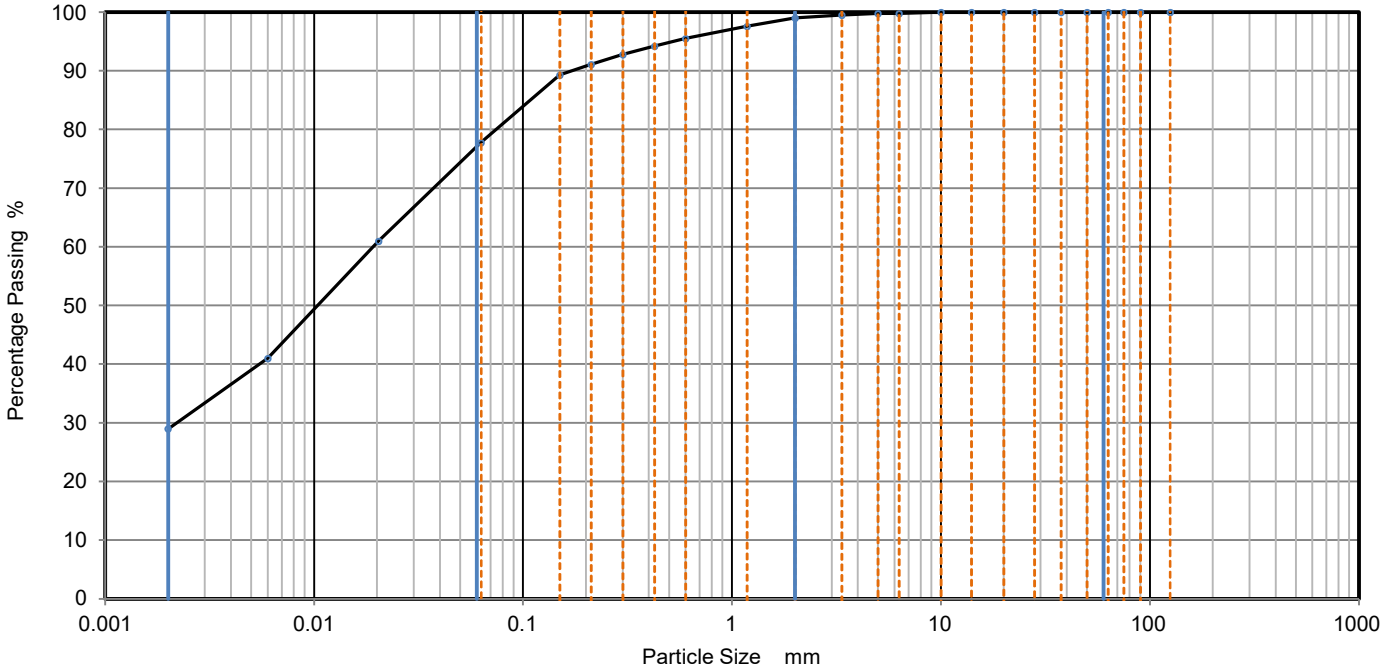
Grading Analysis		
D_{100}	mm	
D_{60}	mm	10.9
D_{30}	mm	0.266
D_{10}	mm	0.0113
Uniformity Coefficient		960
Curvature Coefficient		0.57

Remarks

Preparation and testing in accordance with BS EN ISO 17892-4:2016 unless noted below

Date	Approved By		UKAS Accredited Laboratory No. 20632
22/10/2021 11:24	N Hodson	N Hodson	

EXPLORATION & TESTING ASSOCIATES	PARTICLE SIZE DISTRIBUTION			Job Ref	C10172
				Borehole/Pit No.	TP154
Site Name	Oxfordshire			Sample No.	1
Soil Description	Brown, Slightly Sandy CLAY			Depth, m	1.00
Specimen Reference		Specimen Depth	m	Sample Type	B
Test Method	BS1377:Part 2:1990, clauses 9.2 and 9.4			KeyLAB ID	EAT_2021101241



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0203	61
90	100	0.0060	41
75	100	0.0020	29
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	100		
2	99		
1.18	98		
0.6	96	Particle density	(assumed)
0.425	94	2.65	Mg/m3
0.3	93		
0.212	91		
0.15	89		
0.063	77.8		

Sample Proportions	% dry mass
Very coarse	0
Gravel	1
Sand	21
Silt	49
Clay	29

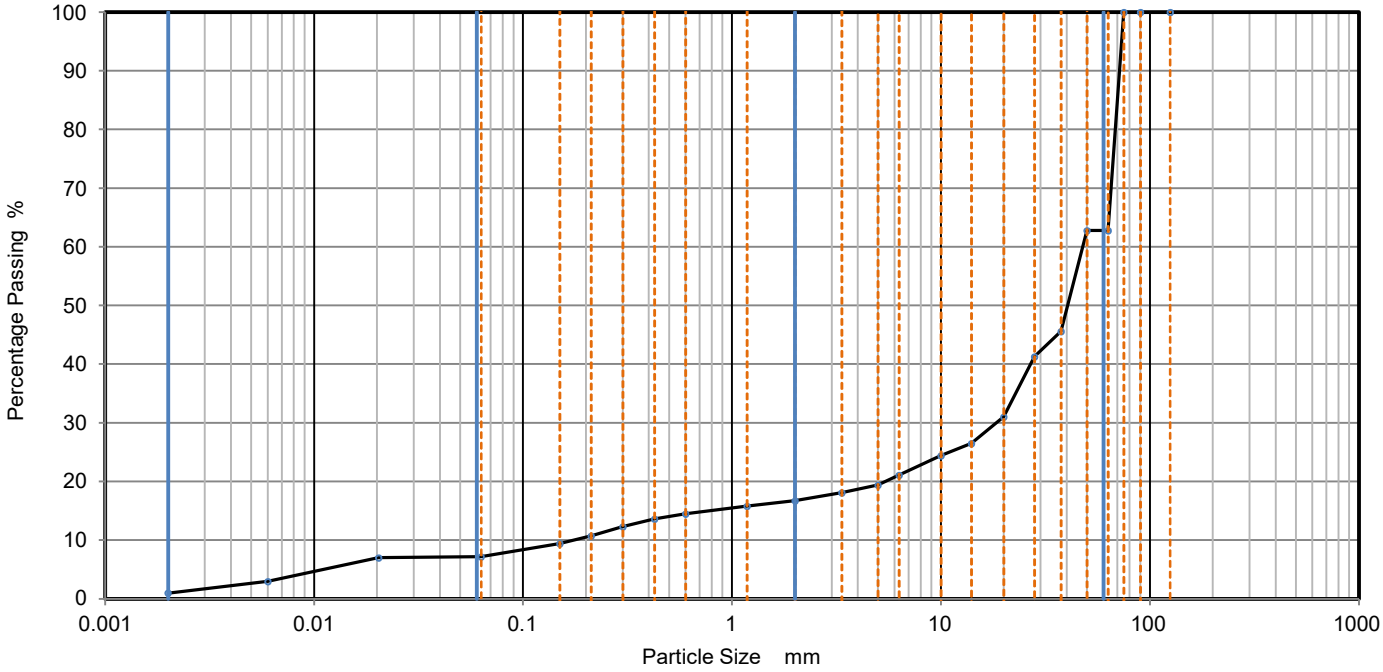
Grading Analysis		
D_{100}	mm	
D_{60}	mm	0.0189
D_{30}	mm	0.00225
D_{10}	mm	
Uniformity Coefficient		
Curvature Coefficient		

Remarks

Preparation and testing in accordance with BS EN ISO 17892-4:2016 unless noted below

Date	Approved By		UKAS Accredited Laboratory No. 20632
22/10/2021 11:29	N Hodson	N Hodson	

EXPLORATION & TESTING ASSOCIATES	PARTICLE SIZE DISTRIBUTION			Job Ref	C10172
				Borehole/Pit No.	TP163
Site Name	Oxfordshire			Sample No.	1
Soil Description	Brown clayey sandy GRAVEL with COBBLES			Depth, m	0.70
Specimen Reference		Specimen Depth	m	Sample Type	B
Test Method	BS EN ISO 17892-4:2016 - Wet & Dry Sieving			KeyLAB ID	EAT_2021101245



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0203	7
90	100	0.0060	3
75	100	0.0020	1
63	63		
50	63		
37.5	46		
28	41		
20	31		
14	27		
10	24		
6.3	21		
5	19		
3.35	18		
2	17		
1.18	16		
0.6	15	Particle density	(assumed)
0.425	14	2.65	Mg/m3
0.3	12		
0.212	11		
0.15	9		
0.063	7.2		

Sample Proportions	% dry mass
Very coarse	37
Gravel	46
Sand	10
Silt	6
Clay	1

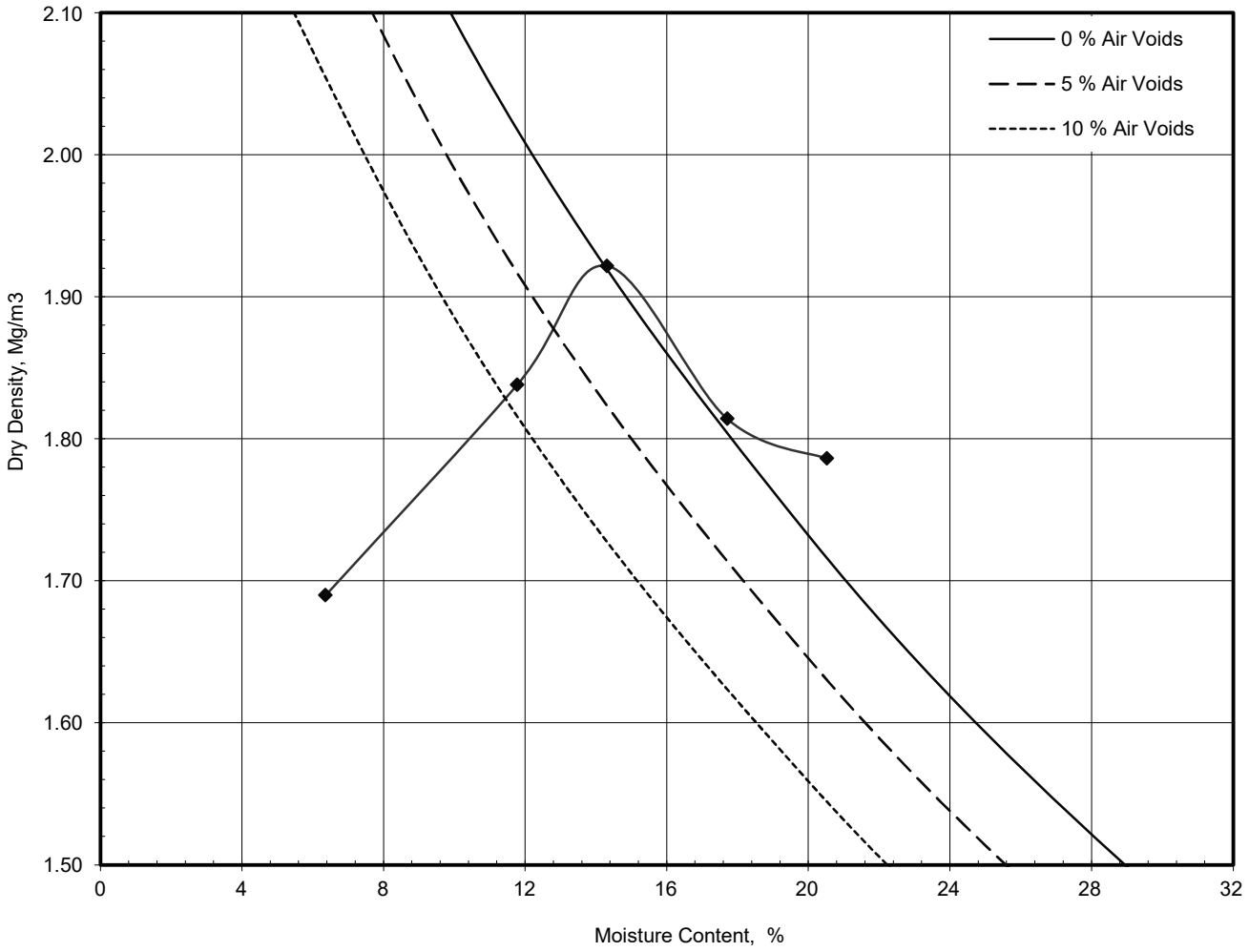
Grading Analysis		
D_{100}	mm	
D_{60}	mm	47.7
D_{30}	mm	18.5
D_{10}	mm	0.177
Uniformity Coefficient		270
Curvature Coefficient		40

Remarks

Preparation and testing in accordance with BS EN ISO 17892-4:2016 unless noted below

Date	Approved By		UKAS Accredited Laboratory No. 20632
28/10/2021 12:07	N O'Brien		

EXPLORATION & TESTING ASSOCIATES	Dry Density / Moisture Content Relationship Light Compaction			Job Ref	C10172
				Borehole / Pit No	TP150
Site Name	Oxfordshire			Sample No	1
Soil Description	Brown, Sandy, Gravelly CLAY			Depth	0.50 m
Specimen Ref.		Specimen Depth	m	Sample Type	B
Test Method	BS1377:Part 4:1990, clause 3.4, 2.5kg rammer			Keylab ID	EAT_2021101236
				Compaction Test Reference/No.	

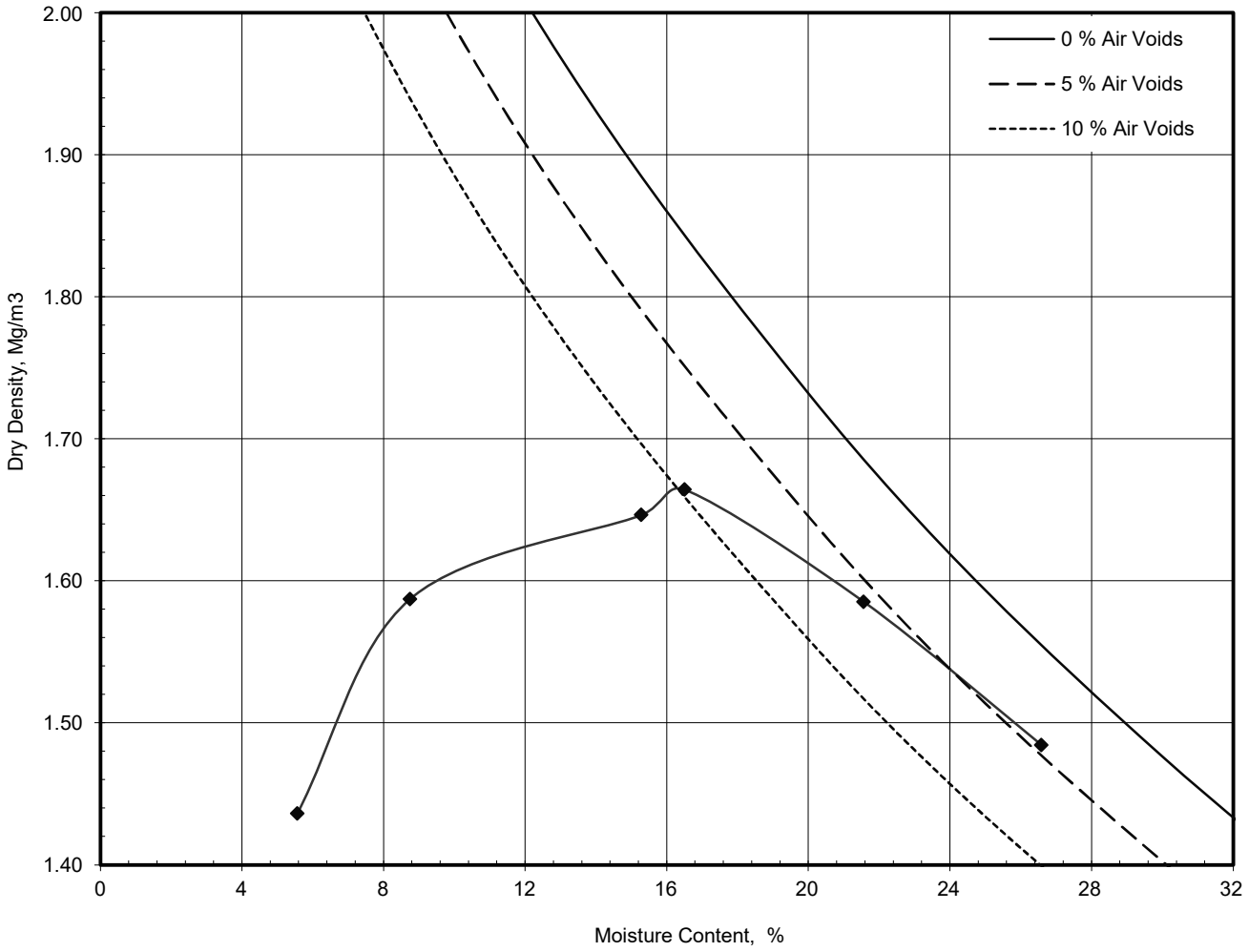


Preparation		Material used was air dried
Mould Type		CBR
Samples Used		Single sample tested
Material Retained on 37.5 mm Sieve	%	8
Material Retained on 20.0 mm Sieve	%	21
Particle Density - Assumed	Mg/m³	2.65

Maximum Dry Density	Mg/m³	**1.92**
Optimum Moisture Content	%	**14**

Comments	Date	Checked By	Approved	UKAS Accredited Laboratory No. 20632
	22/10/2021 10:43	N. O'Brien	N. Hodson	

EXPLORATION & TESTING ASSOCIATES	Dry Density / Moisture Content Relationship Light Compaction			Job Ref	C10172
				Borehole / Pit No	TP154
Site Name	Oxfordshire			Sample No	1
Soil Description	Brown, Slightly Sandy CLAY			Depth	1.00 m
Specimen Ref.		Specimen Depth	m	Sample Type	B
Test Method	BS1377:Part 4:1990, clause 3.3, 2.5kg rammer			Keylab ID	EAT_2021101241
				Compaction Test Reference/No.	



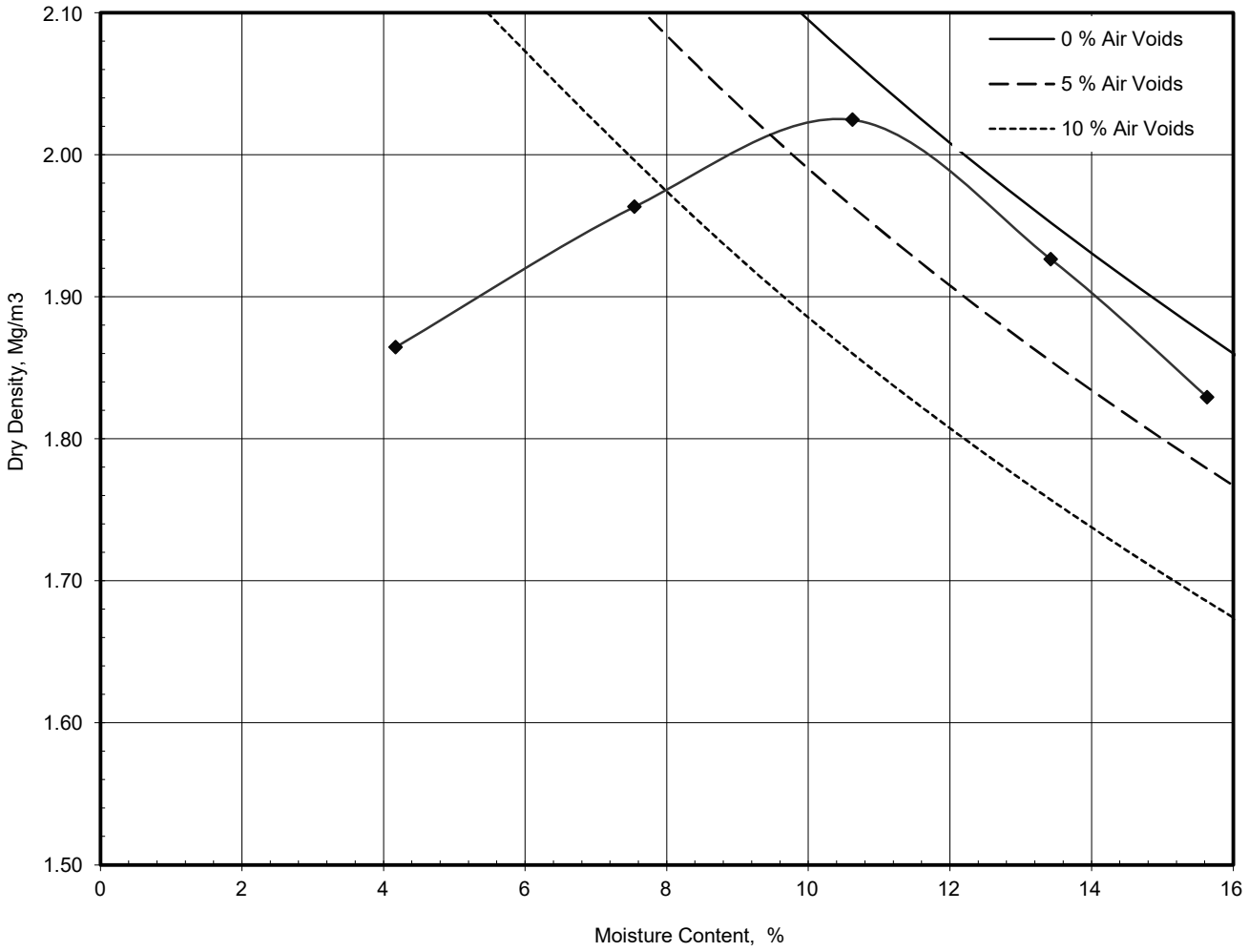
Preparation		Material used was air dried
Mould Type		One Litre
Samples Used		Single sample tested
Material Retained on 37.5 mm Sieve	%	0
Material Retained on 20.0 mm Sieve	%	0
Particle Density - Assumed	Mg/m³	2.65

Maximum Dry Density	Mg/m³	**1.66**
Optimum Moisture Content	%	**16**

Comments	Date	Checked By	Approved	UKAS Accredited Laboratory No. 20632
	22/10/2021 10:43	N. O'Brien	N. Hodson	

EXPLORATION & TESTING ASSOCIATES	Dry Density / Moisture Content Relationship Heavy Compaction	Job Ref	C10172
		Borehole / Pit No	SA09

Site Name	Oxfordshire			Sample No	1
Soil Description	Brown, Clayey, Sandy GRAVEL with COBBLES			Depth	0.70 m
Specimen Ref.		Specimen Depth	m	Sample Type	B
Test Method	BS1377:Part 4:1990, clause 3.6, 4.5kg rammer			Keylab ID	EAT_2021101210
				Compaction Test Reference/No.	



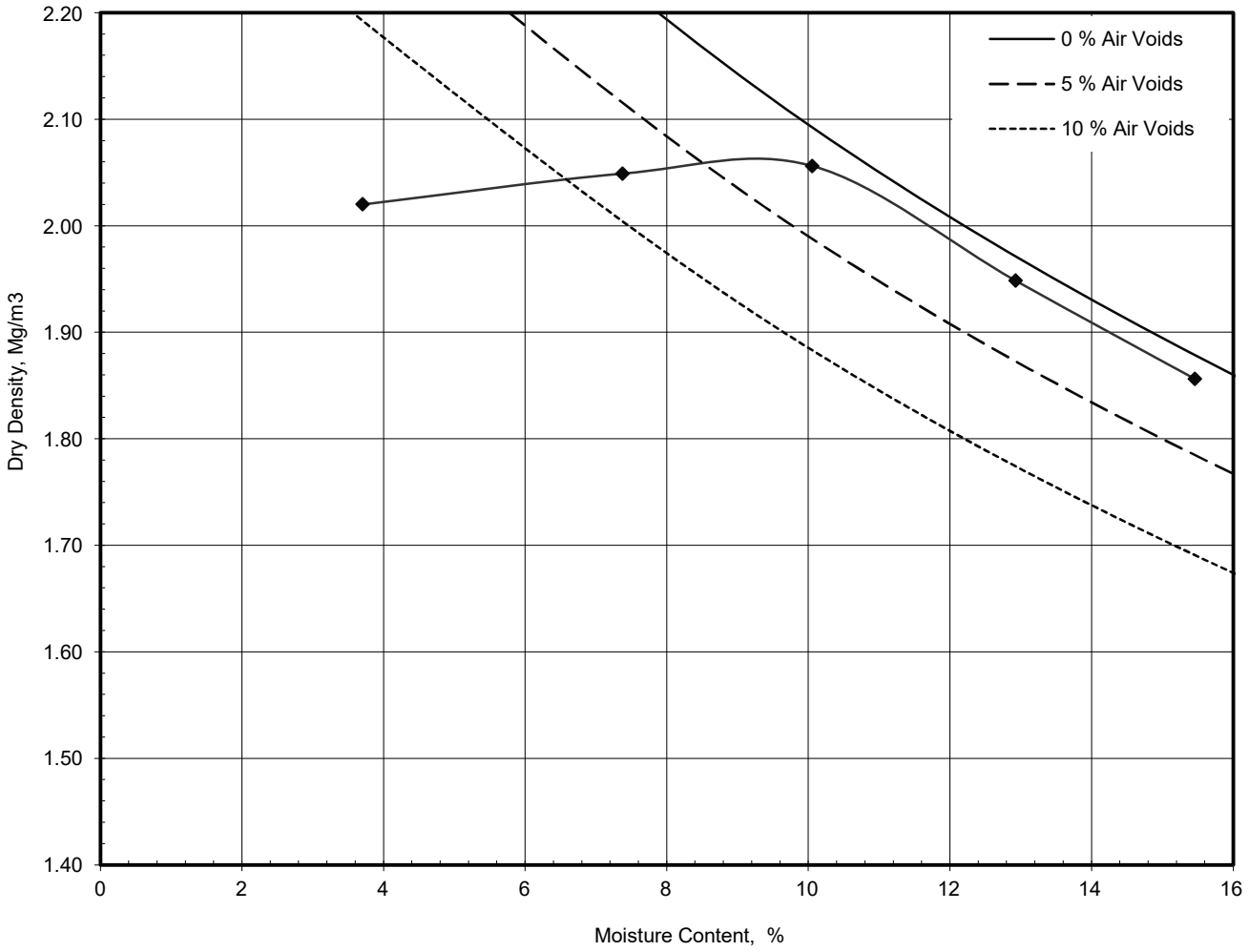
Preparation		Material used was air dried
Mould Type		CBR
Samples Used		Single sample tested
Material Retained on 37.5 mm Sieve	%	56
Material Retained on 20.0 mm Sieve	%	13
Particle Density - Assumed	Mg/m³	2.65

Maximum Dry Density	Mg/m³	**2.02**
Optimum Moisture Content	%	**11**

Comments	Date	Checked	Approved	
Sample Tested Deviating from BS:1377-4:1990 As Instructed.	22/10/2021 10:52	N. O'Brien	N. Hodson	UKAS Accredited Laboratory No. 20632

EXPLORATION & TESTING ASSOCIATES	**Dry Density / Moisture Content Relationship Heavy Compaction**	Job Ref	**C10172**
		Borehole / Pit No	TP109

Site Name	**Oxfordshire**			Sample No	2
Soil Description	Brown, Clayey, Sandy GRAVEL with COBBLES			Depth	0.60 m
Specimen Ref.		Specimen Depth	m	Sample Type	B
Test Method	BS1377:Part 4:1990, clause 3.6, 4.5kg rammer			Keylab ID	EAT_2021101212
				Compaction Test Reference/No.	



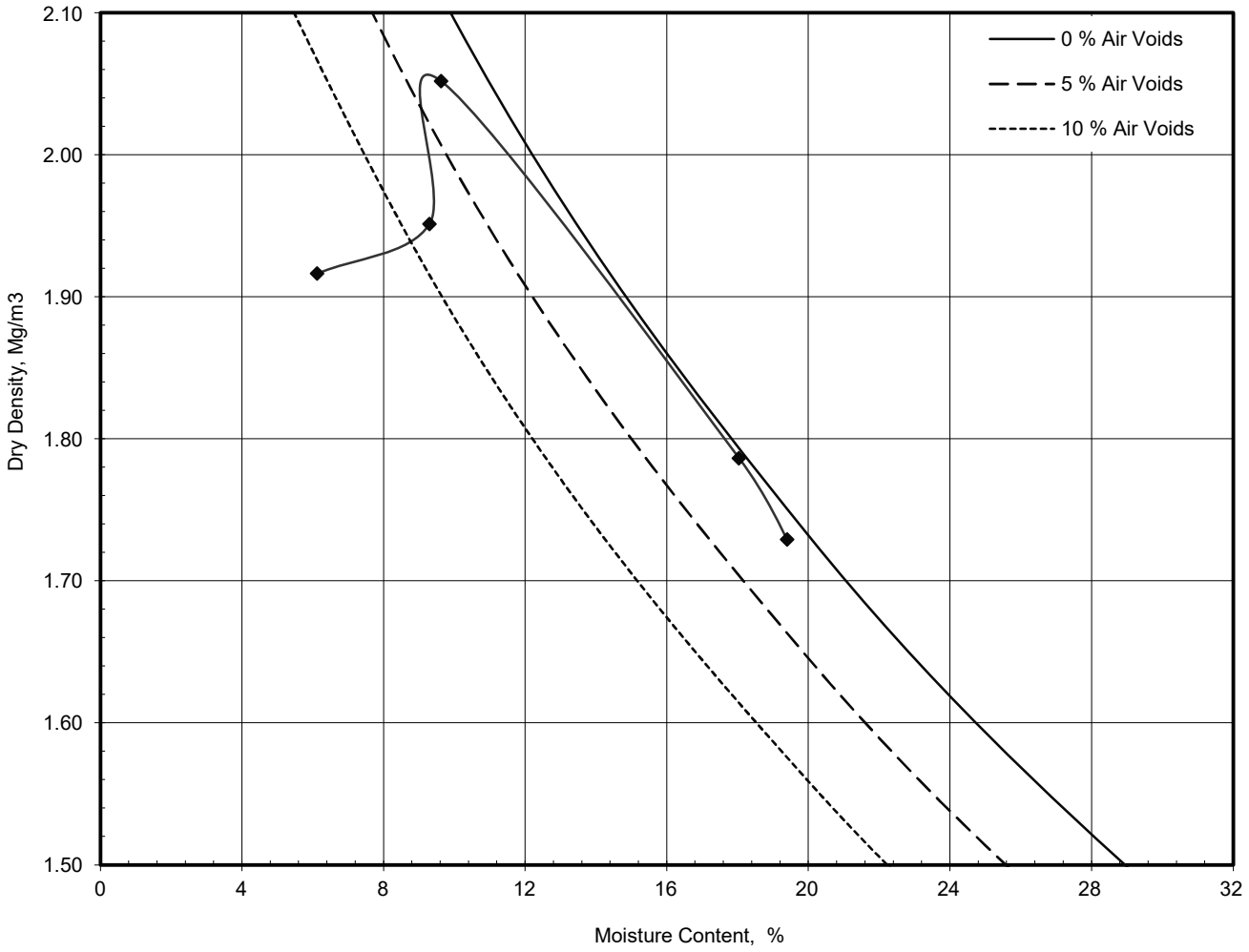
Preparation		Material used was air dried
Mould Type		CBR
Samples Used		Single sample tested
Material Retained on 37.5 mm Sieve	%	52
Material Retained on 20.0 mm Sieve	%	19
Particle Density - Assumed	Mg/m³	2.65

Maximum Dry Density	Mg/m³	**2.06**
Optimum Moisture Content	%	**10**

Comments	Date	Checked	Approved	
Sample Tested Deviating from BS:1377-4:1990 As Instructed.	22/10/2021 10:48	N. O'Brien	N. Hodson	UKAS Accredited Laboratory No. 20632

EXPLORATION & TESTING ASSOCIATES	Dry Density / Moisture Content Relationship Heavy Compaction	Job Ref	C10172
		Borehole / Pit No	TP119

Site Name	Oxfordshire			Sample No	1
Soil Description	Brown, Slightly Sandy, Gravelly CLAY with COBBLES			Depth	0.50 m
Specimen Ref.		Specimen Depth	m	Sample Type	B
Test Method	BS1377:Part 4:1990, clause 3.6, 4.5kg rammer			Keylab ID	EAT_2021101215
				Compaction Test Reference/No.	



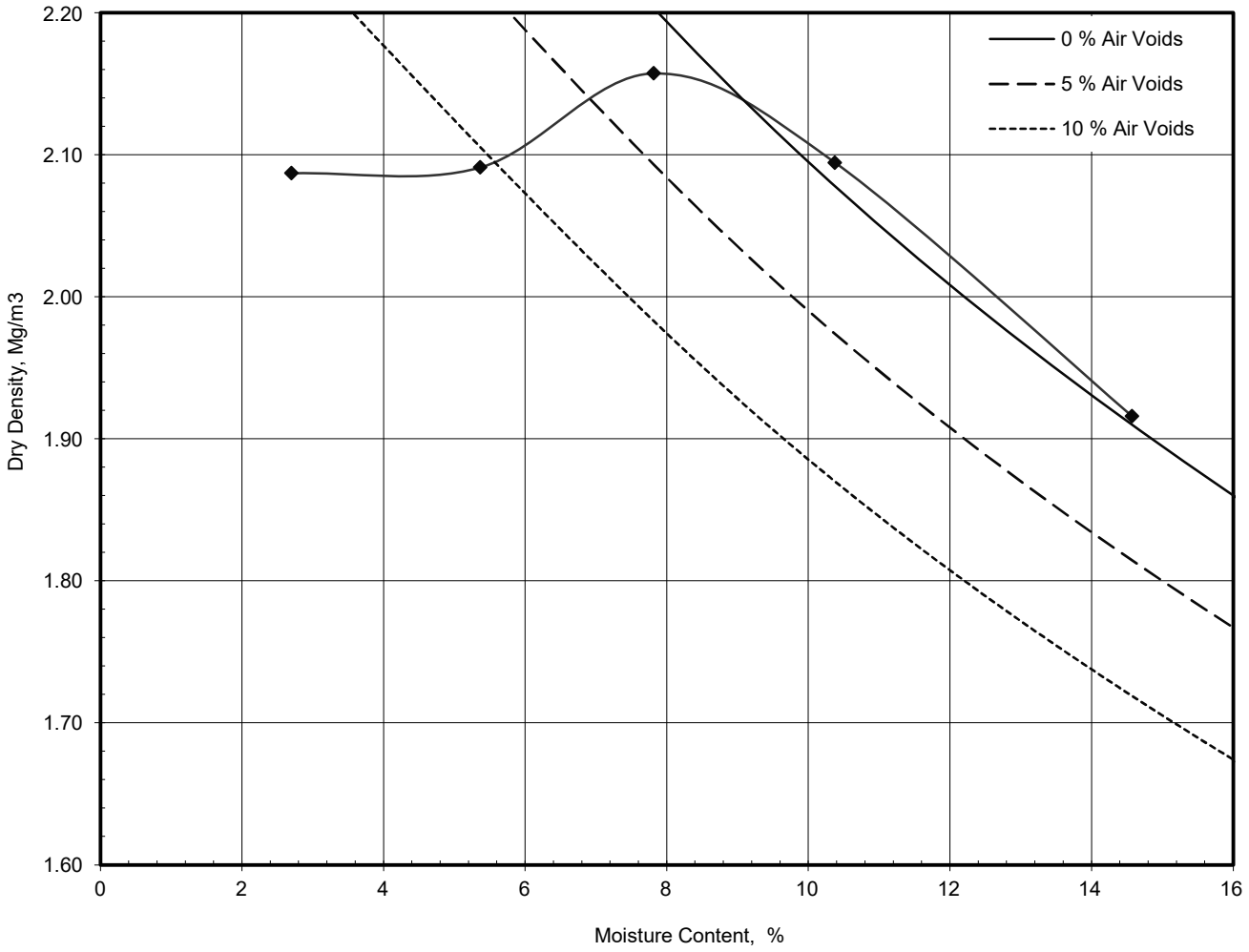
Preparation		Material used was air dried
Mould Type		CBR
Samples Used		Single sample tested
Material Retained on 37.5 mm Sieve	%	54
Material Retained on 20.0 mm Sieve	%	10
Particle Density - Assumed	Mg/m³	2.65

Maximum Dry Density	Mg/m³	**2.05**
Optimum Moisture Content	%	**9.6**

Comments	Date	Checked	Approved	
Sample Tested Deviating from BS:1377-4:1990 As Instructed.	22/10/2021 10:45	N. O'Brien	N. Hodson	UKAS Accredited Laboratory No. 20632

EXPLORATION & TESTING ASSOCIATES	Dry Density / Moisture Content Relationship Heavy Compaction	Job Ref	C10172
		Borehole / Pit No	TP121

Site Name	Oxfordshire			Sample No	1
Soil Description	Brown, Slightly Clayey, Sandy GRAVEL			Depth	1.00 m
Specimen Ref.		Specimen Depth	m	Sample Type	B
Test Method	BS1377:Part 4:1990, clause 3.6, 4.5kg rammer			Keylab ID	EAT_2021101218
				Compaction Test Reference/No.	



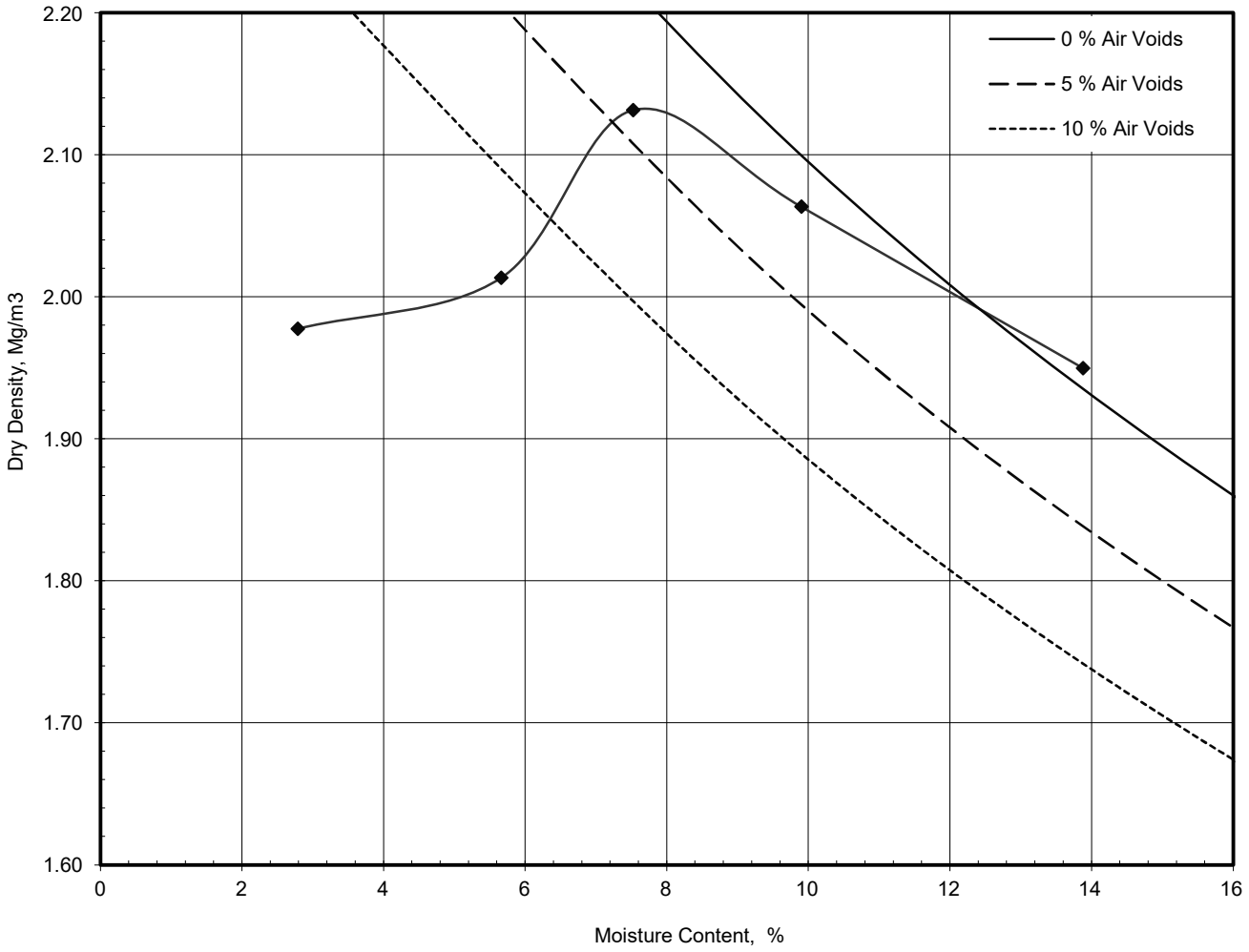
Preparation		Material used was air dried
Mould Type		CBR
Samples Used		Single sample tested
Material Retained on 37.5 mm Sieve	%	0
Material Retained on 20.0 mm Sieve	%	8
Particle Density - Assumed	Mg/m³	2.65

Maximum Dry Density	Mg/m³	**2.16**
Optimum Moisture Content	%	**7.8**

Comments	Date	Checked	Approved	
			N. Hodson	UKAS Accredited Laboratory No. 20632
	22/10/2021 11:05	N. O'Brien	NHodson	

EXPLORATION & TESTING ASSOCIATES	Dry Density / Moisture Content Relationship Heavy Compaction	Job Ref	C10172
		Borehole / Pit No	TP131

Site Name	Oxfordshire			Sample No	1
Soil Description	Brown, Slightly Clayey, Very Sandy GRAVEL with COBBLES			Depth	0.80 m
Specimen Ref.		Specimen Depth	m	Sample Type	B
Test Method	BS1377:Part 4:1990, clause 3.6, 4.5kg rammer			Keylab ID	EAT_2021101228
				Compaction Test Reference/No.	



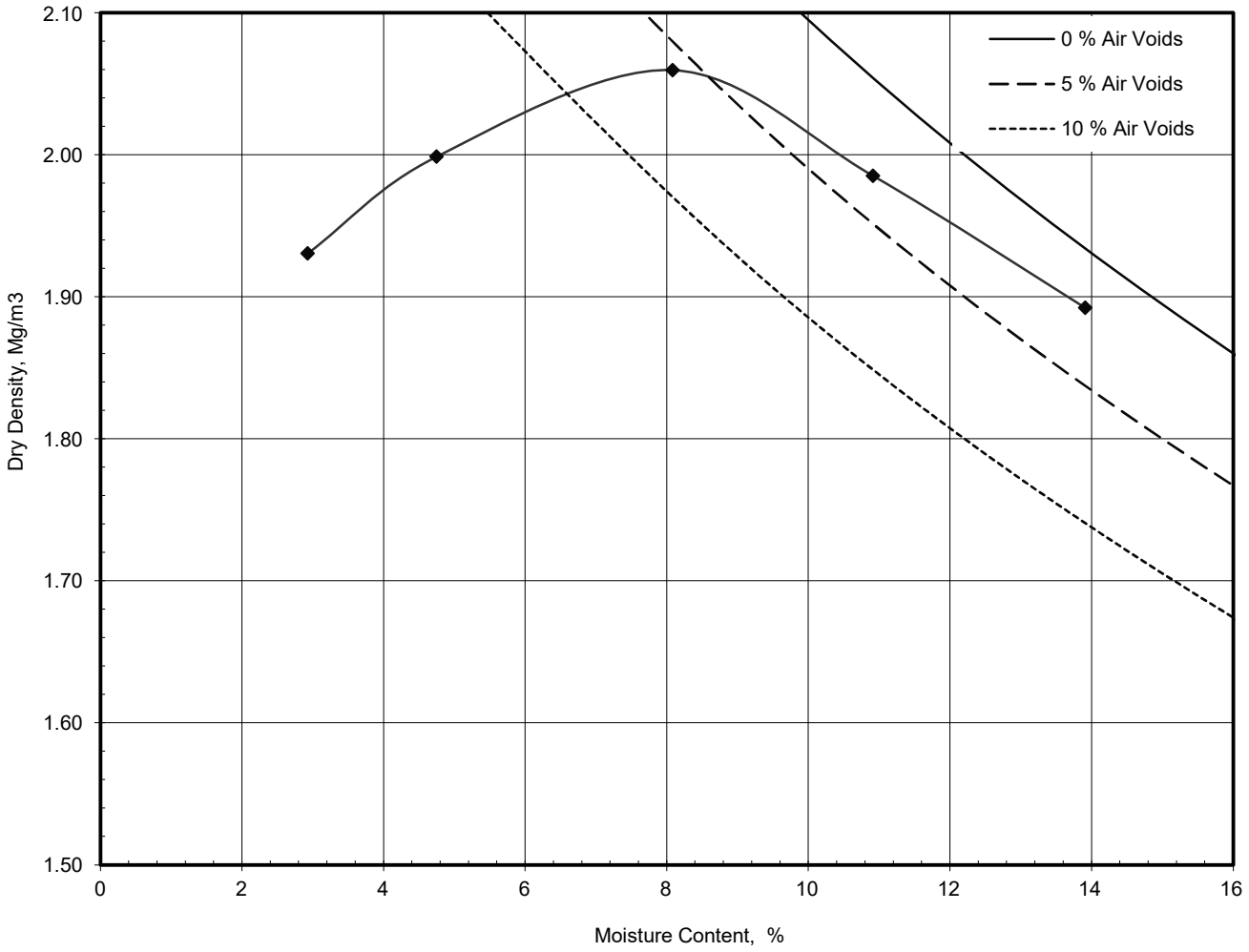
Preparation		Material used was air dried
Mould Type		CBR
Samples Used		Single sample tested
Material Retained on 37.5 mm Sieve	%	40
Material Retained on 20.0 mm Sieve	%	19
Particle Density - Assumed	Mg/m³	2.65

Maximum Dry Density	Mg/m³	**2.13**
Optimum Moisture Content	%	**7.5**

Comments	Date	Checked	Approved	
Sample Tested Deviating from BS:1377-4:1990 As Instructed.	22/10/2021 10:56	N. O'Brien	N. Hodson	UKAS Accredited Laboratory No. 20632

EXPLORATION & TESTING ASSOCIATES	Dry Density / Moisture Content Relationship Heavy Compaction	Job Ref	C10172
		Borehole / Pit No	TP136

Site Name	Oxfordshire			Sample No	1
Soil Description	Brown, Slightly Clayey, Very Sandy GRAVEL with COBBLES			Depth	1.20 m
Specimen Ref.		Specimen Depth	m	Sample Type	B
Test Method	BS1377:Part 4:1990, clause 3.6, 4.5kg rammer			Keylab ID	EAT_2021101229
				Compaction Test Reference/No.	



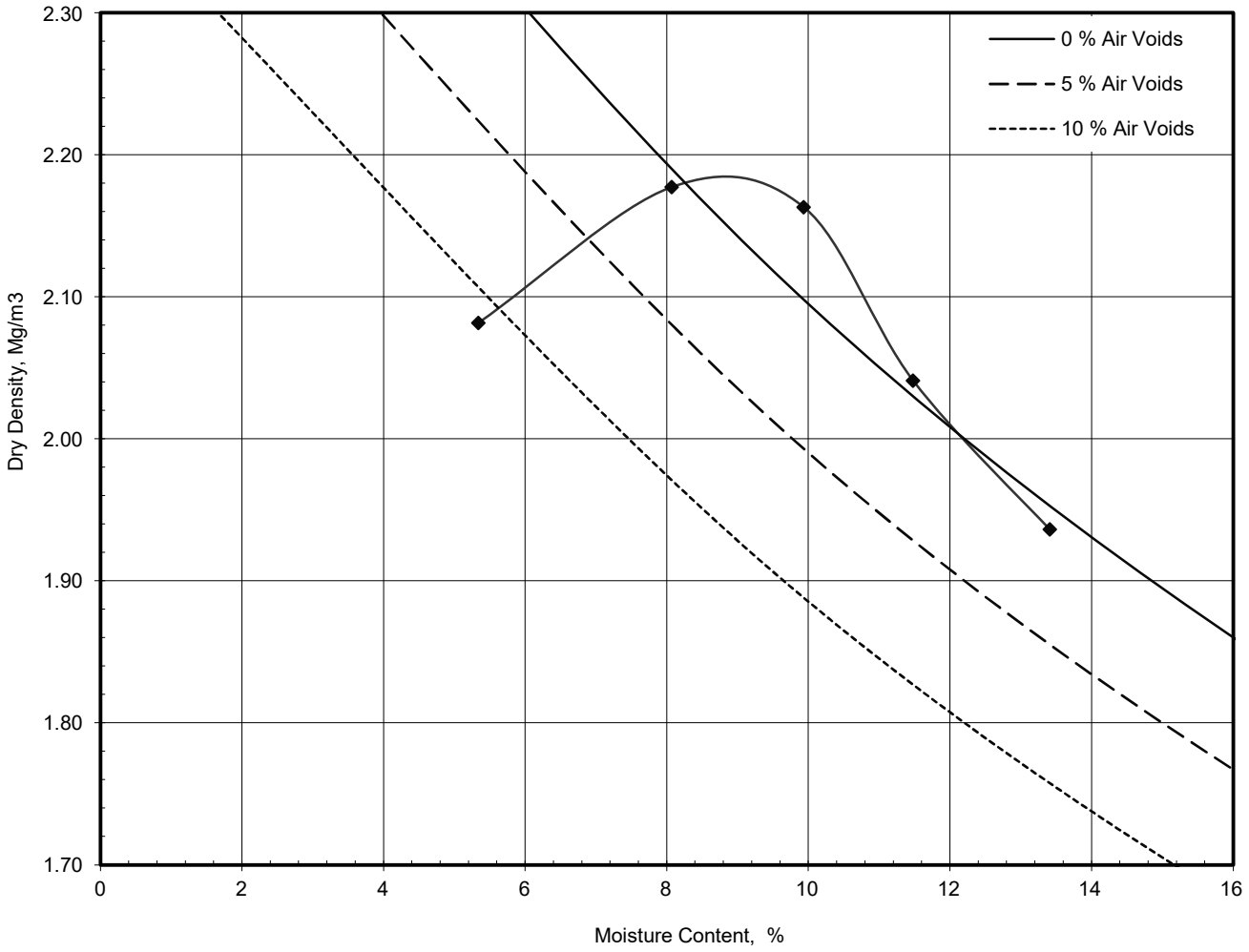
Preparation		Material used was air dried
Mould Type		CBR
Samples Used		Single sample tested
Material Retained on 37.5 mm Sieve	%	50
Material Retained on 20.0 mm Sieve	%	15
Particle Density - Assumed	Mg/m³	2.65

Maximum Dry Density	Mg/m³	**2.06**
Optimum Moisture Content	%	**8.1**

Comments	Date	Checked	Approved	
Sample Tested Deviating from BS:1377-4:1990 as Instructed.	22/10/2021 11:06	N. O'Brien	N. Hodson	UKAS Accredited Laboratory No. 20632

EXPLORATION & TESTING ASSOCIATES	**Dry Density / Moisture Content Relationship Heavy Compaction**	Job Ref	**C10172**
		Borehole / Pit No	TP139

Site Name	**Oxfordshire**			Sample No	1
Soil Description	Brown, Clayey, Sandy GRAVEL with COBBLES			Depth	0.80 m
Specimen Ref.		Specimen Depth	m	Sample Type	B
Test Method	BS1377:Part 4:1990, clause 3.6, 4.5kg rammer			Keylab ID	EAT_2021101231
				Compaction Test Reference/No.	



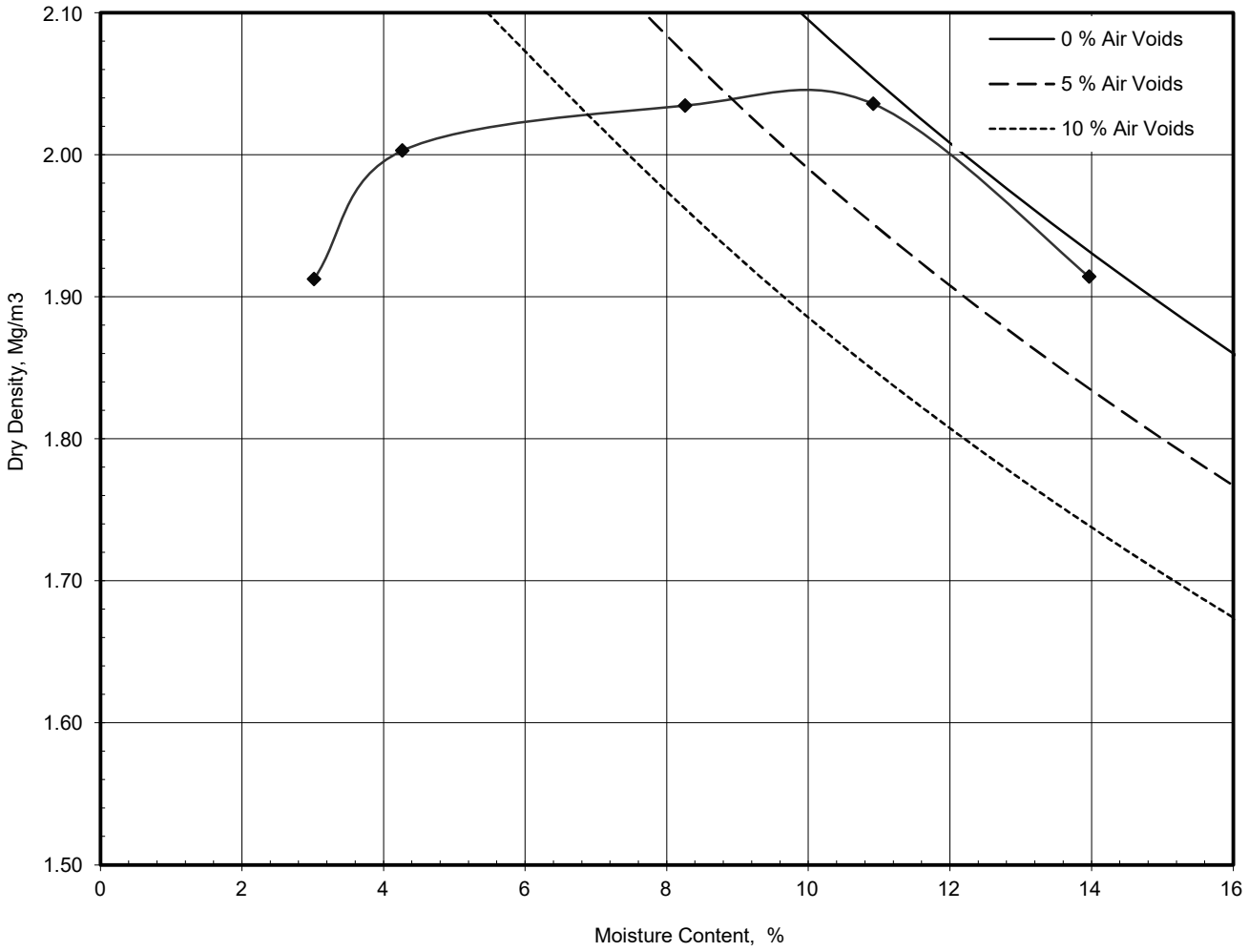
Preparation		Material used was air dried
Mould Type		CBR
Samples Used		Single sample tested
Material Retained on 37.5 mm Sieve	%	58
Material Retained on 20.0 mm Sieve	%	13
Particle Density - Assumed	Mg/m³	2.65

Maximum Dry Density	Mg/m³	**2.18**
Optimum Moisture Content	%	**9.9**

Comments	Date	Checked	Approved	
Sample Tested Deviating from BS:1377-4:1990 As Instructed.	22/10/2021 11:04	N. O'Brien	N. Hodson	UKAS Accredited Laboratory No. 20632

EXPLORATION & TESTING ASSOCIATES	Dry Density / Moisture Content Relationship Heavy Compaction	Job Ref	C10172
		Borehole / Pit No	TP142

Site Name	Oxfordshire			Sample No	1
Soil Description	Brown, Very Clayey, Sandy GRAVEL with COBBLES			Depth	0.80 m
Specimen Ref.		Specimen Depth	m	Sample Type	B
Test Method	BS1377:Part 4:1990, clause 3.6, 4.5kg rammer			Keylab ID	EAT_2021101233
				Compaction Test Reference/No.	



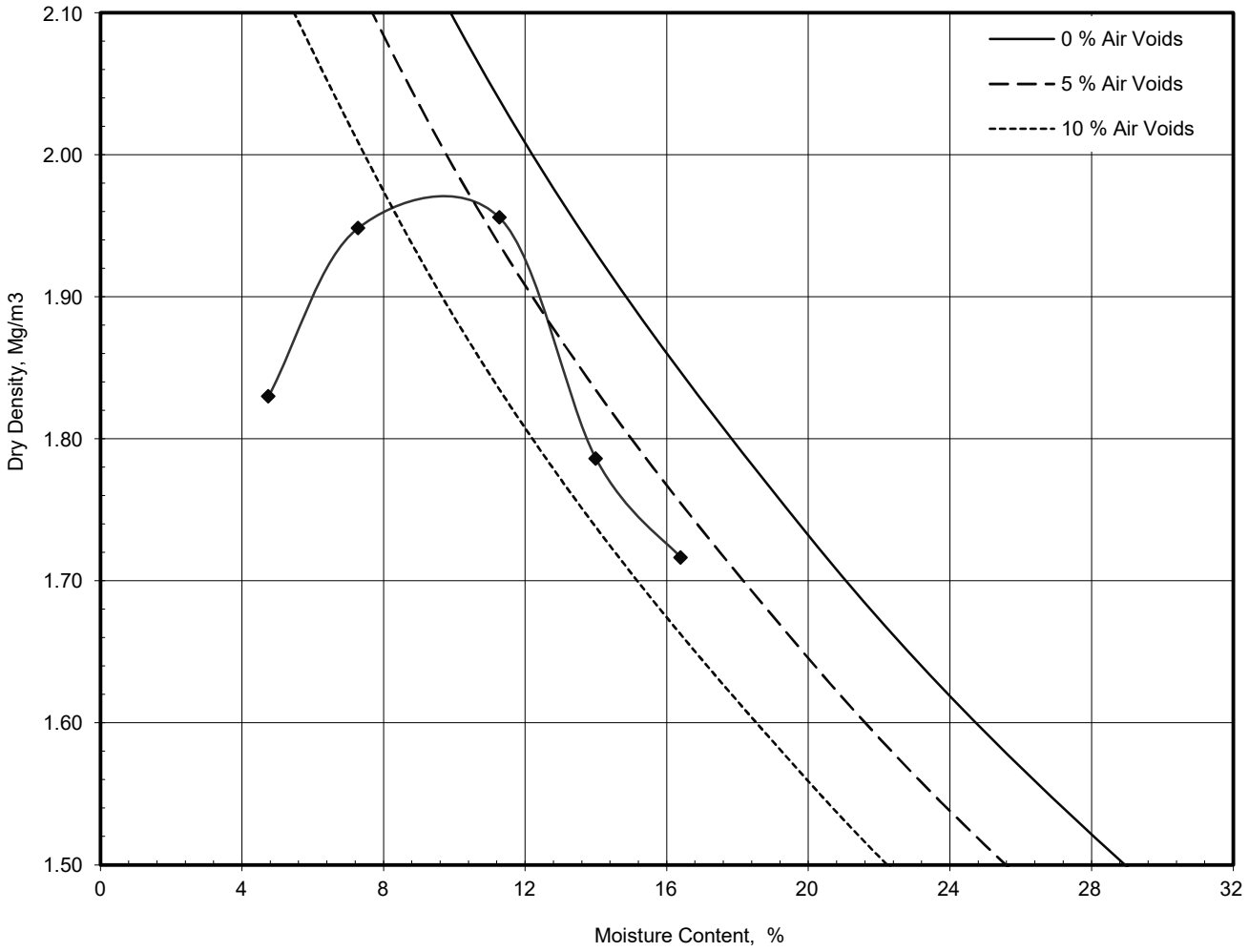
Preparation		Material used was air dried
Mould Type		CBR
Samples Used		Single sample tested
Material Retained on 37.5 mm Sieve	%	44
Material Retained on 20.0 mm Sieve	%	19
Particle Density - Assumed	Mg/m³	2.65

Maximum Dry Density	Mg/m³	**2.04**
Optimum Moisture Content	%	**8.3**

Comments	Date	Checked	Approved	
Sample Tested Deviating from BS:1377-4:1990 As Instructed.	22/10/2021 11:03	N. O'Brien	N. Hodson	UKAS Accredited Laboratory No. 20632

EXPLORATION & TESTING ASSOCIATES	Dry Density / Moisture Content Relationship Heavy Compaction	Job Ref	C10172
		Borehole / Pit No	TP149

Site Name	Oxfordshire			Sample No	1
Soil Description	Brown, Clayey, Very SANdy GRAVEL with COBBLES			Depth	0.90 m
Specimen Ref.		Specimen Depth	m	Sample Type	B
Test Method	BS1377:Part 4:1990, clause 3.6, 4.5kg rammer			Keylab ID	EAT_2021101235
				Compaction Test Reference/No.	



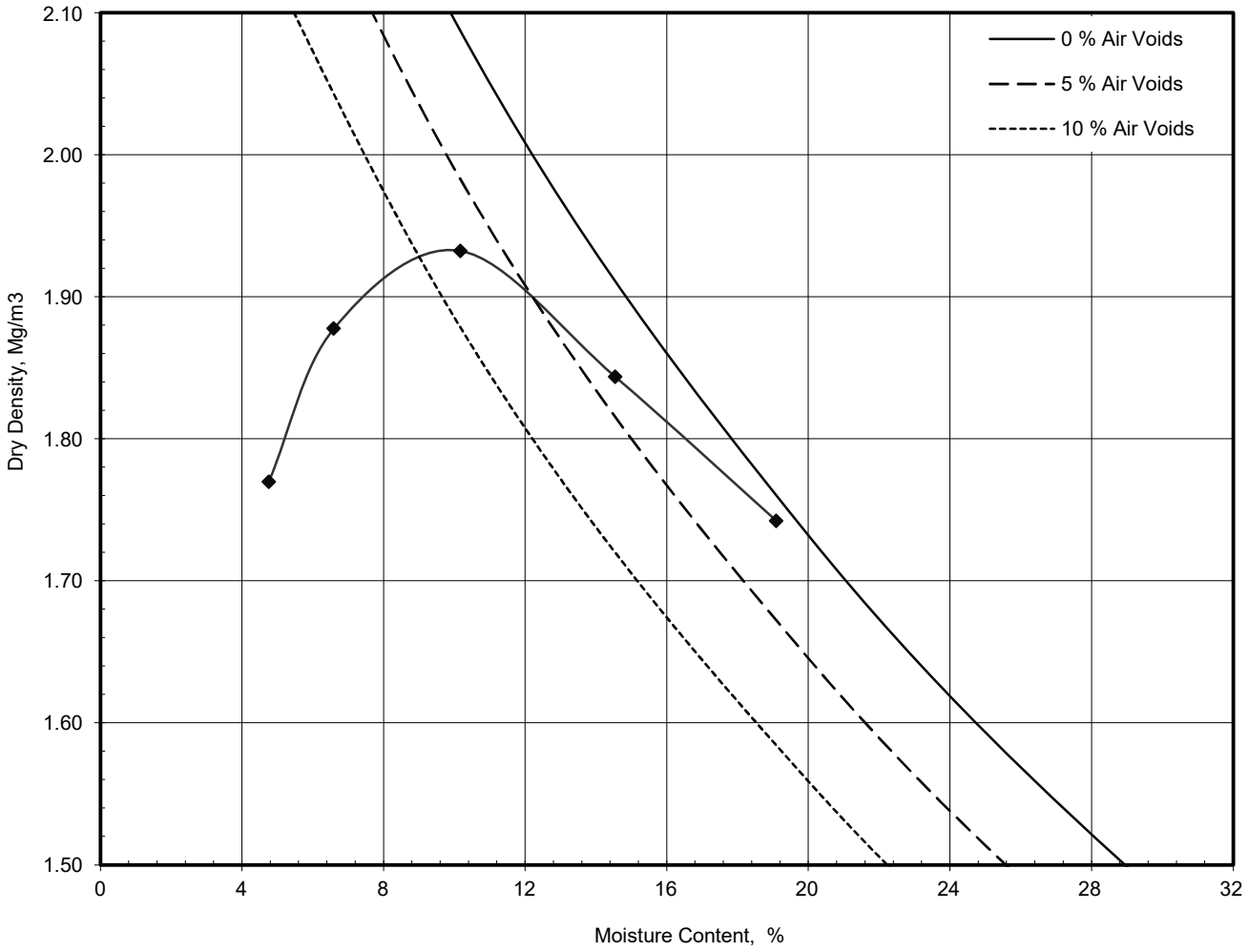
Preparation		Material used was air dried
Mould Type		CBR
Samples Used		Single sample tested
Material Retained on 37.5 mm Sieve	%	29
Material Retained on 20.0 mm Sieve	%	16
Particle Density - Assumed	Mg/m³	2.65

Maximum Dry Density	Mg/m³	**1.96**
Optimum Moisture Content	%	**11**

Comments	Date	Checked	Approved	
Sample Tested Deviating from BS:1377-4:1990 As Instructed.	22/10/2021 11:04	N. O'Brien	N. Hodson	UKAS Accredited Laboratory No. 20632

EXPLORATION & TESTING ASSOCIATES	Dry Density / Moisture Content Relationship Heavy Compaction	Job Ref	C10172
		Borehole / Pit No	TP151

Site Name	Oxfordshire			Sample No	1
Soil Description	Brown, Clayey, Very Sandy GRAVEL with COBBLES			Depth	0.80 m
Specimen Ref.		Specimen Depth	m	Sample Type	B
Test Method	BS1377:Part 4:1990, clause 3.6, 4.5kg rammer			Keylab ID	EAT_2021101238
				Compaction Test Reference/No.	



Preparation		Material used was air dried
Mould Type		CBR
Samples Used		Single sample tested
Material Retained on 37.5 mm Sieve	%	28
Material Retained on 20.0 mm Sieve	%	17
Particle Density - Assumed	Mg/m³	2.65

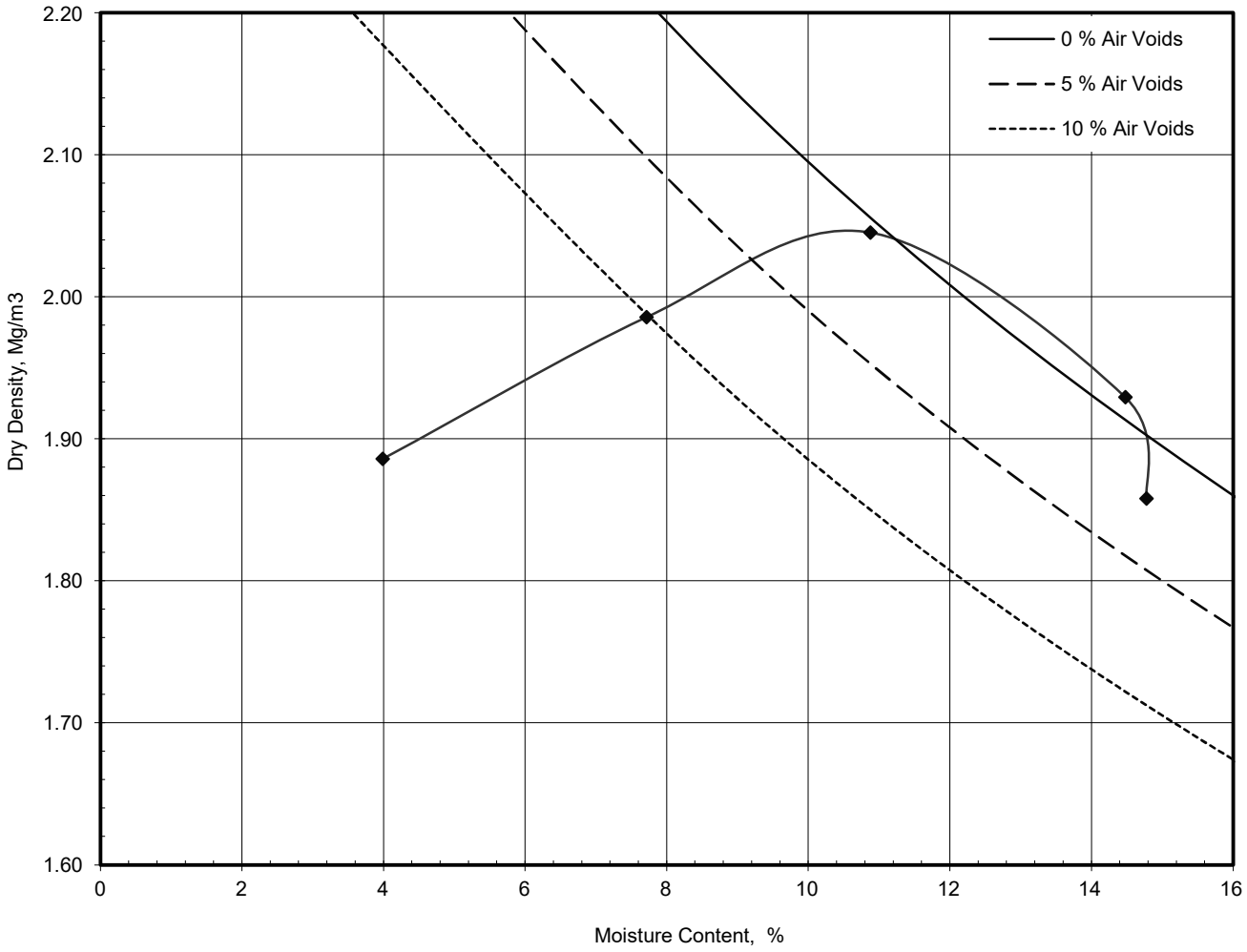
Maximum Dry Density	Mg/m³	**1.93**
Optimum Moisture Content	%	**10**

Comments	Date	Checked	Approved	
Sample Tested Deviating from BS:1377-4:1990 As Instructed.	22/10/2021 10:54	N. O'Brien	N. Hodson	UKAS Accredited Laboratory No. 20632

EXPLORATION & TESTING ASSOCIATES	**Dry Density / Moisture Content Relationship Heavy Compaction**	Job Ref	**C10172**
		Borehole / Pit No	TP155

Site Name	**Oxfordshire**			Sample No	1
Soil Description	Brown, Clayey, Very Sandy GRAVEL with COBBLES			Depth	0.80 m
Specimen Ref.		Specimen Depth	m	Sample Type	B
Test Method	BS1377:Part 4:1990, clause 3.6, 4.5kg rammer			Keylab ID	EAT_2021101242

Compaction Test Reference/No.



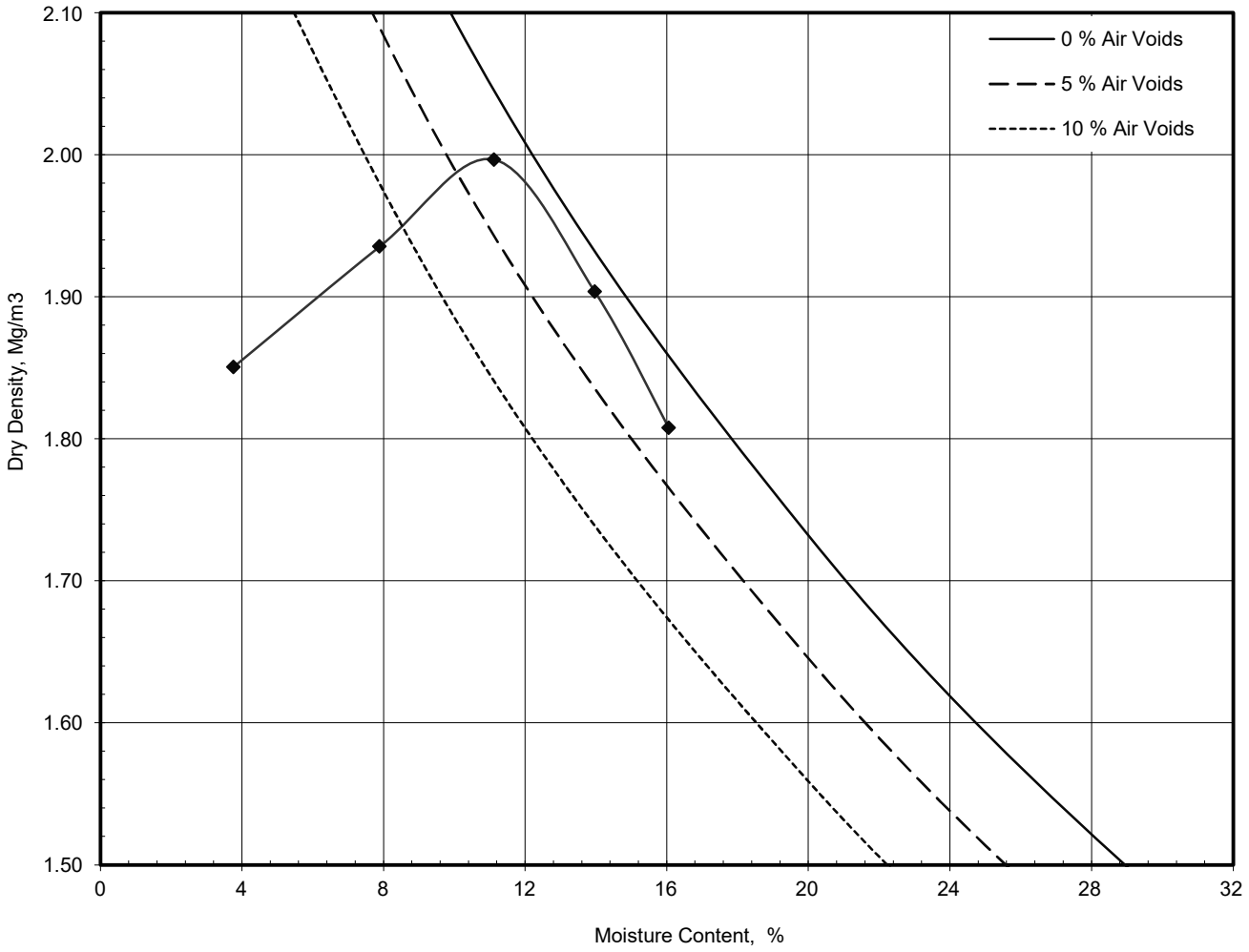
Preparation		Material used was air dried
Mould Type		CBR
Samples Used		Single sample tested
Material Retained on 37.5 mm Sieve	%	47
Material Retained on 20.0 mm Sieve	%	17
Particle Density - Assumed	Mg/m³	2.65

Maximum Dry Density	Mg/m³	**2.05**
Optimum Moisture Content	%	**11**

Comments	Date	Checked	Approved	
Sample Tested Deviating from BS:1377-4:1990 As Instructed.	22/10/2021 10:53	N. O'Brien	N. Hodson	UKAS Accredited Laboratory No. 20632

EXPLORATION & TESTING ASSOCIATES	Dry Density / Moisture Content Relationship Heavy Compaction	Job Ref	C10172
		Borehole / Pit No	TP157

Site Name	Oxfordshire			Sample No	1
Soil Description	Brown, Very Clayey, Sandy GRAVEL with COBBLES			Depth	1.00 m
Specimen Ref.		Specimen Depth	m	Sample Type	B
Test Method	BS1377:Part 4:1990, clause 3.6, 4.5kg rammer			Keylab ID	EAT_2021101243
				Compaction Test Reference/No.	



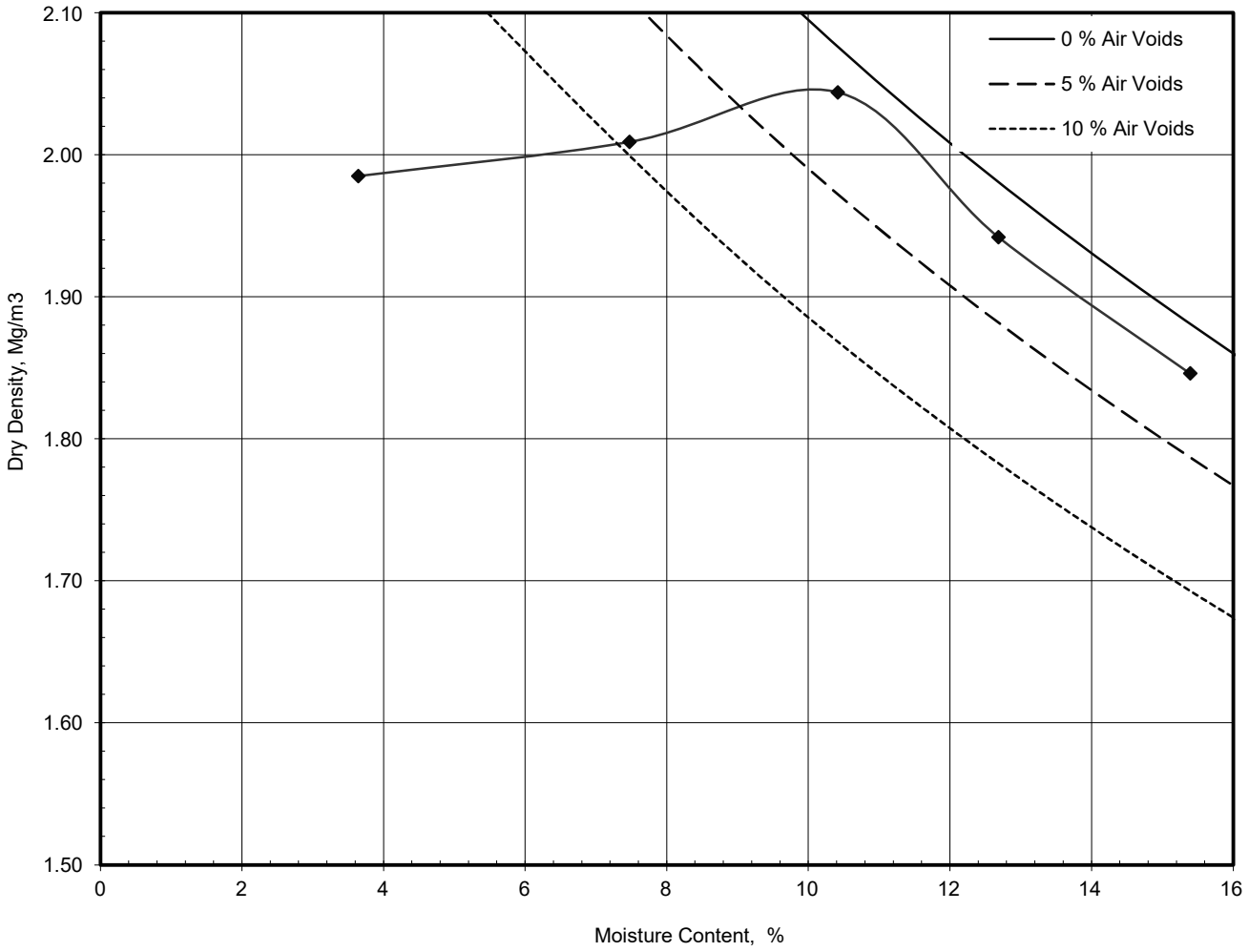
Preparation		Material used was air dried
Mould Type		CBR
Samples Used		Single sample tested
Material Retained on 37.5 mm Sieve	%	35
Material Retained on 20.0 mm Sieve	%	18
Particle Density - Assumed	Mg/m³	2.65

Maximum Dry Density	Mg/m³	**2.00**
Optimum Moisture Content	%	**11**

Comments	Date	Checked	Approved	
Sample Tested Deviating from BS:1377-4:1990 As Instructed.	22/10/2021 11:05	N. O'Brien	N. Hodson	UKAS Accredited Laboratory No. 20632

EXPLORATION & TESTING ASSOCIATES	**Dry Density / Moisture Content Relationship Heavy Compaction**	Job Ref	**C10172**
		Borehole / Pit No	TP163

Site Name	**Oxfordshire**			Sample No	1
Soil Description	Brown, Clayey, Sandy GRAVEL with COBBLES			Depth	0.70 m
Specimen Ref.		Specimen Depth	m	Sample Type	B
Test Method	BS1377:Part 4:1990, clause 3.6, 4.5kg rammer			Keylab ID	EAT_2021101245
				Compaction Test Reference/No.	



Preparation		Material used was air dried
Mould Type		CBR
Samples Used		Single sample tested
Material Retained on 37.5 mm Sieve	%	54
Material Retained on 20.0 mm Sieve	%	18
Particle Density - Assumed	Mg/m³	2.65

Maximum Dry Density	Mg/m³	**2.04**
Optimum Moisture Content	%	**10**

Comments	Date	Checked	Approved	
Sample Tested Deviating from BS:1377-4:1990 As Instructed.	22/10/2021 10:51	N. O'Brien	N. Hodson	UKAS Accredited Laboratory No. 20632

EXPLORATION
& TESTING ASSOCIATES

APPENDIX 6: CHEMICAL LABORATORY TESTING

Results

Exploration & Testing Associates Limited
3 Siskin Drive
Middlemarch Business Park
Coventry
CV3 4FJ

e: results@explorationtesting.uk

i2 Analytical Ltd.
7 Woodshots Meadow,
Croxley Green
Business Park,
Watford,
Herts,
WD18 8YS

t: 01923 225404
f: 01923 237404
e: reception@i2analytical.com

Analytical Report Number : 21-12246

Project / Site name:	Oxfordshire SRFI	**Samples received on:**	17/09/2021
Your job number:	C10172	**Samples instructed on/ Analysis started on:**	24/09/2021
Your order number:	PO-1552	**Analysis completed by:**	01/10/2021
Report Issue Number:	1	**Report issued on:**	01/10/2021
Samples Analysed:	9 leachate samples - 25 soil samples		

Signed:

Zina Abdul Razzak
Senior Quality Specialist
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting

Excel copies of reports are only valid when accompanied by this PDF certificate.

Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.

Analytical Report Number: 21-12246
Project / Site name: Oxfordshire SRFI
Your Order No: PO-1552

Lab Sample Number				2023016	2023017	2023018	2023019	2023020
Sample Reference				DS102	DS112	DS122	DS117	DS123
Sample Number				1	1	1	1	2
Depth (m)				0.20	0.30	0.20	0.25	0.70
Date Sampled				14/09/2021	14/09/2021	15/09/2021	16/09/2021	16/09/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	14	11	11	10	13
Total mass of sample received	kg	0.001	NONE	1.2	1.2	1.2	1.2	1.2

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	8.3	8.6	8.3	8.2	8.1
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Complex Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Free Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Water Soluble SO4 16hr extraction (2:1 Leachate Equivale	g/l	0.00125	MCERTS	0.022	0.0074	0.0066	0.0095	0.012
Total Sulphur	mg/kg	50	MCERTS	630	430	410	540	120
Organic Matter (automated)	%	0.1	MCERTS	5.3	2.6	2.7	3.5	0.7

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Chrysene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	< 0.80	< 0.80	< 0.80	< 0.80	< 0.80

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	19	21	17	17	20
Barium (aqua regia extractable)	mg/kg	1	MCERTS	61	64	67	68	110
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.96	1.1	1.0	0.99	1.8
Boron (water soluble)	mg/kg	0.2	MCERTS	0.5	1.6	1.3	0.3	0.5
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	28	31	29	27	48
Copper (aqua regia extractable)	mg/kg	1	MCERTS	20	18	15	15	14
Lead (aqua regia extractable)	mg/kg	1	MCERTS	26	22	17	18	17
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	22	24	22	21	32
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	60	71	49	47	81
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	67	60	56	61	82

Analytical Report Number: 21-12246
Project / Site name: Oxfordshire SRFI
Your Order No: PO-1552

Lab Sample Number				2023016	2023017	2023018	2023019	2023020
Sample Reference				DS102	DS112	DS122	DS117	DS123
Sample Number				1	1	1	1	2
Depth (m)				0.20	0.30	0.20	0.25	0.70
Date Sampled				14/09/2021	14/09/2021	15/09/2021	16/09/2021	16/09/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Petroleum Hydrocarbons								
TPH C10 - C40	mg/kg	10	MCERTS	23	< 10	< 10	< 10	< 10
TPH2 (C6 - C10)	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
VOCs								
Chloromethane	µg/kg	1	ISO 17025	-	-	-	-	-
Chloroethane	µg/kg	1	NONE	-	-	-	-	-
Bromomethane	µg/kg	1	ISO 17025	-	-	-	-	-
Vinyl Chloride	µg/kg	1	NONE	-	-	-	-	-
Trichlorofluoromethane	µg/kg	1	NONE	-	-	-	-	-
1,1-Dichloroethene	µg/kg	1	NONE	-	-	-	-	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	ISO 17025	-	-	-	-	-
Cis-1,2-dichloroethene	µg/kg	1	MCERTS	-	-	-	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	-	-	-	-
1,1-Dichloroethane	µg/kg	1	MCERTS	-	-	-	-	-
2,2-Dichloropropane	µg/kg	1	MCERTS	-	-	-	-	-
Trichloromethane	µg/kg	1	MCERTS	-	-	-	-	-
1,1,1-Trichloroethane	µg/kg	1	MCERTS	-	-	-	-	-
1,2-Dichloroethane	µg/kg	1	MCERTS	-	-	-	-	-
1,1-Dichloropropene	µg/kg	1	MCERTS	-	-	-	-	-
Trans-1,2-dichloroethene	µg/kg	1	NONE	-	-	-	-	-
Benzene	µg/kg	1	MCERTS	-	-	-	-	-
Tetrachloromethane	µg/kg	1	MCERTS	-	-	-	-	-
1,2-Dichloropropane	µg/kg	1	MCERTS	-	-	-	-	-
Trichloroethene	µg/kg	1	MCERTS	-	-	-	-	-
Dibromomethane	µg/kg	1	MCERTS	-	-	-	-	-
Bromodichloromethane	µg/kg	1	MCERTS	-	-	-	-	-
Cis-1,3-dichloropropene	µg/kg	1	ISO 17025	-	-	-	-	-
Trans-1,3-dichloropropene	µg/kg	1	ISO 17025	-	-	-	-	-
Toluene	µg/kg	1	MCERTS	-	-	-	-	-
1,1,2-Trichloroethane	µg/kg	1	MCERTS	-	-	-	-	-
1,3-Dichloropropane	µg/kg	1	ISO 17025	-	-	-	-	-
Dibromochloromethane	µg/kg	1	ISO 17025	-	-	-	-	-
Tetrachloroethene	µg/kg	1	NONE	-	-	-	-	-
1,2-Dibromoethane	µg/kg	1	ISO 17025	-	-	-	-	-
Chlorobenzene	µg/kg	1	MCERTS	-	-	-	-	-
1,1,1,2-Tetrachloroethane	µg/kg	1	MCERTS	-	-	-	-	-
Ethylbenzene	µg/kg	1	MCERTS	-	-	-	-	-
p & m-Xylene	µg/kg	1	MCERTS	-	-	-	-	-
Styrene	µg/kg	1	MCERTS	-	-	-	-	-
Tribromomethane	µg/kg	1	NONE	-	-	-	-	-
o-Xylene	µg/kg	1	MCERTS	-	-	-	-	-
1,1,2,2-Tetrachloroethane	µg/kg	1	MCERTS	-	-	-	-	-
Isopropylbenzene	µg/kg	1	MCERTS	-	-	-	-	-
Bromobenzene	µg/kg	1	MCERTS	-	-	-	-	-
n-Propylbenzene	µg/kg	1	ISO 17025	-	-	-	-	-
2-Chlorotoluene	µg/kg	1	MCERTS	-	-	-	-	-
4-Chlorotoluene	µg/kg	1	MCERTS	-	-	-	-	-
1,3,5-Trimethylbenzene	µg/kg	1	ISO 17025	-	-	-	-	-
tert-Butylbenzene	µg/kg	1	MCERTS	-	-	-	-	-
1,2,4-Trimethylbenzene	µg/kg	1	ISO 17025	-	-	-	-	-
sec-Butylbenzene	µg/kg	1	MCERTS	-	-	-	-	-
1,3-Dichlorobenzene	µg/kg	1	ISO 17025	-	-	-	-	-
p-Isopropyltoluene	µg/kg	1	ISO 17025	-	-	-	-	-
1,2-Dichlorobenzene	µg/kg	1	MCERTS	-	-	-	-	-

Analytical Report Number: 21-12246
Project / Site name: Oxfordshire SRFI
Your Order No: PO-1552

Lab Sample Number				2023016	2023017	2023018	2023019	2023020
Sample Reference				DS102	DS112	DS122	DS117	DS123
Sample Number				1	1	1	1	2
Depth (m)				0.20	0.30	0.20	0.25	0.70
Date Sampled				14/09/2021	14/09/2021	15/09/2021	16/09/2021	16/09/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
1,4-Dichlorobenzene	µg/kg	1	MCERTS	-	-	-	-	-
Butylbenzene	µg/kg	1	MCERTS	-	-	-	-	-
1,2-Dibromo-3-chloropropane	µg/kg	1	ISO 17025	-	-	-	-	-
1,2,4-Trichlorobenzene	µg/kg	1	MCERTS	-	-	-	-	-
Hexachlorobutadiene	µg/kg	1	MCERTS	-	-	-	-	-
1,2,3-Trichlorobenzene	µg/kg	1	ISO 17025	-	-	-	-	-

Analytical Report Number: 21-12246
Project / Site name: Oxfordshire SRFI
Your Order No: PO-1552

Lab Sample Number				2023016	2023017	2023018	2023019	2023020
Sample Reference				DS102	DS112	DS122	DS117	DS123
Sample Number				1	1	1	1	2
Depth (m)				0.20	0.30	0.20	0.25	0.70
Date Sampled				14/09/2021	14/09/2021	15/09/2021	16/09/2021	16/09/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
SVOCs								
Aniline	mg/kg	0.1	NONE	-	-	-	-	-
Phenol	mg/kg	0.2	ISO 17025	-	-	-	-	-
2-Chlorophenol	mg/kg	0.1	MCERTS	-	-	-	-	-
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	-	-	-	-	-
1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	-	-	-	-	-
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	-	-	-	-	-
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	-	-	-	-	-
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	-	-	-	-	-
2-Methylphenol	mg/kg	0.3	MCERTS	-	-	-	-	-
Hexachloroethane	mg/kg	0.05	MCERTS	-	-	-	-	-
Nitrobenzene	mg/kg	0.3	MCERTS	-	-	-	-	-
4-Methylphenol	mg/kg	0.2	NONE	-	-	-	-	-
Isophorone	mg/kg	0.2	MCERTS	-	-	-	-	-
2-Nitrophenol	mg/kg	0.3	MCERTS	-	-	-	-	-
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	-	-	-	-	-
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	-	-	-	-	-
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	-	-	-	-	-
Naphthalene	mg/kg	0.05	MCERTS	-	-	-	-	-
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	-	-	-	-	-
4-Chloroaniline	mg/kg	0.1	NONE	-	-	-	-	-
Hexachlorobutadiene	mg/kg	0.1	MCERTS	-	-	-	-	-
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	-	-	-	-	-
2,4,6-Trichlorophenol	mg/kg	0.1	MCERTS	-	-	-	-	-
2,4,5-Trichlorophenol	mg/kg	0.2	MCERTS	-	-	-	-	-
2-Methylnaphthalene	mg/kg	0.1	NONE	-	-	-	-	-
2-Chloronaphthalene	mg/kg	0.1	MCERTS	-	-	-	-	-
Dimethylphthalate	mg/kg	0.1	MCERTS	-	-	-	-	-
2,6-Dinitrotoluene	mg/kg	0.1	MCERTS	-	-	-	-	-
Acenaphthylene	mg/kg	0.05	MCERTS	-	-	-	-	-
Acenaphthene	mg/kg	0.05	MCERTS	-	-	-	-	-
2,4-Dinitrotoluene	mg/kg	0.2	MCERTS	-	-	-	-	-
Dibenzofuran	mg/kg	0.2	MCERTS	-	-	-	-	-
4-Chlorophenyl phenyl ether	mg/kg	0.3	ISO 17025	-	-	-	-	-
Diethyl phthalate	mg/kg	0.2	MCERTS	-	-	-	-	-
4-Nitroaniline	mg/kg	0.2	MCERTS	-	-	-	-	-
Fluorene	mg/kg	0.05	MCERTS	-	-	-	-	-
Azobenzene	mg/kg	0.3	MCERTS	-	-	-	-	-
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	-	-	-	-	-
Hexachlorobenzene	mg/kg	0.3	MCERTS	-	-	-	-	-
Phenanthrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Anthracene	mg/kg	0.05	MCERTS	-	-	-	-	-
Carbazole	mg/kg	0.3	MCERTS	-	-	-	-	-
Dibutyl phthalate	mg/kg	0.2	MCERTS	-	-	-	-	-
Anthraquinone	mg/kg	0.3	MCERTS	-	-	-	-	-
Fluoranthene	mg/kg	0.05	MCERTS	-	-	-	-	-
Pyrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Butyl benzyl phthalate	mg/kg	0.3	ISO 17025	-	-	-	-	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	-	-	-	-
Chrysene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	-	-	-	-

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Lab Sample Number				2023016	2023017	2023018	2023019	2023020
Sample Reference				DS102	DS112	DS122	DS117	DS123
Sample Number				1	1	1	1	2
Depth (m)				0.20	0.30	0.20	0.25	0.70
Date Sampled				14/09/2021	14/09/2021	15/09/2021	16/09/2021	16/09/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Pesticide and Herbicide Screen								
GCMS Pesticide Screen		N/A	NONE	-	-	-	-	-

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Lab Sample Number				2023016	2023017	2023018	2023019	2023020
Sample Reference				DS102	DS112	DS122	DS117	DS123
Sample Number				1	1	1	1	2
Depth (m)				0.20	0.30	0.20	0.25	0.70
Date Sampled				14/09/2021	14/09/2021	15/09/2021	16/09/2021	16/09/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Acid Herbicides								
2,3,6-TBA	µg/kg	50	NONE	-	-	-	-	-
2,4,5-T	µg/kg	10	NONE	-	-	-	-	-
2,4,5-TP (Fenoprop)	µg/kg	10	NONE	-	-	-	-	-
2,4-D	µg/kg	10	NONE	-	-	-	-	-
2,4-DB	µg/kg	10	NONE	-	-	-	-	-
4-CPA	µg/kg	20	NONE	-	-	-	-	-
Bromacil	µg/kg	10	NONE	-	-	-	-	-
Bromoxynil	µg/kg	10	NONE	-	-	-	-	-
Clopyralid	µg/kg	100	NONE	-	-	-	-	-
Dicamba	µg/kg	20	NONE	-	-	-	-	-
Diclofop	µg/kg	10	NONE	-	-	-	-	-
Dichlorprop	µg/kg	10	NONE	-	-	-	-	-
Dinoseb	µg/kg	10	NONE	-	-	-	-	-
Flamprop	µg/kg	50	NONE	-	-	-	-	-
Flamprop-Isopropyl	µg/kg	10	NONE	-	-	-	-	-
Ioxynil	µg/kg	10	NONE	-	-	-	-	-
MCPA	µg/kg	10	NONE	-	-	-	-	-
MCPB	µg/kg	20	NONE	-	-	-	-	-
MCPP (Mecoprop)	µg/kg	10	NONE	-	-	-	-	-
Picloram	µg/kg	50	NONE	-	-	-	-	-

U/S = Unsuitable Sample I/S = Insufficient Sample

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Lab Sample Number				2023021	2023022	2023023	2023024	2023025
Sample Reference				DS124	DS120	DS130	DS126	DS116A
Sample Number				1	1	1	1	1
Depth (m)				0.20	0.20	0.20	0.20	0.25
Date Sampled				16/09/2021	16/09/2021	17/09/2021	17/09/2021	13/09/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	9.0	11	13	14	5.5
Total mass of sample received	kg	0.001	NONE	1.2	1.2	1.2	1.2	1.2

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	8.6	8.3	8.3	8.3	9.6
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Complex Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Free Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Water Soluble SO4 16hr extraction (2:1 Leachate Equivale	g/l	0.00125	MCERTS	0.014	0.0073	0.023	0.017	0.12
Total Sulphur	mg/kg	50	MCERTS	400	550	550	550	580
Organic Matter (automated)	%	0.1	MCERTS	1.6	3.4	3.5	3.8	1.3

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Chrysene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	< 0.80	< 0.80	< 0.80	< 0.80	< 0.80

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	13	20	16	19	11
Barium (aqua regia extractable)	mg/kg	1	MCERTS	45	73	61	78	23
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.66	0.97	0.85	1.1	0.37
Boron (water soluble)	mg/kg	0.2	MCERTS	0.3	0.4	1.3	1.1	0.7
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	18	27	26	31	11
Copper (aqua regia extractable)	mg/kg	1	MCERTS	7.2	16	14	18	7.6
Lead (aqua regia extractable)	mg/kg	1	MCERTS	10	20	17	21	5.3
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	14	21	19	24	10
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	32	52	50	56	26
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	33	62	61	77	43

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Lab Sample Number				2023021	2023022	2023023	2023024	2023025
Sample Reference				DS124	DS120	DS130	DS126	DS116A
Sample Number				1	1	1	1	1
Depth (m)				0.20	0.20	0.20	0.20	0.25
Date Sampled				16/09/2021	16/09/2021	17/09/2021	17/09/2021	13/09/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Petroleum Hydrocarbons								
TPH C10 - C40	mg/kg	10	MCERTS	< 10	< 10	< 10	18	< 10
TPH2 (C6 - C10)	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
VOCs								
Chloromethane	µg/kg	1	ISO 17025	-	-	-	-	-
Chloroethane	µg/kg	1	NONE	-	-	-	-	-
Bromomethane	µg/kg	1	ISO 17025	-	-	-	-	-
Vinyl Chloride	µg/kg	1	NONE	-	-	-	-	-
Trichlorofluoromethane	µg/kg	1	NONE	-	-	-	-	-
1,1-Dichloroethene	µg/kg	1	NONE	-	-	-	-	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	ISO 17025	-	-	-	-	-
Cis-1,2-dichloroethene	µg/kg	1	MCERTS	-	-	-	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	-	-	-	-
1,1-Dichloroethane	µg/kg	1	MCERTS	-	-	-	-	-
2,2-Dichloropropane	µg/kg	1	MCERTS	-	-	-	-	-
Trichloromethane	µg/kg	1	MCERTS	-	-	-	-	-
1,1,1-Trichloroethane	µg/kg	1	MCERTS	-	-	-	-	-
1,2-Dichloroethane	µg/kg	1	MCERTS	-	-	-	-	-
1,1-Dichloropropene	µg/kg	1	MCERTS	-	-	-	-	-
Trans-1,2-dichloroethene	µg/kg	1	NONE	-	-	-	-	-
Benzene	µg/kg	1	MCERTS	-	-	-	-	-
Tetrachloromethane	µg/kg	1	MCERTS	-	-	-	-	-
1,2-Dichloropropane	µg/kg	1	MCERTS	-	-	-	-	-
Trichloroethene	µg/kg	1	MCERTS	-	-	-	-	-
Dibromomethane	µg/kg	1	MCERTS	-	-	-	-	-
Bromodichloromethane	µg/kg	1	MCERTS	-	-	-	-	-
Cis-1,3-dichloropropene	µg/kg	1	ISO 17025	-	-	-	-	-
Trans-1,3-dichloropropene	µg/kg	1	ISO 17025	-	-	-	-	-
Toluene	µg/kg	1	MCERTS	-	-	-	-	-
1,1,2-Trichloroethane	µg/kg	1	MCERTS	-	-	-	-	-
1,3-Dichloropropane	µg/kg	1	ISO 17025	-	-	-	-	-
Dibromochloromethane	µg/kg	1	ISO 17025	-	-	-	-	-
Tetrachloroethene	µg/kg	1	NONE	-	-	-	-	-
1,2-Dibromoethane	µg/kg	1	ISO 17025	-	-	-	-	-
Chlorobenzene	µg/kg	1	MCERTS	-	-	-	-	-
1,1,1,2-Tetrachloroethane	µg/kg	1	MCERTS	-	-	-	-	-
Ethylbenzene	µg/kg	1	MCERTS	-	-	-	-	-
p & m-Xylene	µg/kg	1	MCERTS	-	-	-	-	-
Styrene	µg/kg	1	MCERTS	-	-	-	-	-
Tribromomethane	µg/kg	1	NONE	-	-	-	-	-
o-Xylene	µg/kg	1	MCERTS	-	-	-	-	-
1,1,2,2-Tetrachloroethane	µg/kg	1	MCERTS	-	-	-	-	-
Isopropylbenzene	µg/kg	1	MCERTS	-	-	-	-	-
Bromobenzene	µg/kg	1	MCERTS	-	-	-	-	-
n-Propylbenzene	µg/kg	1	ISO 17025	-	-	-	-	-
2-Chlorotoluene	µg/kg	1	MCERTS	-	-	-	-	-
4-Chlorotoluene	µg/kg	1	MCERTS	-	-	-	-	-
1,3,5-Trimethylbenzene	µg/kg	1	ISO 17025	-	-	-	-	-
tert-Butylbenzene	µg/kg	1	MCERTS	-	-	-	-	-
1,2,4-Trimethylbenzene	µg/kg	1	ISO 17025	-	-	-	-	-
sec-Butylbenzene	µg/kg	1	MCERTS	-	-	-	-	-
1,3-Dichlorobenzene	µg/kg	1	ISO 17025	-	-	-	-	-
p-Isopropyltoluene	µg/kg	1	ISO 17025	-	-	-	-	-
1,2-Dichlorobenzene	µg/kg	1	MCERTS	-	-	-	-	-

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Lab Sample Number				2023021	2023022	2023023	2023024	2023025
Sample Reference				DS124	DS120	DS130	DS126	DS116A
Sample Number				1	1	1	1	1
Depth (m)				0.20	0.20	0.20	0.20	0.25
Date Sampled				16/09/2021	16/09/2021	17/09/2021	17/09/2021	13/09/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
1,4-Dichlorobenzene	µg/kg	1	MCERTS	-	-	-	-	-
Butylbenzene	µg/kg	1	MCERTS	-	-	-	-	-
1,2-Dibromo-3-chloropropane	µg/kg	1	ISO 17025	-	-	-	-	-
1,2,4-Trichlorobenzene	µg/kg	1	MCERTS	-	-	-	-	-
Hexachlorobutadiene	µg/kg	1	MCERTS	-	-	-	-	-
1,2,3-Trichlorobenzene	µg/kg	1	ISO 17025	-	-	-	-	-

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Lab Sample Number				2023021	2023022	2023023	2023024	2023025
Sample Reference				DS124	DS120	DS130	DS126	DS116A
Sample Number				1	1	1	1	1
Depth (m)				0.20	0.20	0.20	0.20	0.25
Date Sampled				16/09/2021	16/09/2021	17/09/2021	17/09/2021	13/09/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
SVOCs								
Aniline	mg/kg	0.1	NONE	-	-	-	-	-
Phenol	mg/kg	0.2	ISO 17025	-	-	-	-	-
2-Chlorophenol	mg/kg	0.1	MCERTS	-	-	-	-	-
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	-	-	-	-	-
1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	-	-	-	-	-
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	-	-	-	-	-
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	-	-	-	-	-
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	-	-	-	-	-
2-Methylphenol	mg/kg	0.3	MCERTS	-	-	-	-	-
Hexachloroethane	mg/kg	0.05	MCERTS	-	-	-	-	-
Nitrobenzene	mg/kg	0.3	MCERTS	-	-	-	-	-
4-Methylphenol	mg/kg	0.2	NONE	-	-	-	-	-
Isophorone	mg/kg	0.2	MCERTS	-	-	-	-	-
2-Nitrophenol	mg/kg	0.3	MCERTS	-	-	-	-	-
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	-	-	-	-	-
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	-	-	-	-	-
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	-	-	-	-	-
Naphthalene	mg/kg	0.05	MCERTS	-	-	-	-	-
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	-	-	-	-	-
4-Chloroaniline	mg/kg	0.1	NONE	-	-	-	-	-
Hexachlorobutadiene	mg/kg	0.1	MCERTS	-	-	-	-	-
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	-	-	-	-	-
2,4,6-Trichlorophenol	mg/kg	0.1	MCERTS	-	-	-	-	-
2,4,5-Trichlorophenol	mg/kg	0.2	MCERTS	-	-	-	-	-
2-Methylnaphthalene	mg/kg	0.1	NONE	-	-	-	-	-
2-Chloronaphthalene	mg/kg	0.1	MCERTS	-	-	-	-	-
Dimethylphthalate	mg/kg	0.1	MCERTS	-	-	-	-	-
2,6-Dinitrotoluene	mg/kg	0.1	MCERTS	-	-	-	-	-
Acenaphthylene	mg/kg	0.05	MCERTS	-	-	-	-	-
Acenaphthene	mg/kg	0.05	MCERTS	-	-	-	-	-
2,4-Dinitrotoluene	mg/kg	0.2	MCERTS	-	-	-	-	-
Dibenzofuran	mg/kg	0.2	MCERTS	-	-	-	-	-
4-Chlorophenyl phenyl ether	mg/kg	0.3	ISO 17025	-	-	-	-	-
Diethyl phthalate	mg/kg	0.2	MCERTS	-	-	-	-	-
4-Nitroaniline	mg/kg	0.2	MCERTS	-	-	-	-	-
Fluorene	mg/kg	0.05	MCERTS	-	-	-	-	-
Azobenzene	mg/kg	0.3	MCERTS	-	-	-	-	-
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	-	-	-	-	-
Hexachlorobenzene	mg/kg	0.3	MCERTS	-	-	-	-	-
Phenanthrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Anthracene	mg/kg	0.05	MCERTS	-	-	-	-	-
Carbazole	mg/kg	0.3	MCERTS	-	-	-	-	-
Dibutyl phthalate	mg/kg	0.2	MCERTS	-	-	-	-	-
Anthraquinone	mg/kg	0.3	MCERTS	-	-	-	-	-
Fluoranthene	mg/kg	0.05	MCERTS	-	-	-	-	-
Pyrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Butyl benzyl phthalate	mg/kg	0.3	ISO 17025	-	-	-	-	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	-	-	-	-
Chrysene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	-	-	-	-

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Lab Sample Number				2023021	2023022	2023023	2023024	2023025
Sample Reference				DS124	DS120	DS130	DS126	DS116A
Sample Number				1	1	1	1	1
Depth (m)				0.20	0.20	0.20	0.20	0.25
Date Sampled				16/09/2021	16/09/2021	17/09/2021	17/09/2021	13/09/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Pesticide and Herbicide Screen								
GCMS Pesticide Screen		N/A	NONE	None Detected	-	None Detected	-	-

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Lab Sample Number				2023021	2023022	2023023	2023024	2023025
Sample Reference				DS124	DS120	DS130	DS126	DS116A
Sample Number				1	1	1	1	1
Depth (m)				0.20	0.20	0.20	0.20	0.25
Date Sampled				16/09/2021	16/09/2021	17/09/2021	17/09/2021	13/09/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Acid Herbicides								
2,3,6-TBA	µg/kg	50	NONE	< 50	-	< 50	-	-
2,4,5-T	µg/kg	10	NONE	< 10	-	< 10	-	-
2,4,5-TP (Fenoprop)	µg/kg	10	NONE	< 10	-	< 10	-	-
2,4-D	µg/kg	10	NONE	< 10	-	< 10	-	-
2,4-DB	µg/kg	10	NONE	< 10	-	< 10	-	-
4-CPA	µg/kg	20	NONE	< 20	-	< 20	-	-
Bromacil	µg/kg	10	NONE	< 10	-	< 10	-	-
Bromoxynil	µg/kg	10	NONE	< 10	-	< 10	-	-
Clopyralid	µg/kg	100	NONE	< 100	-	< 100	-	-
Dicamba	µg/kg	20	NONE	< 20	-	< 20	-	-
Diclofop	µg/kg	10	NONE	< 10	-	< 10	-	-
Dichlorprop	µg/kg	10	NONE	< 10	-	< 10	-	-
Dinoseb	µg/kg	10	NONE	< 10	-	< 10	-	-
Flamprop	µg/kg	50	NONE	< 50	-	< 50	-	-
Flamprop-Isopropyl	µg/kg	10	NONE	< 10	-	< 10	-	-
Ioxynil	µg/kg	10	NONE	< 10	-	< 10	-	-
MCPA	µg/kg	10	NONE	< 10	-	< 10	-	-
MCPB	µg/kg	20	NONE	< 20	-	< 20	-	-
MCPP (Mecoprop)	µg/kg	10	NONE	< 10	-	< 10	-	-
Picloram	µg/kg	50	NONE	< 50	-	< 50	-	-

U/S = Unsuitable Sample I/S = Insufficient Sample

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Project / Site name: Oxfordshire SRFI
Your Order No: PO-1552

Lab Sample Number				2023026	2023027	2023028	2023029	2023030
Sample Reference				DS110	DS110	DS114	DS114	DS115
Sample Number				1	3	1	2	1
Depth (m)				0.20	1.00	0.15	0.40	0.20
Date Sampled				13/09/2021	13/09/2021	13/09/2021	13/09/2021	13/09/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	19	15	8.3	7.4	8.0
Total mass of sample received	kg	0.001	NONE	1.2	1.2	1.2	1.2	1.2

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	8.2	8.3	8.1	8.3	8.3
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Complex Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Free Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Water Soluble SO4 16hr extraction (2:1 Leachate Equivale	g/l	0.00125	MCERTS	0.073	0.011	0.0094	0.0081	0.0084
Total Sulphur	mg/kg	50	MCERTS	1100	380	580	400	490
Organic Matter (automated)	%	0.1	MCERTS	7.6	0.6	4.0	2.8	3.3

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Chrysene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	< 0.80	< 0.80	< 0.80	< 0.80	< 0.80

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	11	7.1	19	15	15
Barium (aqua regia extractable)	mg/kg	1	MCERTS	35	19	81	71	61
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.64	0.64	1.1	0.99	0.87
Boron (water soluble)	mg/kg	0.2	MCERTS	1.1	0.4	0.3	0.6	0.9
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	18	15	32	27	25
Copper (aqua regia extractable)	mg/kg	1	MCERTS	11	5.0	19	13	11
Lead (aqua regia extractable)	mg/kg	1	MCERTS	19	8.2	27	18	16
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	9.6	13	25	21	19
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	32	24	58	48	42
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	41	19	73	53	46

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Lab Sample Number				2023026	2023027	2023028	2023029	2023030
Sample Reference				DS110	DS110	DS114	DS114	DS115
Sample Number				1	3	1	2	1
Depth (m)				0.20	1.00	0.15	0.40	0.20
Date Sampled				13/09/2021	13/09/2021	13/09/2021	13/09/2021	13/09/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Petroleum Hydrocarbons								
TPH C10 - C40	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	< 10
TPH2 (C6 - C10)	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
VOCs								
Chloromethane	µg/kg	1	ISO 17025	-	-	-	< 1.0	-
Chloroethane	µg/kg	1	NONE	-	-	-	< 1.0	-
Bromomethane	µg/kg	1	ISO 17025	-	-	-	< 1.0	-
Vinyl Chloride	µg/kg	1	NONE	-	-	-	< 1.0	-
Trichlorofluoromethane	µg/kg	1	NONE	-	-	-	< 1.0	-
1,1-Dichloroethene	µg/kg	1	NONE	-	-	-	< 1.0	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	ISO 17025	-	-	-	< 1.0	-
Cis-1,2-dichloroethene	µg/kg	1	MCERTS	-	-	-	< 1.0	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	-	-	< 1.0	-
1,1-Dichloroethane	µg/kg	1	MCERTS	-	-	-	< 1.0	-
2,2-Dichloropropane	µg/kg	1	MCERTS	-	-	-	< 1.0	-
Trichloromethane	µg/kg	1	MCERTS	-	-	-	< 1.0	-
1,1,1-Trichloroethane	µg/kg	1	MCERTS	-	-	-	< 1.0	-
1,2-Dichloroethane	µg/kg	1	MCERTS	-	-	-	< 1.0	-
1,1-Dichloropropene	µg/kg	1	MCERTS	-	-	-	< 1.0	-
Trans-1,2-dichloroethene	µg/kg	1	NONE	-	-	-	< 1.0	-
Benzene	µg/kg	1	MCERTS	-	-	-	< 1.0	-
Tetrachloromethane	µg/kg	1	MCERTS	-	-	-	< 1.0	-
1,2-Dichloropropane	µg/kg	1	MCERTS	-	-	-	< 1.0	-
Trichloroethene	µg/kg	1	MCERTS	-	-	-	< 1.0	-
Dibromomethane	µg/kg	1	MCERTS	-	-	-	< 1.0	-
Bromodichloromethane	µg/kg	1	MCERTS	-	-	-	< 1.0	-
Cis-1,3-dichloropropene	µg/kg	1	ISO 17025	-	-	-	< 1.0	-
Trans-1,3-dichloropropene	µg/kg	1	ISO 17025	-	-	-	< 1.0	-
Toluene	µg/kg	1	MCERTS	-	-	-	< 1.0	-
1,1,2-Trichloroethane	µg/kg	1	MCERTS	-	-	-	< 1.0	-
1,3-Dichloropropane	µg/kg	1	ISO 17025	-	-	-	< 1.0	-
Dibromochloromethane	µg/kg	1	ISO 17025	-	-	-	< 1.0	-
Tetrachloroethene	µg/kg	1	NONE	-	-	-	< 1.0	-
1,2-Dibromoethane	µg/kg	1	ISO 17025	-	-	-	< 1.0	-
Chlorobenzene	µg/kg	1	MCERTS	-	-	-	< 1.0	-
1,1,1,2-Tetrachloroethane	µg/kg	1	MCERTS	-	-	-	< 1.0	-
Ethylbenzene	µg/kg	1	MCERTS	-	-	-	< 1.0	-
p & m-Xylene	µg/kg	1	MCERTS	-	-	-	< 1.0	-
Styrene	µg/kg	1	MCERTS	-	-	-	< 1.0	-
Tribromomethane	µg/kg	1	NONE	-	-	-	< 1.0	-
o-Xylene	µg/kg	1	MCERTS	-	-	-	< 1.0	-
1,1,2,2-Tetrachloroethane	µg/kg	1	MCERTS	-	-	-	< 1.0	-
Isopropylbenzene	µg/kg	1	MCERTS	-	-	-	< 1.0	-
Bromobenzene	µg/kg	1	MCERTS	-	-	-	< 1.0	-
n-Propylbenzene	µg/kg	1	ISO 17025	-	-	-	< 1.0	-
2-Chlorotoluene	µg/kg	1	MCERTS	-	-	-	< 1.0	-
4-Chlorotoluene	µg/kg	1	MCERTS	-	-	-	< 1.0	-
1,3,5-Trimethylbenzene	µg/kg	1	ISO 17025	-	-	-	< 1.0	-
tert-Butylbenzene	µg/kg	1	MCERTS	-	-	-	< 1.0	-
1,2,4-Trimethylbenzene	µg/kg	1	ISO 17025	-	-	-	< 1.0	-
sec-Butylbenzene	µg/kg	1	MCERTS	-	-	-	< 1.0	-
1,3-Dichlorobenzene	µg/kg	1	ISO 17025	-	-	-	< 1.0	-
p-Isopropyltoluene	µg/kg	1	ISO 17025	-	-	-	< 1.0	-
1,2-Dichlorobenzene	µg/kg	1	MCERTS	-	-	-	< 1.0	-

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Lab Sample Number				2023026	2023027	2023028	2023029	2023030
Sample Reference				DS110	DS110	DS114	DS114	DS115
Sample Number				1	3	1	2	1
Depth (m)				0.20	1.00	0.15	0.40	0.20
Date Sampled				13/09/2021	13/09/2021	13/09/2021	13/09/2021	13/09/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
1,4-Dichlorobenzene	µg/kg	1	MCERTS	-	-	-	< 1.0	-
Butylbenzene	µg/kg	1	MCERTS	-	-	-	< 1.0	-
1,2-Dibromo-3-chloropropane	µg/kg	1	ISO 17025	-	-	-	< 1.0	-
1,2,4-Trichlorobenzene	µg/kg	1	MCERTS	-	-	-	< 1.0	-
Hexachlorobutadiene	µg/kg	1	MCERTS	-	-	-	< 1.0	-
1,2,3-Trichlorobenzene	µg/kg	1	ISO 17025	-	-	-	< 1.0	-

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Lab Sample Number				2023026	2023027	2023028	2023029	2023030
Sample Reference				DS110	DS110	DS114	DS114	DS115
Sample Number				1	3	1	2	1
Depth (m)				0.20	1.00	0.15	0.40	0.20
Date Sampled				13/09/2021	13/09/2021	13/09/2021	13/09/2021	13/09/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
SVOCs								
Aniline	mg/kg	0.1	NONE	-	-	-	< 0.1	-
Phenol	mg/kg	0.2	ISO 17025	-	-	-	< 0.2	-
2-Chlorophenol	mg/kg	0.1	MCERTS	-	-	-	< 0.1	-
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	-	-	-	< 0.2	-
1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	-	-	-	< 0.2	-
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	-	-	-	< 0.1	-
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	-	-	-	< 0.2	-
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	-	-	-	< 0.1	-
2-Methylphenol	mg/kg	0.3	MCERTS	-	-	-	< 0.3	-
Hexachloroethane	mg/kg	0.05	MCERTS	-	-	-	< 0.05	-
Nitrobenzene	mg/kg	0.3	MCERTS	-	-	-	< 0.3	-
4-Methylphenol	mg/kg	0.2	NONE	-	-	-	< 0.2	-
Isophorone	mg/kg	0.2	MCERTS	-	-	-	< 0.2	-
2-Nitrophenol	mg/kg	0.3	MCERTS	-	-	-	< 0.3	-
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	-	-	-	< 0.3	-
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	-	-	-	< 0.3	-
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	-	-	-	< 0.3	-
Naphthalene	mg/kg	0.05	MCERTS	-	-	-	< 0.05	-
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	-	-	-	< 0.3	-
4-Chloroaniline	mg/kg	0.1	NONE	-	-	-	< 0.1	-
Hexachlorobutadiene	mg/kg	0.1	MCERTS	-	-	-	< 0.1	-
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	-	-	-	< 0.1	-
2,4,6-Trichlorophenol	mg/kg	0.1	MCERTS	-	-	-	< 0.1	-
2,4,5-Trichlorophenol	mg/kg	0.2	MCERTS	-	-	-	< 0.2	-
2-Methylnaphthalene	mg/kg	0.1	NONE	-	-	-	< 0.1	-
2-Chloronaphthalene	mg/kg	0.1	MCERTS	-	-	-	< 0.1	-
Dimethylphthalate	mg/kg	0.1	MCERTS	-	-	-	< 0.1	-
2,6-Dinitrotoluene	mg/kg	0.1	MCERTS	-	-	-	< 0.1	-
Acenaphthylene	mg/kg	0.05	MCERTS	-	-	-	< 0.05	-
Acenaphthene	mg/kg	0.05	MCERTS	-	-	-	< 0.05	-
2,4-Dinitrotoluene	mg/kg	0.2	MCERTS	-	-	-	< 0.2	-
Dibenzofuran	mg/kg	0.2	MCERTS	-	-	-	< 0.2	-
4-Chlorophenyl phenyl ether	mg/kg	0.3	ISO 17025	-	-	-	< 0.3	-
Diethyl phthalate	mg/kg	0.2	MCERTS	-	-	-	< 0.2	-
4-Nitroaniline	mg/kg	0.2	MCERTS	-	-	-	< 0.2	-
Fluorene	mg/kg	0.05	MCERTS	-	-	-	< 0.05	-
Azobenzene	mg/kg	0.3	MCERTS	-	-	-	< 0.3	-
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	-	-	-	< 0.2	-
Hexachlorobenzene	mg/kg	0.3	MCERTS	-	-	-	< 0.3	-
Phenanthrene	mg/kg	0.05	MCERTS	-	-	-	< 0.05	-
Anthracene	mg/kg	0.05	MCERTS	-	-	-	< 0.05	-
Carbazole	mg/kg	0.3	MCERTS	-	-	-	< 0.3	-
Dibutyl phthalate	mg/kg	0.2	MCERTS	-	-	-	< 0.2	-
Anthraquinone	mg/kg	0.3	MCERTS	-	-	-	< 0.3	-
Fluoranthene	mg/kg	0.05	MCERTS	-	-	-	< 0.05	-
Pyrene	mg/kg	0.05	MCERTS	-	-	-	< 0.05	-
Butyl benzyl phthalate	mg/kg	0.3	ISO 17025	-	-	-	< 0.3	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	-	-	< 0.05	-
Chrysene	mg/kg	0.05	MCERTS	-	-	-	< 0.05	-
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	-	-	-	< 0.05	-
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	-	-	-	< 0.05	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-	-	-	< 0.05	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-	-	-	< 0.05	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-	-	-	< 0.05	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	-	-	< 0.05	-

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Lab Sample Number				2023026	2023027	2023028	2023029	2023030
Sample Reference				DS110	DS110	DS114	DS114	DS115
Sample Number				1	3	1	2	1
Depth (m)				0.20	1.00	0.15	0.40	0.20
Date Sampled				13/09/2021	13/09/2021	13/09/2021	13/09/2021	13/09/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Pesticide and Herbicide Screen								
GCMS Pesticide Screen		N/A	NONE	-	None Detected	-	-	-

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Lab Sample Number				2023026	2023027	2023028	2023029	2023030
Sample Reference				DS110	DS110	DS114	DS114	DS115
Sample Number				1	3	1	2	1
Depth (m)				0.20	1.00	0.15	0.40	0.20
Date Sampled				13/09/2021	13/09/2021	13/09/2021	13/09/2021	13/09/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Acid Herbicides								
2,3,6-TBA	µg/kg	50	NONE	-	< 50	-	-	-
2,4,5-T	µg/kg	10	NONE	-	< 10	-	-	-
2,4,5-TP (Fenoprop)	µg/kg	10	NONE	-	< 10	-	-	-
2,4-D	µg/kg	10	NONE	-	< 10	-	-	-
2,4-DB	µg/kg	10	NONE	-	< 10	-	-	-
4-CPA	µg/kg	20	NONE	-	< 20	-	-	-
Bromacil	µg/kg	10	NONE	-	< 10	-	-	-
Bromoxynil	µg/kg	10	NONE	-	< 10	-	-	-
Clopyralid	µg/kg	100	NONE	-	< 100	-	-	-
Dicamba	µg/kg	20	NONE	-	< 20	-	-	-
Diclofop	µg/kg	10	NONE	-	< 10	-	-	-
Dichlorprop	µg/kg	10	NONE	-	< 10	-	-	-
Dinoseb	µg/kg	10	NONE	-	< 10	-	-	-
Flamprop	µg/kg	50	NONE	-	< 50	-	-	-
Flamprop-Isopropyl	µg/kg	10	NONE	-	< 10	-	-	-
Ioxynil	µg/kg	10	NONE	-	< 10	-	-	-
MCPA	µg/kg	10	NONE	-	< 10	-	-	-
MCPB	µg/kg	20	NONE	-	< 20	-	-	-
MCPP (Mecoprop)	µg/kg	10	NONE	-	< 10	-	-	-
Picloram	µg/kg	50	NONE	-	< 50	-	-	-

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number: 21-12246
Project / Site name: Oxfordshire SRFI
Your Order No: PO-1552

Lab Sample Number				2023031	2023032	2023033	2023034	2023035
Sample Reference				DS115	TP103	TP103	TP106	TP122
Sample Number				2	1	2	1	1
Depth (m)				0.50	0.20	0.50	0.20	0.20
Date Sampled				13/09/2021	15/09/2021	15/09/2021	15/09/2021	15/09/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	8.3	11	5.3	15	6.1
Total mass of sample received	kg	0.001	NONE	1.2	1.2	1.2	1.2	1.2

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	8.5	8.4	8.7	8.4	8.6
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Complex Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Free Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Water Soluble SO4 16hr extraction (2:1 Leachate Equivale	g/l	0.00125	MCERTS	0.0033	0.011	0.0045	0.023	0.013
Total Sulphur	mg/kg	50	MCERTS	370	640	350	1200	660
Organic Matter (automated)	%	0.1	MCERTS	1.5	5.0	1.1	10	3.6

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Chrysene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	< 0.80	< 0.80	< 0.80	< 0.80	< 0.80

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	11	20	16	10	14
Barium (aqua regia extractable)	mg/kg	1	MCERTS	53	57	27	32	58
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.74	0.90	0.56	0.54	0.60
Boron (water soluble)	mg/kg	0.2	MCERTS	0.4	0.4	0.3	0.6	0.7
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	21	26	16	16	16
Copper (aqua regia extractable)	mg/kg	1	MCERTS	8.2	14	7.1	12	6.5
Lead (aqua regia extractable)	mg/kg	1	MCERTS	9.4	22	7.6	18	13
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	19	21	15	8.9	13
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	33	60	48	32	43
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	37	64	26	35	31

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Project / Site name: Oxfordshire SRFI
Your Order No: PO-1552

Lab Sample Number				2023031	2023032	2023033	2023034	2023035
Sample Reference				DS115	TP103	TP103	TP106	TP122
Sample Number				2	1	2	1	1
Depth (m)				0.50	0.20	0.50	0.20	0.20
Date Sampled				13/09/2021	15/09/2021	15/09/2021	15/09/2021	15/09/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Petroleum Hydrocarbons								
TPH C10 - C40	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	< 10
TPH2 (C6 - C10)	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
VOCs								
Chloromethane	µg/kg	1	ISO 17025	-	-	-	-	-
Chloroethane	µg/kg	1	NONE	-	-	-	-	-
Bromomethane	µg/kg	1	ISO 17025	-	-	-	-	-
Vinyl Chloride	µg/kg	1	NONE	-	-	-	-	-
Trichlorofluoromethane	µg/kg	1	NONE	-	-	-	-	-
1,1-Dichloroethene	µg/kg	1	NONE	-	-	-	-	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	ISO 17025	-	-	-	-	-
Cis-1,2-dichloroethene	µg/kg	1	MCERTS	-	-	-	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	-	-	-	-
1,1-Dichloroethane	µg/kg	1	MCERTS	-	-	-	-	-
2,2-Dichloropropane	µg/kg	1	MCERTS	-	-	-	-	-
Trichloromethane	µg/kg	1	MCERTS	-	-	-	-	-
1,1,1-Trichloroethane	µg/kg	1	MCERTS	-	-	-	-	-
1,2-Dichloroethane	µg/kg	1	MCERTS	-	-	-	-	-
1,1-Dichloropropene	µg/kg	1	MCERTS	-	-	-	-	-
Trans-1,2-dichloroethene	µg/kg	1	NONE	-	-	-	-	-
Benzene	µg/kg	1	MCERTS	-	-	-	-	-
Tetrachloromethane	µg/kg	1	MCERTS	-	-	-	-	-
1,2-Dichloropropane	µg/kg	1	MCERTS	-	-	-	-	-
Trichloroethene	µg/kg	1	MCERTS	-	-	-	-	-
Dibromomethane	µg/kg	1	MCERTS	-	-	-	-	-
Bromodichloromethane	µg/kg	1	MCERTS	-	-	-	-	-
Cis-1,3-dichloropropene	µg/kg	1	ISO 17025	-	-	-	-	-
Trans-1,3-dichloropropene	µg/kg	1	ISO 17025	-	-	-	-	-
Toluene	µg/kg	1	MCERTS	-	-	-	-	-
1,1,2-Trichloroethane	µg/kg	1	MCERTS	-	-	-	-	-
1,3-Dichloropropane	µg/kg	1	ISO 17025	-	-	-	-	-
Dibromochloromethane	µg/kg	1	ISO 17025	-	-	-	-	-
Tetrachloroethene	µg/kg	1	NONE	-	-	-	-	-
1,2-Dibromoethane	µg/kg	1	ISO 17025	-	-	-	-	-
Chlorobenzene	µg/kg	1	MCERTS	-	-	-	-	-
1,1,1,2-Tetrachloroethane	µg/kg	1	MCERTS	-	-	-	-	-
Ethylbenzene	µg/kg	1	MCERTS	-	-	-	-	-
p & m-Xylene	µg/kg	1	MCERTS	-	-	-	-	-
Styrene	µg/kg	1	MCERTS	-	-	-	-	-
Tribromomethane	µg/kg	1	NONE	-	-	-	-	-
o-Xylene	µg/kg	1	MCERTS	-	-	-	-	-
1,1,2,2-Tetrachloroethane	µg/kg	1	MCERTS	-	-	-	-	-
Isopropylbenzene	µg/kg	1	MCERTS	-	-	-	-	-
Bromobenzene	µg/kg	1	MCERTS	-	-	-	-	-
n-Propylbenzene	µg/kg	1	ISO 17025	-	-	-	-	-
2-Chlorotoluene	µg/kg	1	MCERTS	-	-	-	-	-
4-Chlorotoluene	µg/kg	1	MCERTS	-	-	-	-	-
1,3,5-Trimethylbenzene	µg/kg	1	ISO 17025	-	-	-	-	-
tert-Butylbenzene	µg/kg	1	MCERTS	-	-	-	-	-
1,2,4-Trimethylbenzene	µg/kg	1	ISO 17025	-	-	-	-	-
sec-Butylbenzene	µg/kg	1	MCERTS	-	-	-	-	-
1,3-Dichlorobenzene	µg/kg	1	ISO 17025	-	-	-	-	-
p-Isopropyltoluene	µg/kg	1	ISO 17025	-	-	-	-	-
1,2-Dichlorobenzene	µg/kg	1	MCERTS	-	-	-	-	-

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Lab Sample Number				2023031	2023032	2023033	2023034	2023035
Sample Reference				DS115	TP103	TP103	TP106	TP122
Sample Number				2	1	2	1	1
Depth (m)				0.50	0.20	0.50	0.20	0.20
Date Sampled				13/09/2021	15/09/2021	15/09/2021	15/09/2021	15/09/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
1,4-Dichlorobenzene	µg/kg	1	MCERTS	-	-	-	-	-
Butylbenzene	µg/kg	1	MCERTS	-	-	-	-	-
1,2-Dibromo-3-chloropropane	µg/kg	1	ISO 17025	-	-	-	-	-
1,2,4-Trichlorobenzene	µg/kg	1	MCERTS	-	-	-	-	-
Hexachlorobutadiene	µg/kg	1	MCERTS	-	-	-	-	-
1,2,3-Trichlorobenzene	µg/kg	1	ISO 17025	-	-	-	-	-

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Lab Sample Number				2023031	2023032	2023033	2023034	2023035
Sample Reference				DS115	TP103	TP103	TP106	TP122
Sample Number				2	1	2	1	1
Depth (m)				0.50	0.20	0.50	0.20	0.20
Date Sampled				13/09/2021	15/09/2021	15/09/2021	15/09/2021	15/09/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
SVOCs								
Aniline	mg/kg	0.1	NONE	-	-	-	-	-
Phenol	mg/kg	0.2	ISO 17025	-	-	-	-	-
2-Chlorophenol	mg/kg	0.1	MCERTS	-	-	-	-	-
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	-	-	-	-	-
1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	-	-	-	-	-
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	-	-	-	-	-
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	-	-	-	-	-
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	-	-	-	-	-
2-Methylphenol	mg/kg	0.3	MCERTS	-	-	-	-	-
Hexachloroethane	mg/kg	0.05	MCERTS	-	-	-	-	-
Nitrobenzene	mg/kg	0.3	MCERTS	-	-	-	-	-
4-Methylphenol	mg/kg	0.2	NONE	-	-	-	-	-
Isophorone	mg/kg	0.2	MCERTS	-	-	-	-	-
2-Nitrophenol	mg/kg	0.3	MCERTS	-	-	-	-	-
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	-	-	-	-	-
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	-	-	-	-	-
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	-	-	-	-	-
Naphthalene	mg/kg	0.05	MCERTS	-	-	-	-	-
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	-	-	-	-	-
4-Chloroaniline	mg/kg	0.1	NONE	-	-	-	-	-
Hexachlorobutadiene	mg/kg	0.1	MCERTS	-	-	-	-	-
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	-	-	-	-	-
2,4,6-Trichlorophenol	mg/kg	0.1	MCERTS	-	-	-	-	-
2,4,5-Trichlorophenol	mg/kg	0.2	MCERTS	-	-	-	-	-
2-Methylnaphthalene	mg/kg	0.1	NONE	-	-	-	-	-
2-Chloronaphthalene	mg/kg	0.1	MCERTS	-	-	-	-	-
Dimethylphthalate	mg/kg	0.1	MCERTS	-	-	-	-	-
2,6-Dinitrotoluene	mg/kg	0.1	MCERTS	-	-	-	-	-
Acenaphthylene	mg/kg	0.05	MCERTS	-	-	-	-	-
Acenaphthene	mg/kg	0.05	MCERTS	-	-	-	-	-
2,4-Dinitrotoluene	mg/kg	0.2	MCERTS	-	-	-	-	-
Dibenzofuran	mg/kg	0.2	MCERTS	-	-	-	-	-
4-Chlorophenyl phenyl ether	mg/kg	0.3	ISO 17025	-	-	-	-	-
Diethyl phthalate	mg/kg	0.2	MCERTS	-	-	-	-	-
4-Nitroaniline	mg/kg	0.2	MCERTS	-	-	-	-	-
Fluorene	mg/kg	0.05	MCERTS	-	-	-	-	-
Azobenzene	mg/kg	0.3	MCERTS	-	-	-	-	-
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	-	-	-	-	-
Hexachlorobenzene	mg/kg	0.3	MCERTS	-	-	-	-	-
Phenanthrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Anthracene	mg/kg	0.05	MCERTS	-	-	-	-	-
Carbazole	mg/kg	0.3	MCERTS	-	-	-	-	-
Dibutyl phthalate	mg/kg	0.2	MCERTS	-	-	-	-	-
Anthraquinone	mg/kg	0.3	MCERTS	-	-	-	-	-
Fluoranthene	mg/kg	0.05	MCERTS	-	-	-	-	-
Pyrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Butyl benzyl phthalate	mg/kg	0.3	ISO 17025	-	-	-	-	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	-	-	-	-
Chrysene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	-	-	-	-

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Lab Sample Number				2023031	2023032	2023033	2023034	2023035
Sample Reference				DS115	TP103	TP103	TP106	TP122
Sample Number				2	1	2	1	1
Depth (m)				0.50	0.20	0.50	0.20	0.20
Date Sampled				13/09/2021	15/09/2021	15/09/2021	15/09/2021	15/09/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Pesticide and Herbicide Screen								
GCMS Pesticide Screen		N/A	NONE	-	None Detected	-	None Detected	None Detected

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Lab Sample Number				2023031	2023032	2023033	2023034	2023035
Sample Reference				DS115	TP103	TP103	TP106	TP122
Sample Number				2	1	2	1	1
Depth (m)				0.50	0.20	0.50	0.20	0.20
Date Sampled				13/09/2021	15/09/2021	15/09/2021	15/09/2021	15/09/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Acid Herbicides								
2,3,6-TBA	µg/kg	50	NONE	-	< 50	-	< 50	< 50
2,4,5-T	µg/kg	10	NONE	-	< 10	-	< 10	< 10
2,4,5-TP (Fenoprop)	µg/kg	10	NONE	-	< 10	-	< 10	< 10
2,4-D	µg/kg	10	NONE	-	< 10	-	< 10	< 10
2,4-DB	µg/kg	10	NONE	-	< 10	-	< 10	< 10
4-CPA	µg/kg	20	NONE	-	< 20	-	< 20	< 20
Bromacil	µg/kg	10	NONE	-	< 10	-	< 10	< 10
Bromoxynil	µg/kg	10	NONE	-	< 10	-	< 10	< 10
Clopyralid	µg/kg	100	NONE	-	< 100	-	< 100	< 100
Dicamba	µg/kg	20	NONE	-	< 20	-	< 20	< 20
Diclofop	µg/kg	10	NONE	-	< 10	-	< 10	< 10
Dichlorprop	µg/kg	10	NONE	-	< 10	-	< 10	< 10
Dinoseb	µg/kg	10	NONE	-	< 10	-	< 10	< 10
Flamprop	µg/kg	50	NONE	-	< 50	-	< 50	< 50
Flamprop-Isopropyl	µg/kg	10	NONE	-	< 10	-	< 10	< 10
Ioxynil	µg/kg	10	NONE	-	< 10	-	< 10	< 10
MCPA	µg/kg	10	NONE	-	< 10	-	< 10	< 10
MCPB	µg/kg	20	NONE	-	< 20	-	< 20	< 20
MCPP (Mecoprop)	µg/kg	10	NONE	-	< 10	-	< 10	< 10
Picloram	µg/kg	50	NONE	-	< 50	-	< 50	< 50

U/S = Unsuitable Sample I/S = Insufficient Sample

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Lab Sample Number				2023036	2023037	2023038	2023039	2023040
Sample Reference				TP142	TP137	TP137	TP146	TP146
Sample Number				1	1	2	None Supplied	None Supplied
Depth (m)				0.20	0.10	0.30	0.20	0.40
Date Sampled				16/09/2021	16/09/2021	16/09/2021	16/09/2021	16/09/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	10	11	10	11	12
Total mass of sample received	kg	0.001	NONE	1.2	1.2	1.2	1.2	1.2

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	8.4	8.4	8.0	8.2	8.4
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Complex Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Free Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Water Soluble SO4 16hr extraction (2:1 Leachate Equivale	g/l	0.00125	MCERTS	0.0081	0.0053	0.0096	0.012	0.0070
Total Sulphur	mg/kg	50	MCERTS	310	270	380	720	420
Organic Matter (automated)	%	0.1	MCERTS	2.5	2.0	2.6	4.7	1.7

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Chrysene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	< 0.80	< 0.80	< 0.80	< 0.80	< 0.80

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	15	24	21	12	12
Barium (aqua regia extractable)	mg/kg	1	MCERTS	62	81	78	39	35
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.94	1.4	1.1	0.64	0.67
Boron (water soluble)	mg/kg	0.2	MCERTS	0.2	0.7	0.5	0.3	0.3
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	27	40	34	19	18
Copper (aqua regia extractable)	mg/kg	1	MCERTS	9.7	16	13	5.1	2.2
Lead (aqua regia extractable)	mg/kg	1	MCERTS	17	16	18	19	17
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	21	32	26	11	11
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	46	91	72	35	34
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	51	76	75	39	35

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Lab Sample Number				2023036	2023037	2023038	2023039	2023040
Sample Reference				TP142	TP137	TP137	TP146	TP146
Sample Number				1	1	2	None Supplied	None Supplied
Depth (m)				0.20	0.10	0.30	0.20	0.40
Date Sampled				16/09/2021	16/09/2021	16/09/2021	16/09/2021	16/09/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Petroleum Hydrocarbons								
TPH C10 - C40	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	< 10
TPH2 (C6 - C10)	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
VOCs								
Chloromethane	µg/kg	1	ISO 17025	-	-	-	-	-
Chloroethane	µg/kg	1	NONE	-	-	-	-	-
Bromomethane	µg/kg	1	ISO 17025	-	-	-	-	-
Vinyl Chloride	µg/kg	1	NONE	-	-	-	-	-
Trichlorofluoromethane	µg/kg	1	NONE	-	-	-	-	-
1,1-Dichloroethene	µg/kg	1	NONE	-	-	-	-	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	ISO 17025	-	-	-	-	-
Cis-1,2-dichloroethene	µg/kg	1	MCERTS	-	-	-	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	-	-	-	-
1,1-Dichloroethane	µg/kg	1	MCERTS	-	-	-	-	-
2,2-Dichloropropane	µg/kg	1	MCERTS	-	-	-	-	-
Trichloromethane	µg/kg	1	MCERTS	-	-	-	-	-
1,1,1-Trichloroethane	µg/kg	1	MCERTS	-	-	-	-	-
1,2-Dichloroethane	µg/kg	1	MCERTS	-	-	-	-	-
1,1-Dichloropropene	µg/kg	1	MCERTS	-	-	-	-	-
Trans-1,2-dichloroethene	µg/kg	1	NONE	-	-	-	-	-
Benzene	µg/kg	1	MCERTS	-	-	-	-	-
Tetrachloromethane	µg/kg	1	MCERTS	-	-	-	-	-
1,2-Dichloropropane	µg/kg	1	MCERTS	-	-	-	-	-
Trichloroethene	µg/kg	1	MCERTS	-	-	-	-	-
Dibromomethane	µg/kg	1	MCERTS	-	-	-	-	-
Bromodichloromethane	µg/kg	1	MCERTS	-	-	-	-	-
Cis-1,3-dichloropropene	µg/kg	1	ISO 17025	-	-	-	-	-
Trans-1,3-dichloropropene	µg/kg	1	ISO 17025	-	-	-	-	-
Toluene	µg/kg	1	MCERTS	-	-	-	-	-
1,1,2-Trichloroethane	µg/kg	1	MCERTS	-	-	-	-	-
1,3-Dichloropropane	µg/kg	1	ISO 17025	-	-	-	-	-
Dibromochloromethane	µg/kg	1	ISO 17025	-	-	-	-	-
Tetrachloroethene	µg/kg	1	NONE	-	-	-	-	-
1,2-Dibromoethane	µg/kg	1	ISO 17025	-	-	-	-	-
Chlorobenzene	µg/kg	1	MCERTS	-	-	-	-	-
1,1,1,2-Tetrachloroethane	µg/kg	1	MCERTS	-	-	-	-	-
Ethylbenzene	µg/kg	1	MCERTS	-	-	-	-	-
p & m-Xylene	µg/kg	1	MCERTS	-	-	-	-	-
Styrene	µg/kg	1	MCERTS	-	-	-	-	-
Tribromomethane	µg/kg	1	NONE	-	-	-	-	-
o-Xylene	µg/kg	1	MCERTS	-	-	-	-	-
1,1,2,2-Tetrachloroethane	µg/kg	1	MCERTS	-	-	-	-	-
Isopropylbenzene	µg/kg	1	MCERTS	-	-	-	-	-
Bromobenzene	µg/kg	1	MCERTS	-	-	-	-	-
n-Propylbenzene	µg/kg	1	ISO 17025	-	-	-	-	-
2-Chlorotoluene	µg/kg	1	MCERTS	-	-	-	-	-
4-Chlorotoluene	µg/kg	1	MCERTS	-	-	-	-	-
1,3,5-Trimethylbenzene	µg/kg	1	ISO 17025	-	-	-	-	-
tert-Butylbenzene	µg/kg	1	MCERTS	-	-	-	-	-
1,2,4-Trimethylbenzene	µg/kg	1	ISO 17025	-	-	-	-	-
sec-Butylbenzene	µg/kg	1	MCERTS	-	-	-	-	-
1,3-Dichlorobenzene	µg/kg	1	ISO 17025	-	-	-	-	-
p-Isopropyltoluene	µg/kg	1	ISO 17025	-	-	-	-	-
1,2-Dichlorobenzene	µg/kg	1	MCERTS	-	-	-	-	-

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Lab Sample Number				2023036	2023037	2023038	2023039	2023040
Sample Reference				TP142	TP137	TP137	TP146	TP146
Sample Number				1	1	2	None Supplied	None Supplied
Depth (m)				0.20	0.10	0.30	0.20	0.40
Date Sampled				16/09/2021	16/09/2021	16/09/2021	16/09/2021	16/09/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
1,4-Dichlorobenzene	µg/kg	1	MCERTS	-	-	-	-	-
Butylbenzene	µg/kg	1	MCERTS	-	-	-	-	-
1,2-Dibromo-3-chloropropane	µg/kg	1	ISO 17025	-	-	-	-	-
1,2,4-Trichlorobenzene	µg/kg	1	MCERTS	-	-	-	-	-
Hexachlorobutadiene	µg/kg	1	MCERTS	-	-	-	-	-
1,2,3-Trichlorobenzene	µg/kg	1	ISO 17025	-	-	-	-	-

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Lab Sample Number				2023036	2023037	2023038	2023039	2023040
Sample Reference				TP142	TP137	TP137	TP146	TP146
Sample Number				1	1	2	None Supplied	None Supplied
Depth (m)				0.20	0.10	0.30	0.20	0.40
Date Sampled				16/09/2021	16/09/2021	16/09/2021	16/09/2021	16/09/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
SVOCs								
Aniline	mg/kg	0.1	NONE	-	-	-	-	-
Phenol	mg/kg	0.2	ISO 17025	-	-	-	-	-
2-Chlorophenol	mg/kg	0.1	MCERTS	-	-	-	-	-
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	-	-	-	-	-
1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	-	-	-	-	-
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	-	-	-	-	-
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	-	-	-	-	-
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	-	-	-	-	-
2-Methylphenol	mg/kg	0.3	MCERTS	-	-	-	-	-
Hexachloroethane	mg/kg	0.05	MCERTS	-	-	-	-	-
Nitrobenzene	mg/kg	0.3	MCERTS	-	-	-	-	-
4-Methylphenol	mg/kg	0.2	NONE	-	-	-	-	-
Isophorone	mg/kg	0.2	MCERTS	-	-	-	-	-
2-Nitrophenol	mg/kg	0.3	MCERTS	-	-	-	-	-
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	-	-	-	-	-
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	-	-	-	-	-
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	-	-	-	-	-
Naphthalene	mg/kg	0.05	MCERTS	-	-	-	-	-
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	-	-	-	-	-
4-Chloroaniline	mg/kg	0.1	NONE	-	-	-	-	-
Hexachlorobutadiene	mg/kg	0.1	MCERTS	-	-	-	-	-
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	-	-	-	-	-
2,4,6-Trichlorophenol	mg/kg	0.1	MCERTS	-	-	-	-	-
2,4,5-Trichlorophenol	mg/kg	0.2	MCERTS	-	-	-	-	-
2-Methylnaphthalene	mg/kg	0.1	NONE	-	-	-	-	-
2-Chloronaphthalene	mg/kg	0.1	MCERTS	-	-	-	-	-
Dimethylphthalate	mg/kg	0.1	MCERTS	-	-	-	-	-
2,6-Dinitrotoluene	mg/kg	0.1	MCERTS	-	-	-	-	-
Acenaphthylene	mg/kg	0.05	MCERTS	-	-	-	-	-
Acenaphthene	mg/kg	0.05	MCERTS	-	-	-	-	-
2,4-Dinitrotoluene	mg/kg	0.2	MCERTS	-	-	-	-	-
Dibenzofuran	mg/kg	0.2	MCERTS	-	-	-	-	-
4-Chlorophenyl phenyl ether	mg/kg	0.3	ISO 17025	-	-	-	-	-
Diethyl phthalate	mg/kg	0.2	MCERTS	-	-	-	-	-
4-Nitroaniline	mg/kg	0.2	MCERTS	-	-	-	-	-
Fluorene	mg/kg	0.05	MCERTS	-	-	-	-	-
Azobenzene	mg/kg	0.3	MCERTS	-	-	-	-	-
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	-	-	-	-	-
Hexachlorobenzene	mg/kg	0.3	MCERTS	-	-	-	-	-
Phenanthrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Anthracene	mg/kg	0.05	MCERTS	-	-	-	-	-
Carbazole	mg/kg	0.3	MCERTS	-	-	-	-	-
Dibutyl phthalate	mg/kg	0.2	MCERTS	-	-	-	-	-
Anthraquinone	mg/kg	0.3	MCERTS	-	-	-	-	-
Fluoranthene	mg/kg	0.05	MCERTS	-	-	-	-	-
Pyrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Butyl benzyl phthalate	mg/kg	0.3	ISO 17025	-	-	-	-	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	-	-	-	-
Chrysene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	-	-	-	-

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Sample Reference				TP142	TP137	TP137	TP146	TP146
Sample Number				1	1	2	None Supplied	None Supplied
Depth (m)				0.20	0.10	0.30	0.20	0.40
Date Sampled				16/09/2021	16/09/2021	16/09/2021	16/09/2021	16/09/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Pesticide and Herbicide Screen								
GCMS Pesticide Screen		N/A	NONE	None Detected	-	-	None Detected	-

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Lab Sample Number				2023036	2023037	2023038	2023039	2023040
Sample Reference				TP142	TP137	TP137	TP146	TP146
Sample Number				1	1	2	None Supplied	None Supplied
Depth (m)				0.20	0.10	0.30	0.20	0.40
Date Sampled				16/09/2021	16/09/2021	16/09/2021	16/09/2021	16/09/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Acid Herbicides								
2,3,6-TBA	µg/kg	50	NONE	< 50	-	-	< 50	-
2,4,5-T	µg/kg	10	NONE	< 10	-	-	< 10	-
2,4,5-TP (Fenoprop)	µg/kg	10	NONE	< 10	-	-	< 10	-
2,4-D	µg/kg	10	NONE	< 10	-	-	< 10	-
2,4-DB	µg/kg	10	NONE	< 10	-	-	< 10	-
4-CPA	µg/kg	20	NONE	< 20	-	-	< 20	-
Bromacil	µg/kg	10	NONE	< 10	-	-	< 10	-
Bromoxynil	µg/kg	10	NONE	< 10	-	-	< 10	-
Clopyralid	µg/kg	100	NONE	< 100	-	-	< 100	-
Dicamba	µg/kg	20	NONE	< 20	-	-	< 20	-
Diclofop	µg/kg	10	NONE	< 10	-	-	< 10	-
Dichlorprop	µg/kg	10	NONE	< 10	-	-	< 10	-
Dinoseb	µg/kg	10	NONE	< 10	-	-	< 10	-
Flamprop	µg/kg	50	NONE	< 50	-	-	< 50	-
Flamprop-Isopropyl	µg/kg	10	NONE	< 10	-	-	< 10	-
Ioxynil	µg/kg	10	NONE	< 10	-	-	< 10	-
MCPA	µg/kg	10	NONE	< 10	-	-	< 10	-
MCPB	µg/kg	20	NONE	< 20	-	-	< 20	-
MCPP (Mecoprop)	µg/kg	10	NONE	< 10	-	-	< 10	-
Picloram	µg/kg	50	NONE	< 50	-	-	< 50	-

U/S = Unsuitable Sample I/S = Insufficient Sample

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Lab Sample Number				2023041	2023042	2023043	2023044	2023045
Sample Reference				DS117	DS123	DS116A	DS110	DS114
Sample Number				2	2	1	3	2
Depth (m)				0.25	0.70	0.25	1.00	0.40
Date Sampled				16/09/2021	16/09/2021	13/09/2021	13/09/2021	13/09/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Leachate Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
General Inorganics								
pH	pH Units	N/A	ISO 17025	7.7	7.3	8.6	8.2	7.9
Total Cyanide	µg/l	10	ISO 17025	< 10	< 10	21	< 10	< 10
Sulphate as SO4	mg/l	0.1	ISO 17025	6.3	8.5	17.2	4.8	2.4
Heavy Metals / Metalloids								
Arsenic (dissolved)	µg/l	1	ISO 17025	< 1.0	3.7	9.3	4.2	7.9
Barium (dissolved)	µg/l	0.05	ISO 17025	14	14	15	7.4	12
Beryllium (dissolved)	µg/l	0.2	ISO 17025	< 0.2	0.3	0.6	0.3	0.9
Boron (dissolved)	µg/l	10	ISO 17025	32	34	36	11	16
Cadmium (dissolved)	µg/l	0.08	ISO 17025	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08
Chromium (dissolved)	µg/l	0.4	ISO 17025	1.0	3.6	8.9	0.5	1.9
Copper (dissolved)	µg/l	0.7	ISO 17025	36	20	33	6.6	20
Lead (dissolved)	µg/l	1	ISO 17025	< 1.0	< 1.0	4.5	2.0	1.7
Mercury (dissolved)	µg/l	0.5	ISO 17025	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Nickel (dissolved)	µg/l	0.3	ISO 17025	3.8	4.0	28	2.5	3.7
Selenium (dissolved)	µg/l	4	ISO 17025	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Vanadium (dissolved)	µg/l	1.7	ISO 17025	< 1.7	< 1.7	< 1.7	< 1.7	< 1.7
Zinc (dissolved)	µg/l	0.4	ISO 17025	17	18	15	12	20

U/S = Unsuitable Sample I/S = Insufficient Sample

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Lab Sample Number				2023046	2023047	2023048	2023049
Sample Reference				DS115	TP103	TP137	TP146
Sample Number				2	2	2	None Supplied
Depth (m)				0.50	0.50	0.30	0.40
Date Sampled				13/09/2021	15/09/2021	16/09/2021	16/09/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Leachate Analysis)	**Units**	**Limit of detection**	**Accreditation Status**				
General Inorganics							
pH	pH Units	N/A	ISO 17025	8.2	8.1	7.5	7.9
Total Cyanide	µg/l	10	ISO 17025	< 10	< 10	< 10	< 10
Sulphate as SO4	mg/l	0.1	ISO 17025	1.3	2.0	12.3	2.1
Heavy Metals / Metalloids							
Arsenic (dissolved)	µg/l	1	ISO 17025	< 1.0	< 1.0	8.0	< 1.0
Barium (dissolved)	µg/l	0.05	ISO 17025	7.1	12	16	14
Beryllium (dissolved)	µg/l	0.2	ISO 17025	0.5	0.6	< 0.2	0.5
Boron (dissolved)	µg/l	10	ISO 17025	14	14	31	15
Cadmium (dissolved)	µg/l	0.08	ISO 17025	< 0.08	< 0.08	< 0.08	< 0.08
Chromium (dissolved)	µg/l	0.4	ISO 17025	0.8	2.0	3.5	3.1
Copper (dissolved)	µg/l	0.7	ISO 17025	12	24	42	27
Lead (dissolved)	µg/l	1	ISO 17025	< 1.0	4.0	1.8	3.5
Mercury (dissolved)	µg/l	0.5	ISO 17025	< 0.5	< 0.5	< 0.5	< 0.5
Nickel (dissolved)	µg/l	0.3	ISO 17025	2.2	4.7	5.3	4.8
Selenium (dissolved)	µg/l	4	ISO 17025	< 4.0	< 4.0	6.7	< 4.0
Vanadium (dissolved)	µg/l	1.7	ISO 17025	< 1.7	< 1.7	< 1.7	< 1.7
Zinc (dissolved)	µg/l	0.4	ISO 17025	6.8	13	18	12

U/S = Unsuitable Sample I/S = Insufficient Sample

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* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
2023016	DS102	1	0.2	Brown loam with gravel and vegetation.
2023017	DS112	1	0.3	Brown loam and clay with gravel.
2023018	DS122	1	0.2	Brown loam and clay with gravel.
2023019	DS117	1	0.25	Brown loam and clay with gravel.
2023020	DS123	2	0.7	Brown loam and clay with gravel.
2023021	DS124	1	0.2	Brown loam and clay with gravel.
2023022	DS120	1	0.2	Brown loam and clay with gravel.
2023023	DS130	1	0.2	Brown loam and clay with gravel.
2023024	DS126	1	0.2	Brown loam and clay with gravel.
2023025	DS116A	1	0.25	Brown loam and clay with gravel.
2023026	DS110	1	0.2	Brown loam and clay with gravel.
2023027	DS110	3	1	Brown clay with gravel.
2023028	DS114	1	0.15	Brown loam and clay with gravel.
2023029	DS114	2	0.4	Brown loam and clay with gravel.
2023030	DS115	1	0.2	Brown loam and clay with gravel.
2023031	DS115	2	0.5	Brown loam and clay with gravel.
2023032	TP103	1	0.2	Brown loam and clay with gravel.
2023033	TP103	2	0.5	Brown loam and clay with gravel.
2023034	TP106	1	0.2	Brown loam and clay with gravel.
2023035	TP122	1	0.2	Brown loam and clay with gravel.
2023036	TP142	1	0.2	Brown loam and clay with gravel.
2023037	TP137	1	0.1	Brown loam and clay.
2023038	TP137	2	0.3	Brown loam and clay with vegetation.
2023039	TP146	None Supplied	0.2	Brown loam and clay with vegetation.
2023040	TP146	None Supplied	0.4	Brown loam and clay with gravel.

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Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Sulphate, water soluble, in soil (16hr extraction)	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In house method.	L038-PL	D	MCERTS
BS EN 12457-1 (2:1) Leachate Prep	2:1 (as recieved, moisture adjusted) end over end extraction with water for 24 hours. Eluate filtered prior to analysis.	In-house method based on BSEN12457-1.	L043-PL	W	NONE
Metals by ICP-OES in leachate	Determination of metals in leachate by acidification followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Boron in leachate	Determination of boron in leachate. Sample acidified and followed by ICP-OES.	In-house method based on MEWAM	L039-PL	W	ISO 17025
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES.	In-house method based on Second Site Properties version 3	L038-PL	D	MCERTS
Complex Cyanide in soil	Determination of complex cyanide by calculation.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	MCERTS
Free cyanide in soil	Determination of free cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	MCERTS
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In house method.	L099-PL	D	MCERTS
pH at 20oC in leachate	Determination of pH in leachate by electrometric measurement.	In house method.	L005-PL	W	ISO 17025
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Total Sulphur in soil	Determination of total sulphur in soil by extraction with aqua-regia, potassium bromide/bromate followed by ICP-OES.	In house method.	L038-PL	D	MCERTS
Semi-volatile organic compounds in soil	Determination of semi-volatile organic compounds in soil by extraction in dichloromethane and hexane followed by GC-MS.	In-house method based on USEPA 8270	L064-PL	D	MCERTS

Analytical Report Number : 21-12246
Project / Site name: Oxfordshire SRFI

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
TPH2 (Soil)	Determination of hydrocarbons C6-C10 by headspace GC-MS.	In-house method based on USEPA8260	L088-PL	W	MCERTS
Total cyanide in leachate	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	ISO 17025
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
Volatile organic compounds in soil	Determination of volatile organic compounds in soil by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	MCERTS
Acid Herbicides by LC-MS	Detemination of Acid Herbicides by LC MS	In-house method	L057B-PL	W	NONE
GC Pesticide Screen (TIC)	Analysis of unknown pesticides by GCMS	GC Pesticide Screen (TIC)	L064B	D	NONE
TPH Banding in Soil by FID	Determination of hexane extractable hydrocarbons in soil by GC-FID.	In-house method, TPH with carbon banding and silica gel split/cleanup.	L076-PL	W	MCERTS
Sulphate in leachates	Determination of sulphate in leachate by acidification followed by ICP-OES.	In-house method based on MEWAM 1986 Methods for the Determination of Metals in Soil""	L039-PL	W	ISO 17025
Organic matter (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In house method.	L009-PL	D	MCERTS

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.
For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Analytical Report Number : 21-12246
Project / Site name: Oxfordshire SRFI

Sample ID	Other ID	Sample Type	Lab Sample Number	Sample Deviation	Test Name	Test Ref	Test Deviation
DS102	1	S	2023016	c	Free cyanide in soil	L080-PL	c
DS102	1	S	2023016	c	Complex Cyanide in soil	L080-PL	c
DS102	1	S	2023016	c	Total cyanide in soil	L080-PL	c
DS110	1	S	2023026	c	Free cyanide in soil	L080-PL	c
DS110	1	S	2023026	c	Complex Cyanide in soil	L080-PL	c
DS110	1	S	2023026	c	Total cyanide in soil	L080-PL	c
DS110	3	S	2023027	c	Free cyanide in soil	L080-PL	c
DS110	3	S	2023027	c	Complex Cyanide in soil	L080-PL	c
DS110	3	S	2023027	c	Total cyanide in soil	L080-PL	c
DS112	1	S	2023017	c	Free cyanide in soil	L080-PL	c
DS112	1	S	2023017	c	Complex Cyanide in soil	L080-PL	c
DS112	1	S	2023017	c	Total cyanide in soil	L080-PL	c
DS114	1	S	2023028	c	Free cyanide in soil	L080-PL	c
DS114	1	S	2023028	c	Complex Cyanide in soil	L080-PL	c
DS114	1	S	2023028	c	Total cyanide in soil	L080-PL	c
DS114	2	S	2023029	c	Free cyanide in soil	L080-PL	c
DS114	2	S	2023029	c	Complex Cyanide in soil	L080-PL	c
DS114	2	S	2023029	c	Total cyanide in soil	L080-PL	c
DS115	1	S	2023030	c	Free cyanide in soil	L080-PL	c
DS115	1	S	2023030	c	Complex Cyanide in soil	L080-PL	c
DS115	1	S	2023030	c	Total cyanide in soil	L080-PL	c
DS115	2	S	2023031	c	Free cyanide in soil	L080-PL	c
DS115	2	S	2023031	c	Complex Cyanide in soil	L080-PL	c
DS115	2	S	2023031	c	Total cyanide in soil	L080-PL	c
DS116A	1	S	2023025	c	Free cyanide in soil	L080-PL	c
DS116A	1	S	2023025	c	Complex Cyanide in soil	L080-PL	c
DS116A	1	S	2023025	c	Total cyanide in soil	L080-PL	c
DS117	1	S	2023019	c	Free cyanide in soil	L080-PL	c
DS117	1	S	2023019	c	Complex Cyanide in soil	L080-PL	c
DS117	1	S	2023019	c	Total cyanide in soil	L080-PL	c
DS120	1	S	2023022	c	Free cyanide in soil	L080-PL	c
DS120	1	S	2023022	c	Complex Cyanide in soil	L080-PL	c
DS120	1	S	2023022	c	Total cyanide in soil	L080-PL	c
DS122	1	S	2023018	c	Free cyanide in soil	L080-PL	c
DS122	1	S	2023018	c	Complex Cyanide in soil	L080-PL	c
DS122	1	S	2023018	c	Total cyanide in soil	L080-PL	c
DS123	2	S	2023020	c	Free cyanide in soil	L080-PL	c
DS123	2	S	2023020	c	Complex Cyanide in soil	L080-PL	c
DS123	2	S	2023020	c	Total cyanide in soil	L080-PL	c
DS124	1	S	2023021	c	Free cyanide in soil	L080-PL	c
DS124	1	S	2023021	c	Complex Cyanide in soil	L080-PL	c
DS124	1	S	2023021	c	Total cyanide in soil	L080-PL	c
DS126	1	S	2023024	c	Free cyanide in soil	L080-PL	c
DS126	1	S	2023024	c	Complex Cyanide in soil	L080-PL	c
DS126	1	S	2023024	c	Total cyanide in soil	L080-PL	c
DS130	1	S	2023023	c	Free cyanide in soil	L080-PL	c
DS130	1	S	2023023	c	Complex Cyanide in soil	L080-PL	c
DS130	1	S	2023023	c	Total cyanide in soil	L080-PL	c
TP103	1	S	2023032	c	Free cyanide in soil	L080-PL	c
TP103	1	S	2023032	c	Complex Cyanide in soil	L080-PL	c
TP103	1	S	2023032	c	Total cyanide in soil	L080-PL	c
TP103	2	S	2023033	c	Free cyanide in soil	L080-PL	c
TP103	2	S	2023033	c	Complex Cyanide in soil	L080-PL	c
TP103	2	S	2023033	c	Total cyanide in soil	L080-PL	c
TP106	1	S	2023034	c	Free cyanide in soil	L080-PL	c
TP106	1	S	2023034	c	Complex Cyanide in soil	L080-PL	c
TP106	1	S	2023034	c	Total cyanide in soil	L080-PL	c
TP122	1	S	2023035	c	Free cyanide in soil	L080-PL	c
TP122	1	S	2023035	c	Complex Cyanide in soil	L080-PL	c
TP122	1	S	2023035	c	Total cyanide in soil	L080-PL	c
TP137	1	S	2023037	c	Free cyanide in soil	L080-PL	c
TP137	1	S	2023037	c	Complex Cyanide in soil	L080-PL	c

Analytical Report Number : 21-12246
Project / Site name: Oxfordshire SRFI

Sample ID	Other ID	Sample Type	Lab Sample Number	Sample Deviation	Test Name	Test Ref	Test Deviation
DS102	1	S	2023016	c	Free cyanide in soil	L080-PL	c
TP137	1	S	2023037	c	Total cyanide in soil	L080-PL	c
TP137	2	S	2023038	c	Free cyanide in soil	L080-PL	c
TP137	2	S	2023038	c	Complex Cyanide in soil	L080-PL	c
TP137	2	S	2023038	c	Total cyanide in soil	L080-PL	c
TP142	1	S	2023036	c	Free cyanide in soil	L080-PL	c
TP142	1	S	2023036	c	Complex Cyanide in soil	L080-PL	c
TP142	1	S	2023036	c	Total cyanide in soil	L080-PL	c
TP146	None Supplied	S	2023039	c	Free cyanide in soil	L080-PL	c
TP146	None Supplied	S	2023039	c	Complex Cyanide in soil	L080-PL	c
TP146	None Supplied	S	2023039	c	Total cyanide in soil	L080-PL	c
TP146	None Supplied	S	2023040	c	Free cyanide in soil	L080-PL	c
TP146	None Supplied	S	2023040	c	Complex Cyanide in soil	L080-PL	c
TP146	None Supplied	S	2023040	c	Total cyanide in soil	L080-PL	c

Results

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Analytical Report Number : 21-13211

Project / Site name:	Oxfordshire SRFI	**Samples received on:**	21/09/2021
Your job number:	C10172	**Samples instructed on/ Analysis started on:**	30/09/2021
Your order number:	PO-1582	**Analysis completed by:**	08/10/2021
Report Issue Number:	1	**Report issued on:**	08/10/2021
Samples Analysed:	6 leachate samples - 11 soil samples		

Signed: Izabela Wójcik

Izabela Wójcik
Technical Reviewer (Reporting Team)
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting

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Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.

Analytical Report Number: 21-13211
Project / Site name: Oxfordshire SRFI
Your Order No: PO-1582

Lab Sample Number				2029154	2029155	2029156	2029157	2029158
Sample Reference				TP115	TP115	TP115	TP115	TP120
Sample Number				1	2	3	4	4
Depth (m)				0.10	0.40	1.20	1.40	2.00
Date Sampled				17/09/2021	17/09/2021	17/09/2021	17/09/2021	17/09/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	-	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	-	7.7	12	7.4	17
Total mass of sample received	kg	0.001	NONE	-	1.2	1.0	1.0	1.0

Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	-	-

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	-	8.3	8.2	8.7	8.7
Total Cyanide	mg/kg	1	MCERTS	-	< 1.0	< 1.0	< 1.0	< 1.0
Complex Cyanide	mg/kg	1	MCERTS	-	< 1.0	< 1.0	< 1.0	< 1.0
Free Cyanide	mg/kg	1	MCERTS	-	< 1.0	< 1.0	< 1.0	< 1.0
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	-	0.011	0.013	0.0063	0.022
Total Sulphur	mg/kg	50	MCERTS	-	490	350	320	650
Organic Matter (automated)	%	0.1	MCERTS	-	3.5	2.5	2.1	1.0

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	-	< 1.0	< 1.0	< 1.0	< 1.0

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	< 0.05	< 0.05
Anthracene	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	< 0.05	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	< 0.05	< 0.05
Pyrene	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	< 0.05	< 0.05
Chrysene	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	< 0.05	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	< 0.05	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	< 0.05	< 0.05

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	-	< 0.80	< 0.80	< 0.80	< 0.80

Analytical Report Number: 21-13211
Project / Site name: Oxfordshire SRFI
Your Order No: PO-1582

Lab Sample Number				2029154	2029155	2029156	2029157	2029158
Sample Reference				TP115	TP115	TP115	TP115	TP120
Sample Number				1	2	3	4	4
Depth (m)				0.10	0.40	1.20	1.40	2.00
Date Sampled				17/09/2021	17/09/2021	17/09/2021	17/09/2021	17/09/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	-	15	20	11	3.2
Barium (aqua regia extractable)	mg/kg	1	MCERTS	-	47	85	14	17
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	-	0.75	1.1	0.33	0.50
Boron (water soluble)	mg/kg	0.2	MCERTS	-	0.8	< 0.2	< 0.2	0.3
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	-	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	4	MCERTS	-	< 4.0	< 4.0	< 4.0	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	-	21	30	9.8	13
Copper (aqua regia extractable)	mg/kg	1	MCERTS	-	7.3	8.7	4.3	9.6
Lead (aqua regia extractable)	mg/kg	1	MCERTS	-	20	17	4.4	6.9
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	-	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	-	15	23	9.8	10
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	-	< 1.0	< 1.0	< 1.0	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	-	49	68	34	16
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	-	46	50	16	20
Monoaromatics & Oxygenates								
Benzene	µg/kg	1	MCERTS	-	< 1.0	< 1.0	-	-
Toluene	µg/kg	1	MCERTS	-	< 1.0	< 1.0	-	-
Ethylbenzene	µg/kg	1	MCERTS	-	< 1.0	< 1.0	-	-
p & m-xylene	µg/kg	1	MCERTS	-	< 1.0	< 1.0	-	-
o-xylene	µg/kg	1	MCERTS	-	< 1.0	< 1.0	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	< 1.0	< 1.0	-	-
Petroleum Hydrocarbons								
TPH C10 - C40	mg/kg	10	MCERTS	-	< 10	< 10	< 10	< 10
TPH2 (C6 - C10)	mg/kg	0.1	MCERTS	-	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.001	MCERTS	-	< 0.001	< 0.001	-	-
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	-	< 0.001	< 0.001	-	-
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	-	< 0.001	< 0.001	-	-
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	-	< 1.0	< 1.0	-	-
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	-	< 2.0	< 2.0	-	-
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	-	< 8.0	< 8.0	-	-
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	-	< 8.0	< 8.0	-	-
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	-	< 10	< 10	-	-
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	-	< 0.001	< 0.001	-	-
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	-	< 0.001	< 0.001	-	-
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	-	< 0.001	< 0.001	-	-
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	-	< 1.0	< 1.0	-	-
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	-	< 2.0	< 2.0	-	-
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	-	< 10	< 10	-	-
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	-	< 10	< 10	-	-
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	-	< 10	< 10	-	-
VOCs								
Chloromethane	µg/kg	1	ISO 17025	-	-	< 1.0	-	-
Chloroethane	µg/kg	1	NONE	-	-	< 1.0	-	-
Bromomethane	µg/kg	1	ISO 17025	-	-	< 1.0	-	-
Vinyl Chloride	µg/kg	1	NONE	-	-	< 1.0	-	-
Trichlorofluoromethane	µg/kg	1	NONE	-	-	< 1.0	-	-

Analytical Report Number: 21-13211
Project / Site name: Oxfordshire SRFI
Your Order No: PO-1582

Lab Sample Number				2029154	2029155	2029156	2029157	2029158
Sample Reference				TP115	TP115	TP115	TP115	TP120
Sample Number				1	2	3	4	4
Depth (m)				0.10	0.40	1.20	1.40	2.00
Date Sampled				17/09/2021	17/09/2021	17/09/2021	17/09/2021	17/09/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
1,1-Dichloroethene	µg/kg	1	NONE	-	-	< 1.0	-	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	ISO 17025	-	-	< 1.0	-	-
Cis-1,2-dichloroethene	µg/kg	1	MCERTS	-	-	< 1.0	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	-	< 1.0	-	-
1,1-Dichloroethane	µg/kg	1	MCERTS	-	-	< 1.0	-	-
2,2-Dichloropropane	µg/kg	1	MCERTS	-	-	< 1.0	-	-
Trichloromethane	µg/kg	1	MCERTS	-	-	< 1.0	-	-
1,1,1-Trichloroethane	µg/kg	1	MCERTS	-	-	< 1.0	-	-
1,2-Dichloroethane	µg/kg	1	MCERTS	-	-	< 1.0	-	-
1,1-Dichloropropene	µg/kg	1	MCERTS	-	-	< 1.0	-	-
Trans-1,2-dichloroethene	µg/kg	1	NONE	-	-	< 1.0	-	-
Benzene	µg/kg	1	MCERTS	-	-	< 1.0	-	-
Tetrachloromethane	µg/kg	1	MCERTS	-	-	< 1.0	-	-
1,2-Dichloropropane	µg/kg	1	MCERTS	-	-	< 1.0	-	-
Trichloroethene	µg/kg	1	MCERTS	-	-	< 1.0	-	-
Dibromomethane	µg/kg	1	MCERTS	-	-	< 1.0	-	-
Bromodichloromethane	µg/kg	1	MCERTS	-	-	< 1.0	-	-
Cis-1,3-dichloropropene	µg/kg	1	ISO 17025	-	-	< 1.0	-	-
Trans-1,3-dichloropropene	µg/kg	1	ISO 17025	-	-	< 1.0	-	-
Toluene	µg/kg	1	MCERTS	-	-	< 1.0	-	-
1,1,2-Trichloroethane	µg/kg	1	MCERTS	-	-	< 1.0	-	-
1,3-Dichloropropane	µg/kg	1	ISO 17025	-	-	< 1.0	-	-
Dibromochloromethane	µg/kg	1	ISO 17025	-	-	< 1.0	-	-
Tetrachloroethene	µg/kg	1	NONE	-	-	< 1.0	-	-
1,2-Dibromoethane	µg/kg	1	ISO 17025	-	-	< 1.0	-	-
Chlorobenzene	µg/kg	1	MCERTS	-	-	< 1.0	-	-
1,1,1,2-Tetrachloroethane	µg/kg	1	MCERTS	-	-	< 1.0	-	-
Ethylbenzene	µg/kg	1	MCERTS	-	-	< 1.0	-	-
p & m-Xylene	µg/kg	1	MCERTS	-	-	< 1.0	-	-
Styrene	µg/kg	1	MCERTS	-	-	< 1.0	-	-
Tribromomethane	µg/kg	1	NONE	-	-	< 1.0	-	-
o-Xylene	µg/kg	1	MCERTS	-	-	< 1.0	-	-
1,1,2,2-Tetrachloroethane	µg/kg	1	MCERTS	-	-	< 1.0	-	-
Isopropylbenzene	µg/kg	1	MCERTS	-	-	< 1.0	-	-
Bromobenzene	µg/kg	1	MCERTS	-	-	< 1.0	-	-
n-Propylbenzene	µg/kg	1	ISO 17025	-	-	< 1.0	-	-
2-Chlorotoluene	µg/kg	1	MCERTS	-	-	< 1.0	-	-
4-Chlorotoluene	µg/kg	1	MCERTS	-	-	< 1.0	-	-
1,3,5-Trimethylbenzene	µg/kg	1	ISO 17025	-	-	< 1.0	-	-
tert-Butylbenzene	µg/kg	1	MCERTS	-	-	< 1.0	-	-
1,2,4-Trimethylbenzene	µg/kg	1	ISO 17025	-	-	< 1.0	-	-
sec-Butylbenzene	µg/kg	1	MCERTS	-	-	< 1.0	-	-
1,3-Dichlorobenzene	µg/kg	1	ISO 17025	-	-	< 1.0	-	-
p-Isopropyltoluene	µg/kg	1	ISO 17025	-	-	< 1.0	-	-
1,2-Dichlorobenzene	µg/kg	1	MCERTS	-	-	< 1.0	-	-
1,4-Dichlorobenzene	µg/kg	1	MCERTS	-	-	< 1.0	-	-
Butylbenzene	µg/kg	1	MCERTS	-	-	< 1.0	-	-
1,2-Dibromo-3-chloropropane	µg/kg	1	ISO 17025	-	-	< 1.0	-	-
1,2,4-Trichlorobenzene	µg/kg	1	MCERTS	-	-	< 1.0	-	-
Hexachlorobutadiene	µg/kg	1	MCERTS	-	-	< 1.0	-	-
1,2,3-Trichlorobenzene	µg/kg	1	ISO 17025	-	-	< 1.0	-	-

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Lab Sample Number				2029154	2029155	2029156	2029157	2029158
Sample Reference				TP115	TP115	TP115	TP115	TP120
Sample Number				1	2	3	4	4
Depth (m)				0.10	0.40	1.20	1.40	2.00
Date Sampled				17/09/2021	17/09/2021	17/09/2021	17/09/2021	17/09/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
SVOCs								
Aniline	mg/kg	0.1	NONE	-	-	< 0.1	-	-
Phenol	mg/kg	0.2	ISO 17025	-	-	< 0.2	-	-
2-Chlorophenol	mg/kg	0.1	MCERTS	-	-	< 0.1	-	-
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	-	-	< 0.2	-	-
1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	-	-	< 0.2	-	-
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	-	-	< 0.1	-	-
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	-	-	< 0.2	-	-
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	-	-	< 0.1	-	-
2-Methylphenol	mg/kg	0.3	MCERTS	-	-	< 0.3	-	-
Hexachloroethane	mg/kg	0.05	MCERTS	-	-	< 0.05	-	-
Nitrobenzene	mg/kg	0.3	MCERTS	-	-	< 0.3	-	-
4-Methylphenol	mg/kg	0.2	NONE	-	-	< 0.2	-	-
Isophorone	mg/kg	0.2	MCERTS	-	-	< 0.2	-	-
2-Nitrophenol	mg/kg	0.3	MCERTS	-	-	< 0.3	-	-
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	-	-	< 0.3	-	-
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	-	-	< 0.3	-	-
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	-	-	< 0.3	-	-
Naphthalene	mg/kg	0.05	MCERTS	-	-	< 0.05	-	-
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	-	-	< 0.3	-	-
4-Chloroaniline	mg/kg	0.1	NONE	-	-	< 0.1	-	-
Hexachlorobutadiene	mg/kg	0.1	MCERTS	-	-	< 0.1	-	-
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	-	-	< 0.1	-	-
2,4,6-Trichlorophenol	mg/kg	0.1	MCERTS	-	-	< 0.1	-	-
2,4,5-Trichlorophenol	mg/kg	0.2	MCERTS	-	-	< 0.2	-	-
2-Methylnaphthalene	mg/kg	0.1	NONE	-	-	< 0.1	-	-
2-Chloronaphthalene	mg/kg	0.1	MCERTS	-	-	< 0.1	-	-
Dimethylphthalate	mg/kg	0.1	MCERTS	-	-	< 0.1	-	-
2,6-Dinitrotoluene	mg/kg	0.1	MCERTS	-	-	< 0.1	-	-
Acenaphthylene	mg/kg	0.05	MCERTS	-	-	< 0.05	-	-
Acenaphthene	mg/kg	0.05	MCERTS	-	-	< 0.05	-	-
2,4-Dinitrotoluene	mg/kg	0.2	MCERTS	-	-	< 0.2	-	-
Dibenzofuran	mg/kg	0.2	MCERTS	-	-	< 0.2	-	-
4-Chlorophenyl phenyl ether	mg/kg	0.3	ISO 17025	-	-	< 0.3	-	-
Diethyl phthalate	mg/kg	0.2	MCERTS	-	-	< 0.2	-	-
4-Nitroaniline	mg/kg	0.2	MCERTS	-	-	< 0.2	-	-
Fluorene	mg/kg	0.05	MCERTS	-	-	< 0.05	-	-
Azobenzene	mg/kg	0.3	MCERTS	-	-	< 0.3	-	-
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	-	-	< 0.2	-	-
Hexachlorobenzene	mg/kg	0.3	MCERTS	-	-	< 0.3	-	-
Phenanthrene	mg/kg	0.05	MCERTS	-	-	< 0.05	-	-
Anthracene	mg/kg	0.05	MCERTS	-	-	< 0.05	-	-
Carbazole	mg/kg	0.3	MCERTS	-	-	< 0.3	-	-
Dibutyl phthalate	mg/kg	0.2	MCERTS	-	-	< 0.2	-	-
Anthraquinone	mg/kg	0.3	MCERTS	-	-	< 0.3	-	-
Fluoranthene	mg/kg	0.05	MCERTS	-	-	< 0.05	-	-
Pyrene	mg/kg	0.05	MCERTS	-	-	< 0.05	-	-
Butyl benzyl phthalate	mg/kg	0.3	ISO 17025	-	-	< 0.3	-	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	-	< 0.05	-	-
Chrysene	mg/kg	0.05	MCERTS	-	-	< 0.05	-	-
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	-	-	< 0.05	-	-
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	-	-	< 0.05	-	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-	-	< 0.05	-	-

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Sample Reference				TP115	TP115	TP115	TP115	TP120
Sample Number				1	2	3	4	4
Depth (m)				0.10	0.40	1.20	1.40	2.00
Date Sampled				17/09/2021	17/09/2021	17/09/2021	17/09/2021	17/09/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-	-	< 0.05	-	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-	-	< 0.05	-	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	-	< 0.05	-	-

Pesticide and Herbicide Screen

GCMS Pesticide Screen		N/A	NONE	-	-	-	-	-

Acid Herbicides

2,3,6-TBA	µg/kg	50	NONE	-	-	-	-	-
2,4,5-T	µg/kg	10	NONE	-	-	-	-	-
2,4,5-TP (Fenoprop)	µg/kg	10	NONE	-	-	-	-	-
2,4-D	µg/kg	10	NONE	-	-	-	-	-
2,4-DB	µg/kg	10	NONE	-	-	-	-	-
4-CPA	µg/kg	20	NONE	-	-	-	-	-
Bromacil	µg/kg	10	NONE	-	-	-	-	-
Bromoxynil	µg/kg	10	NONE	-	-	-	-	-
Clopyralid	µg/kg	100	NONE	-	-	-	-	-
Dicamba	µg/kg	20	NONE	-	-	-	-	-
Diclofop	µg/kg	10	NONE	-	-	-	-	-
Dichlorprop	µg/kg	10	NONE	-	-	-	-	-
Dinoseb	µg/kg	10	NONE	-	-	-	-	-
Flamprop	µg/kg	50	NONE	-	-	-	-	-
Flamprop-Isopropyl	µg/kg	10	NONE	-	-	-	-	-
Ioxynil	µg/kg	10	NONE	-	-	-	-	-
MCPA	µg/kg	10	NONE	-	-	-	-	-
MCPB	µg/kg	20	NONE	-	-	-	-	-
MCPP (Mecoprop)	µg/kg	10	NONE	-	-	-	-	-
Picloram	µg/kg	50	NONE	-	-	-	-	-

U/S = Unsuitable Sample I/S = Insufficient Sample

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Lab Sample Number				2029159	2029160	2029161	2029162	2029163
Sample Reference				TP152	TP151	DS128	TP163	TP149
Sample Number				2	1	2	2	2
Depth (m)				0.30	0.10	0.50	0.30	0.40
Date Sampled				17/09/2021	17/09/2021	17/09/2021	17/09/2021	17/09/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	12	15	11	16	11
Total mass of sample received	kg	0.001	NONE	1.0	1.0	0.40	1.0	1.0
Asbestos in Soil	Type	N/A	ISO 17025	-	-	-	-	-

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	8.6	7.8	8.1	8.2	8.1
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Complex Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Free Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.039	0.014	0.0065	0.0057	0.012
Total Sulphur	mg/kg	50	MCERTS	170	570	150	300	370
Organic Matter (automated)	%	0.1	MCERTS	1.6	4.2	1.0	1.3	2.8

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Chrysene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	< 0.80	< 0.80	< 0.80	< 0.80	< 0.80

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Lab Sample Number				2029159	2029160	2029161	2029162	2029163
Sample Reference				TP152	TP151	DS128	TP163	TP149
Sample Number				2	1	2	2	2
Depth (m)				0.30	0.10	0.50	0.30	0.40
Date Sampled				17/09/2021	17/09/2021	17/09/2021	17/09/2021	17/09/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	19	19	16	6.7	18
Barium (aqua regia extractable)	mg/kg	1	MCERTS	84	59	48	28	64
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	1.4	0.99	0.99	0.80	0.98
Boron (water soluble)	mg/kg	0.2	MCERTS	< 0.2	0.7	< 0.2	0.6	0.9
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	40	27	30	27	28
Copper (aqua regia extractable)	mg/kg	1	MCERTS	12	17	5.6	7.6	8.1
Lead (aqua regia extractable)	mg/kg	1	MCERTS	15	21	11	8.0	18
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	33	19	21	16	20
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	63	57	53	38	52
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	64	53	44	33	48

Monoaromatics & Oxygenates

Benzene	µg/kg	1	MCERTS	-	-	-	-	-
Toluene	µg/kg	1	MCERTS	-	-	-	-	-
Ethylbenzene	µg/kg	1	MCERTS	-	-	-	-	-
p & m-xylene	µg/kg	1	MCERTS	-	-	-	-	-
o-xylene	µg/kg	1	MCERTS	-	-	-	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	-	-	-	-

Petroleum Hydrocarbons

TPH C10 - C40	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	< 10
TPH2 (C6 - C10)	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.001	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	-	-	-	-	-

VOCs

Chloromethane	µg/kg	1	ISO 17025	-	-	-	-	-
Chloroethane	µg/kg	1	NONE	-	-	-	-	-
Bromomethane	µg/kg	1	ISO 17025	-	-	-	-	-
Vinyl Chloride	µg/kg	1	NONE	-	-	-	-	-
Trichlorofluoromethane	µg/kg	1	NONE	-	-	-	-	-

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Lab Sample Number				2029159	2029160	2029161	2029162	2029163
Sample Reference				TP152	TP151	DS128	TP163	TP149
Sample Number				2	1	2	2	2
Depth (m)				0.30	0.10	0.50	0.30	0.40
Date Sampled				17/09/2021	17/09/2021	17/09/2021	17/09/2021	17/09/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
1,1-Dichloroethene	µg/kg	1	NONE	-	-	-	-	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	ISO 17025	-	-	-	-	-
Cis-1,2-dichloroethene	µg/kg	1	MCERTS	-	-	-	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	-	-	-	-
1,1-Dichloroethane	µg/kg	1	MCERTS	-	-	-	-	-
2,2-Dichloropropane	µg/kg	1	MCERTS	-	-	-	-	-
Trichloromethane	µg/kg	1	MCERTS	-	-	-	-	-
1,1,1-Trichloroethane	µg/kg	1	MCERTS	-	-	-	-	-
1,2-Dichloroethane	µg/kg	1	MCERTS	-	-	-	-	-
1,1-Dichloropropene	µg/kg	1	MCERTS	-	-	-	-	-
Trans-1,2-dichloroethene	µg/kg	1	NONE	-	-	-	-	-
Benzene	µg/kg	1	MCERTS	-	-	-	-	-
Tetrachloromethane	µg/kg	1	MCERTS	-	-	-	-	-
1,2-Dichloropropane	µg/kg	1	MCERTS	-	-	-	-	-
Trichloroethene	µg/kg	1	MCERTS	-	-	-	-	-
Dibromomethane	µg/kg	1	MCERTS	-	-	-	-	-
Bromodichloromethane	µg/kg	1	MCERTS	-	-	-	-	-
Cis-1,3-dichloropropene	µg/kg	1	ISO 17025	-	-	-	-	-
Trans-1,3-dichloropropene	µg/kg	1	ISO 17025	-	-	-	-	-
Toluene	µg/kg	1	MCERTS	-	-	-	-	-
1,1,2-Trichloroethane	µg/kg	1	MCERTS	-	-	-	-	-
1,3-Dichloropropane	µg/kg	1	ISO 17025	-	-	-	-	-
Dibromochloromethane	µg/kg	1	ISO 17025	-	-	-	-	-
Tetrachloroethene	µg/kg	1	NONE	-	-	-	-	-
1,2-Dibromoethane	µg/kg	1	ISO 17025	-	-	-	-	-
Chlorobenzene	µg/kg	1	MCERTS	-	-	-	-	-
1,1,1,2-Tetrachloroethane	µg/kg	1	MCERTS	-	-	-	-	-
Ethylbenzene	µg/kg	1	MCERTS	-	-	-	-	-
p & m-Xylene	µg/kg	1	MCERTS	-	-	-	-	-
Styrene	µg/kg	1	MCERTS	-	-	-	-	-
Tribromomethane	µg/kg	1	NONE	-	-	-	-	-
o-Xylene	µg/kg	1	MCERTS	-	-	-	-	-
1,1,2,2-Tetrachloroethane	µg/kg	1	MCERTS	-	-	-	-	-
Isopropylbenzene	µg/kg	1	MCERTS	-	-	-	-	-
Bromobenzene	µg/kg	1	MCERTS	-	-	-	-	-
n-Propylbenzene	µg/kg	1	ISO 17025	-	-	-	-	-
2-Chlorotoluene	µg/kg	1	MCERTS	-	-	-	-	-
4-Chlorotoluene	µg/kg	1	MCERTS	-	-	-	-	-
1,3,5-Trimethylbenzene	µg/kg	1	ISO 17025	-	-	-	-	-
tert-Butylbenzene	µg/kg	1	MCERTS	-	-	-	-	-
1,2,4-Trimethylbenzene	µg/kg	1	ISO 17025	-	-	-	-	-
sec-Butylbenzene	µg/kg	1	MCERTS	-	-	-	-	-
1,3-Dichlorobenzene	µg/kg	1	ISO 17025	-	-	-	-	-
p-Isopropyltoluene	µg/kg	1	ISO 17025	-	-	-	-	-
1,2-Dichlorobenzene	µg/kg	1	MCERTS	-	-	-	-	-
1,4-Dichlorobenzene	µg/kg	1	MCERTS	-	-	-	-	-
Butylbenzene	µg/kg	1	MCERTS	-	-	-	-	-
1,2-Dibromo-3-chloropropane	µg/kg	1	ISO 17025	-	-	-	-	-
1,2,4-Trichlorobenzene	µg/kg	1	MCERTS	-	-	-	-	-
Hexachlorobutadiene	µg/kg	1	MCERTS	-	-	-	-	-
1,2,3-Trichlorobenzene	µg/kg	1	ISO 17025	-	-	-	-	-

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Project / Site name: Oxfordshire SRFI
Your Order No: PO-1582

Lab Sample Number				2029159	2029160	2029161	2029162	2029163
Sample Reference				TP152	TP151	DS128	TP163	TP149
Sample Number				2	1	2	2	2
Depth (m)				0.30	0.10	0.50	0.30	0.40
Date Sampled				17/09/2021	17/09/2021	17/09/2021	17/09/2021	17/09/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
SVOCs								
Aniline	mg/kg	0.1	NONE	-	-	-	-	-
Phenol	mg/kg	0.2	ISO 17025	-	-	-	-	-
2-Chlorophenol	mg/kg	0.1	MCERTS	-	-	-	-	-
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	-	-	-	-	-
1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	-	-	-	-	-
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	-	-	-	-	-
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	-	-	-	-	-
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	-	-	-	-	-
2-Methylphenol	mg/kg	0.3	MCERTS	-	-	-	-	-
Hexachloroethane	mg/kg	0.05	MCERTS	-	-	-	-	-
Nitrobenzene	mg/kg	0.3	MCERTS	-	-	-	-	-
4-Methylphenol	mg/kg	0.2	NONE	-	-	-	-	-
Isophorone	mg/kg	0.2	MCERTS	-	-	-	-	-
2-Nitrophenol	mg/kg	0.3	MCERTS	-	-	-	-	-
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	-	-	-	-	-
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	-	-	-	-	-
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	-	-	-	-	-
Naphthalene	mg/kg	0.05	MCERTS	-	-	-	-	-
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	-	-	-	-	-
4-Chloroaniline	mg/kg	0.1	NONE	-	-	-	-	-
Hexachlorobutadiene	mg/kg	0.1	MCERTS	-	-	-	-	-
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	-	-	-	-	-
2,4,6-Trichlorophenol	mg/kg	0.1	MCERTS	-	-	-	-	-
2,4,5-Trichlorophenol	mg/kg	0.2	MCERTS	-	-	-	-	-
2-Methylnaphthalene	mg/kg	0.1	NONE	-	-	-	-	-
2-Chloronaphthalene	mg/kg	0.1	MCERTS	-	-	-	-	-
Dimethylphthalate	mg/kg	0.1	MCERTS	-	-	-	-	-
2,6-Dinitrotoluene	mg/kg	0.1	MCERTS	-	-	-	-	-
Acenaphthylene	mg/kg	0.05	MCERTS	-	-	-	-	-
Acenaphthene	mg/kg	0.05	MCERTS	-	-	-	-	-
2,4-Dinitrotoluene	mg/kg	0.2	MCERTS	-	-	-	-	-
Dibenzofuran	mg/kg	0.2	MCERTS	-	-	-	-	-
4-Chlorophenyl phenyl ether	mg/kg	0.3	ISO 17025	-	-	-	-	-
Diethyl phthalate	mg/kg	0.2	MCERTS	-	-	-	-	-
4-Nitroaniline	mg/kg	0.2	MCERTS	-	-	-	-	-
Fluorene	mg/kg	0.05	MCERTS	-	-	-	-	-
Azobenzene	mg/kg	0.3	MCERTS	-	-	-	-	-
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	-	-	-	-	-
Hexachlorobenzene	mg/kg	0.3	MCERTS	-	-	-	-	-
Phenanthrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Anthracene	mg/kg	0.05	MCERTS	-	-	-	-	-
Carbazole	mg/kg	0.3	MCERTS	-	-	-	-	-
Dibutyl phthalate	mg/kg	0.2	MCERTS	-	-	-	-	-
Anthraquinone	mg/kg	0.3	MCERTS	-	-	-	-	-
Fluoranthene	mg/kg	0.05	MCERTS	-	-	-	-	-
Pyrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Butyl benzyl phthalate	mg/kg	0.3	ISO 17025	-	-	-	-	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	-	-	-	-
Chrysene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-	-	-	-	-

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Lab Sample Number				2029159	2029160	2029161	2029162	2029163
Sample Reference				TP152	TP151	DS128	TP163	TP149
Sample Number				2	1	2	2	2
Depth (m)				0.30	0.10	0.50	0.30	0.40
Date Sampled				17/09/2021	17/09/2021	17/09/2021	17/09/2021	17/09/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	-	-	-	-

Pesticide and Herbicide Screen

GCMS Pesticide Screen		N/A	NONE	-	None Detected	-	-	None Detected

Acid Herbicides

2,3,6-TBA	µg/kg	50	NONE	-	< 50	-	-	< 50
2,4,5-T	µg/kg	10	NONE	-	< 10	-	-	< 10
2,4,5-TP (Fenoprop)	µg/kg	10	NONE	-	< 10	-	-	< 10
2,4-D	µg/kg	10	NONE	-	< 10	-	-	< 10
2,4-DB	µg/kg	10	NONE	-	< 10	-	-	< 10
4-CPA	µg/kg	20	NONE	-	< 20	-	-	< 20
Bromacil	µg/kg	10	NONE	-	< 10	-	-	< 10
Bromoxynil	µg/kg	10	NONE	-	< 10	-	-	< 10
Clopyralid	µg/kg	100	NONE	-	< 100	-	-	< 100
Dicamba	µg/kg	20	NONE	-	< 20	-	-	< 20
Diclofop	µg/kg	10	NONE	-	< 10	-	-	< 10
Dichlorprop	µg/kg	10	NONE	-	< 10	-	-	< 10
Dinoseb	µg/kg	10	NONE	-	< 10	-	-	< 10
Flamprop	µg/kg	50	NONE	-	< 50	-	-	< 50
Flamprop-Isopropyl	µg/kg	10	NONE	-	< 10	-	-	< 10
Ioxynil	µg/kg	10	NONE	-	< 10	-	-	< 10
MCPA	µg/kg	10	NONE	-	< 10	-	-	< 10
MCPB	µg/kg	20	NONE	-	< 20	-	-	< 20
MCPP (Mecoprop)	µg/kg	10	NONE	-	< 10	-	-	< 10
Picloram	µg/kg	50	NONE	-	< 50	-	-	< 50

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number: 21-13211
Project / Site name: Oxfordshire SRFI
Your Order No: PO-1582

Lab Sample Number				2029164
Sample Reference				TP107
Sample Number				2
Depth (m)				0.40
Date Sampled				17/09/2021
Time Taken				None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**	
Stone Content	%	0.1	NONE	< 0.1
Moisture Content	%	0.01	NONE	6.1
Total mass of sample received	kg	0.001	NONE	1.0

Asbestos in Soil	Type	N/A	ISO 17025	-

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	8.2
Total Cyanide	mg/kg	1	MCERTS	< 1.0
Complex Cyanide	mg/kg	1	MCERTS	< 1.0
Free Cyanide	mg/kg	1	MCERTS	< 1.0
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.012
Total Sulphur	mg/kg	50	MCERTS	300
Organic Matter (automated)	%	0.1	MCERTS	2.7

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05
Anthracene	mg/kg	0.05	MCERTS	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05
Pyrene	mg/kg	0.05	MCERTS	< 0.05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05
Chrysene	mg/kg	0.05	MCERTS	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	< 0.80

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Lab Sample Number				2029164
Sample Reference				TP107
Sample Number				2
Depth (m)				0.40
Date Sampled				17/09/2021
Time Taken				None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**	
Heavy Metals / Metalloids				
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	14
Barium (aqua regia extractable)	mg/kg	1	MCERTS	30
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.75
Boron (water soluble)	mg/kg	0.2	MCERTS	< 0.2
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	20
Copper (aqua regia extractable)	mg/kg	1	MCERTS	7.8
Lead (aqua regia extractable)	mg/kg	1	MCERTS	9.4
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	17
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	43
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	38

Monoaromatics & Oxygenates

Benzene	µg/kg	1	MCERTS	-
Toluene	µg/kg	1	MCERTS	-
Ethylbenzene	µg/kg	1	MCERTS	-
p & m-xylene	µg/kg	1	MCERTS	-
o-xylene	µg/kg	1	MCERTS	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-

Petroleum Hydrocarbons

TPH C10 - C40	mg/kg	10	MCERTS	< 10
TPH2 (C6 - C10)	mg/kg	0.1	MCERTS	< 0.1
TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.001	MCERTS	-
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	-
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	-
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	-
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	-
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	-
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	-
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	-
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	-
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	-
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	-
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	-
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	-
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	-
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	-
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	-

VOCs

Chloromethane	µg/kg	1	ISO 17025	-
Chloroethane	µg/kg	1	NONE	-
Bromomethane	µg/kg	1	ISO 17025	-
Vinyl Chloride	µg/kg	1	NONE	-
Trichlorofluoromethane	µg/kg	1	NONE	-

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Lab Sample Number				2029164
Sample Reference				TP107
Sample Number				2
Depth (m)				0.40
Date Sampled				17/09/2021
Time Taken				None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**	
1,1-Dichloroethene	µg/kg	1	NONE	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	ISO 17025	-
Cis-1,2-dichloroethene	µg/kg	1	MCERTS	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-
1,1-Dichloroethane	µg/kg	1	MCERTS	-
2,2-Dichloropropane	µg/kg	1	MCERTS	-
Trichloromethane	µg/kg	1	MCERTS	-
1,1,1-Trichloroethane	µg/kg	1	MCERTS	-
1,2-Dichloroethane	µg/kg	1	MCERTS	-
1,1-Dichloropropene	µg/kg	1	MCERTS	-
Trans-1,2-dichloroethene	µg/kg	1	NONE	-
Benzene	µg/kg	1	MCERTS	-
Tetrachloromethane	µg/kg	1	MCERTS	-
1,2-Dichloropropane	µg/kg	1	MCERTS	-
Trichloroethene	µg/kg	1	MCERTS	-
Dibromomethane	µg/kg	1	MCERTS	-
Bromodichloromethane	µg/kg	1	MCERTS	-
Cis-1,3-dichloropropene	µg/kg	1	ISO 17025	-
Trans-1,3-dichloropropene	µg/kg	1	ISO 17025	-
Toluene	µg/kg	1	MCERTS	-
1,1,2-Trichloroethane	µg/kg	1	MCERTS	-
1,3-Dichloropropane	µg/kg	1	ISO 17025	-
Dibromochloromethane	µg/kg	1	ISO 17025	-
Tetrachloroethene	µg/kg	1	NONE	-
1,2-Dibromoethane	µg/kg	1	ISO 17025	-
Chlorobenzene	µg/kg	1	MCERTS	-
1,1,1,2-Tetrachloroethane	µg/kg	1	MCERTS	-
Ethylbenzene	µg/kg	1	MCERTS	-
p & m-Xylene	µg/kg	1	MCERTS	-
Styrene	µg/kg	1	MCERTS	-
Tribromomethane	µg/kg	1	NONE	-
o-Xylene	µg/kg	1	MCERTS	-
1,1,2,2-Tetrachloroethane	µg/kg	1	MCERTS	-
Isopropylbenzene	µg/kg	1	MCERTS	-
Bromobenzene	µg/kg	1	MCERTS	-
n-Propylbenzene	µg/kg	1	ISO 17025	-
2-Chlorotoluene	µg/kg	1	MCERTS	-
4-Chlorotoluene	µg/kg	1	MCERTS	-
1,3,5-Trimethylbenzene	µg/kg	1	ISO 17025	-
tert-Butylbenzene	µg/kg	1	MCERTS	-
1,2,4-Trimethylbenzene	µg/kg	1	ISO 17025	-
sec-Butylbenzene	µg/kg	1	MCERTS	-
1,3-Dichlorobenzene	µg/kg	1	ISO 17025	-
p-Isopropyltoluene	µg/kg	1	ISO 17025	-
1,2-Dichlorobenzene	µg/kg	1	MCERTS	-
1,4-Dichlorobenzene	µg/kg	1	MCERTS	-
Butylbenzene	µg/kg	1	MCERTS	-
1,2-Dibromo-3-chloropropane	µg/kg	1	ISO 17025	-
1,2,4-Trichlorobenzene	µg/kg	1	MCERTS	-
Hexachlorobutadiene	µg/kg	1	MCERTS	-
1,2,3-Trichlorobenzene	µg/kg	1	ISO 17025	-

Analytical Report Number: 21-13211
Project / Site name: Oxfordshire SRFI
Your Order No: PO-1582

Lab Sample Number				2029164
Sample Reference				TP107
Sample Number				2
Depth (m)				0.40
Date Sampled				17/09/2021
Time Taken				None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**	
SVOCs				
Aniline	mg/kg	0.1	NONE	-
Phenol	mg/kg	0.2	ISO 17025	-
2-Chlorophenol	mg/kg	0.1	MCERTS	-
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	-
1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	-
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	-
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	-
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	-
2-Methylphenol	mg/kg	0.3	MCERTS	-
Hexachloroethane	mg/kg	0.05	MCERTS	-
Nitrobenzene	mg/kg	0.3	MCERTS	-
4-Methylphenol	mg/kg	0.2	NONE	-
Isophorone	mg/kg	0.2	MCERTS	-
2-Nitrophenol	mg/kg	0.3	MCERTS	-
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	-
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	-
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	-
Naphthalene	mg/kg	0.05	MCERTS	-
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	-
4-Chloroaniline	mg/kg	0.1	NONE	-
Hexachlorobutadiene	mg/kg	0.1	MCERTS	-
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	-
2,4,6-Trichlorophenol	mg/kg	0.1	MCERTS	-
2,4,5-Trichlorophenol	mg/kg	0.2	MCERTS	-
2-Methylnaphthalene	mg/kg	0.1	NONE	-
2-Chloronaphthalene	mg/kg	0.1	MCERTS	-
Dimethylphthalate	mg/kg	0.1	MCERTS	-
2,6-Dinitrotoluene	mg/kg	0.1	MCERTS	-
Acenaphthylene	mg/kg	0.05	MCERTS	-
Acenaphthene	mg/kg	0.05	MCERTS	-
2,4-Dinitrotoluene	mg/kg	0.2	MCERTS	-
Dibenzofuran	mg/kg	0.2	MCERTS	-
4-Chlorophenyl phenyl ether	mg/kg	0.3	ISO 17025	-
Diethyl phthalate	mg/kg	0.2	MCERTS	-
4-Nitroaniline	mg/kg	0.2	MCERTS	-
Fluorene	mg/kg	0.05	MCERTS	-
Azobenzene	mg/kg	0.3	MCERTS	-
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	-
Hexachlorobenzene	mg/kg	0.3	MCERTS	-
Phenanthrene	mg/kg	0.05	MCERTS	-
Anthracene	mg/kg	0.05	MCERTS	-
Carbazole	mg/kg	0.3	MCERTS	-
Dibutyl phthalate	mg/kg	0.2	MCERTS	-
Anthraquinone	mg/kg	0.3	MCERTS	-
Fluoranthene	mg/kg	0.05	MCERTS	-
Pyrene	mg/kg	0.05	MCERTS	-
Butyl benzyl phthalate	mg/kg	0.3	ISO 17025	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-
Chrysene	mg/kg	0.05	MCERTS	-
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	-
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-

Analytical Report Number: 21-13211
Project / Site name: Oxfordshire SRFI
Your Order No: PO-1582

Lab Sample Number				2029164
Sample Reference				TP107
Sample Number				2
Depth (m)				0.40
Date Sampled				17/09/2021
Time Taken				None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**	
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-

Pesticide and Herbicide Screen

GCMS Pesticide Screen		N/A	NONE	-

Acid Herbicides

2,3,6-TBA	µg/kg	50	NONE	-
2,4,5-T	µg/kg	10	NONE	-
2,4,5-TP (Fenoprop)	µg/kg	10	NONE	-
2,4-D	µg/kg	10	NONE	-
2,4-DB	µg/kg	10	NONE	-
4-CPA	µg/kg	20	NONE	-
Bromacil	µg/kg	10	NONE	-
Bromoxynil	µg/kg	10	NONE	-
Clopyralid	µg/kg	100	NONE	-
Dicamba	µg/kg	20	NONE	-
Diclofop	µg/kg	10	NONE	-
Dichlorprop	µg/kg	10	NONE	-
Dinoseb	µg/kg	10	NONE	-
Flamprop	µg/kg	50	NONE	-
Flamprop-Isopropyl	µg/kg	10	NONE	-
Ioxynil	µg/kg	10	NONE	-
MCPA	µg/kg	10	NONE	-
MCPB	µg/kg	20	NONE	-
MCPP (Mecoprop)	µg/kg	10	NONE	-
Picloram	µg/kg	50	NONE	-

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number: 21-13211
Project / Site name: Oxfordshire SRFI

Your Order No: PO-1582

Lab Sample Number				2029165	2029166	2029167	2029168	2029169
Sample Reference				TP115	TP120	TP152	DS128	TP163
Sample Number				3	4	2	2	2
Depth (m)				1.20	2.00	0.30	0.50	0.30
Date Sampled				17/09/2021	17/09/2021	17/09/2021	17/09/2021	17/09/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Leachate Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
General Inorganics								
pH	pH Units	N/A	ISO 17025	8.0	8.2	8.3	8.1	8.1
Total Cyanide	µg/l	10	ISO 17025	< 10	< 10	< 10	< 10	< 10
Sulphate as SO4	mg/l	0.1	ISO 17025	3.1	12.0	23.3	3.9	2.8
Heavy Metals / Metalloids								
Arsenic (dissolved)	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	6.8	< 1.0
Barium (dissolved)	µg/l	0.05	ISO 17025	13	9.0	20	12	10
Beryllium (dissolved)	µg/l	0.2	ISO 17025	< 0.2	< 0.2	0.3	0.4	0.8
Boron (dissolved)	µg/l	10	ISO 17025	47	32	40	29	33
Cadmium (dissolved)	µg/l	0.08	ISO 17025	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08
Chromium (dissolved)	µg/l	0.4	ISO 17025	1.6	0.4	3.0	0.7	1.1
Copper (dissolved)	µg/l	0.7	ISO 17025	17	2.8	17	0.8	3.5
Lead (dissolved)	µg/l	1	ISO 17025	5.3	< 1.0	3.9	1.9	1.5
Mercury (dissolved)	µg/l	0.5	ISO 17025	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Nickel (dissolved)	µg/l	0.3	ISO 17025	3.3	3.4	6.7	3.4	2.5
Selenium (dissolved)	µg/l	4	ISO 17025	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Vanadium (dissolved)	µg/l	1.7	ISO 17025	< 1.7	< 1.7	< 1.7	< 1.7	< 1.7
Zinc (dissolved)	µg/l	0.4	ISO 17025	8.9	4.6	9.0	4.2	4.6

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number: 21-13211
Project / Site name: Oxfordshire SRFI

Your Order No: PO-1582

Lab Sample Number				2029170
Sample Reference				TP107
Sample Number				2
Depth (m)				0.40
Date Sampled				17/09/2021
Time Taken				None Supplied
Analytical Parameter (Leachate Analysis)	**Units**	**Limit of detection**	**Accreditation Status**	

General Inorganics

pH	pH Units	N/A	ISO 17025	7.8
Total Cyanide	µg/l	10	ISO 17025	< 10
Sulphate as SO4	mg/l	0.1	ISO 17025	2.6

Heavy Metals / Metalloids

Arsenic (dissolved)	µg/l	1	ISO 17025	< 1.0
Barium (dissolved)	µg/l	0.05	ISO 17025	10
Beryllium (dissolved)	µg/l	0.2	ISO 17025	0.8
Boron (dissolved)	µg/l	10	ISO 17025	30
Cadmium (dissolved)	µg/l	0.08	ISO 17025	< 0.08
Chromium (dissolved)	µg/l	0.4	ISO 17025	0.8
Copper (dissolved)	µg/l	0.7	ISO 17025	35
Lead (dissolved)	µg/l	1	ISO 17025	< 1.0
Mercury (dissolved)	µg/l	0.5	ISO 17025	< 0.5
Nickel (dissolved)	µg/l	0.3	ISO 17025	2.9
Selenium (dissolved)	µg/l	4	ISO 17025	< 4.0
Vanadium (dissolved)	µg/l	1.7	ISO 17025	< 1.7
Zinc (dissolved)	µg/l	0.4	ISO 17025	17

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number : 21-13211
Project / Site name: Oxfordshire SRFI

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
2029155	TP115	2	0.4	Brown loam with gravel and vegetation.
2029156	TP115	3	1.2	Brown loam and clay with gravel.
2029157	TP115	4	1.4	Brown loam and sand with gravel and vegetation.
2029158	TP120	4	2	Brown clay and loam with gravel and vegetation.
2029159	TP152	2	0.3	Brown loam and clay with gravel and vegetation.
2029160	TP151	1	0.1	Brown loam and clay with gravel and vegetation.
2029161	DS128	2	0.5	Brown loam and clay with gravel and vegetation.
2029162	TP163	2	0.3	Brown clay and loam with gravel.
2029163	TP149	2	0.4	Brown loam and clay with gravel and vegetation.
2029164	TP107	2	0.4	Brown loam and clay with gravel and vegetation.

Analytical Report Number : 21-13211
Project / Site name: Oxfordshire SRFI

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Sulphate, water soluble, in soil (16hr extraction)	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In house method.	L038-PL	D	MCERTS
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
BS EN 12457-1 (2:1) Leachate Prep	2:1 (as recieved, moisture adjusted) end over end extraction with water for 24 hours. Eluate filtered prior to analysis.	In-house method based on BSEN12457-1.	L043-PL	W	NONE
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Metals by ICP-OES in leachate	Determination of metals in leachate by acidification followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Boron in leachate	Determination of boron in leachate. Sample acidified and followed by ICP-OES.	In-house method based on MEWAM	L039-PL	W	ISO 17025
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES.	In-house method based on Second Site Properties version 3	L038-PL	D	MCERTS
Complex Cyanide in soil	Determination of complex cyanide by calculation.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	MCERTS
Free cyanide in soil	Determination of free cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	MCERTS
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In house method.	L099-PL	D	MCERTS
pH at 20oC in leachate	Determination of pH in leachate by electrometric measurement.	In house method.	L005-PL	W	ISO 17025
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Total Sulphur in soil	Determination of total sulphur in soil by extraction with aqua-regia, potassium bromide/bromate followed by ICP-OES.	In house method.	L038-PL	D	MCERTS

Analytical Report Number : 21-13211
Project / Site name: Oxfordshire SRFI

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Semi-volatile organic compounds in soil	Determination of semi-volatile organic compounds in soil by extraction in dichloromethane and hexane followed by GC-MS.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
TPH2 (Soil)	Determination of hydrocarbons C6-C10 by headspace GC-MS.	In-house method based on USEPA8260	L088-PL	W	MCERTS
Total cyanide in leachate	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	ISO 17025
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
Volatile organic compounds in soil	Determination of volatile organic compounds in soil by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	MCERTS
BTEX and MTBE in soil (Monoaromatics)	Determination of BTEX in soil by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	MCERTS
TPHCWG (Soil)	Determination of hexane extractable hydrocarbons in soil by GC-MS/GC-FID.	In-house method with silica gel split/clean up.	L088/76-PL	W	MCERTS
Acid Herbicides by LC-MS	Detemination of Acid Herbicides by LC MS	In-house method	L057B-PL	W	NONE
GC Pesticide Screen (TIC)	Analysis of unknown pesticides by GCMS	GC Pesticide Screen (TIC)	L064B	D	NONE
TPH Banding in Soil by FID	Determination of hexane extractable hydrocarbons in soil by GC-FID.	In-house method, TPH with carbon banding and silica gel split/cleanup.	L076-PL	W	MCERTS
Sulphate in leachates	Determination of sulphate in leachate by acidification followed by ICP-OES.	In-house method based on MEWAM 1986 Methods for the Determination of Metals in Soil""	L039-PL	W	ISO 17025
Organic matter (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In house method.	L009-PL	D	MCERTS

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.
For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Sample Deviation Report

Analytical Report Number : 21-13211
Project / Site name: Oxfordshire SRFI

Sample ID	Other ID	Sample Type	Lab Sample Number	Sample Deviation	Test Name	Test Ref	Test Deviation
DS128	2	S	2029161	c	Free cyanide in soil	L080-PL	c
DS128	2	S	2029161	c	Complex Cyanide in soil	L080-PL	c
DS128	2	S	2029161	c	Total cyanide in soil	L080-PL	c
TP107	2	S	2029164	c	Free cyanide in soil	L080-PL	c
TP107	2	S	2029164	c	Complex Cyanide in soil	L080-PL	c
TP107	2	S	2029164	c	Total cyanide in soil	L080-PL	c
TP115	2	S	2029155	c	Free cyanide in soil	L080-PL	c
TP115	2	S	2029155	c	Complex Cyanide in soil	L080-PL	c
TP115	2	S	2029155	c	Total cyanide in soil	L080-PL	c
TP115	3	S	2029156	c	Free cyanide in soil	L080-PL	c
TP115	3	S	2029156	c	Complex Cyanide in soil	L080-PL	c
TP115	3	S	2029156	c	Total cyanide in soil	L080-PL	c
TP115	4	S	2029157	c	Free cyanide in soil	L080-PL	c
TP115	4	S	2029157	c	Complex Cyanide in soil	L080-PL	c
TP115	4	S	2029157	c	Total cyanide in soil	L080-PL	c
TP120	4	S	2029158	c	Free cyanide in soil	L080-PL	c
TP120	4	S	2029158	c	Complex Cyanide in soil	L080-PL	c
TP120	4	S	2029158	c	Total cyanide in soil	L080-PL	c
TP149	2	S	2029163	c	Free cyanide in soil	L080-PL	c
TP149	2	S	2029163	c	Complex Cyanide in soil	L080-PL	c
TP149	2	S	2029163	c	Total cyanide in soil	L080-PL	c
TP151	1	S	2029160	c	Free cyanide in soil	L080-PL	c
TP151	1	S	2029160	c	Complex Cyanide in soil	L080-PL	c
TP151	1	S	2029160	c	Total cyanide in soil	L080-PL	c
TP152	2	S	2029159	c	Free cyanide in soil	L080-PL	c
TP152	2	S	2029159	c	Complex Cyanide in soil	L080-PL	c
TP152	2	S	2029159	c	Total cyanide in soil	L080-PL	c
TP163	2	S	2029162	c	Free cyanide in soil	L080-PL	c
TP163	2	S	2029162	c	Complex Cyanide in soil	L080-PL	c
TP163	2	S	2029162	c	Total cyanide in soil	L080-PL	c

Key: **a** - No sampling date **b** - Incorrect container
c - Holding time **d** - Headspace **e** - Temperature

UKAS TESTING 4041

Analytical i2 Environmental Science

Results

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Analytical Report Number : 21-13478

Project / Site name:	Oxfordshire SRFI	**Samples received on:**	30/09/2021
Your job number:	C10172	**Samples instructed on/ Analysis started on:**	30/09/2021
Your order number:	1585	**Analysis completed by:**	07/10/2021
Report Issue Number:	1	**Report issued on:**	07/10/2021
Samples Analysed:	4 water samples		

Signed:

Joanna Wawrzeczko
Technical Reviewer (Reporting Team)
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils - 4 weeks from reporting
leachates - 2 weeks from reporting
waters - 2 weeks from reporting
asbestos - 6 months from reporting

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Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.

Analytical Report Number: 21-13478
Project / Site name: Oxfordshire SRFI

Your Order No: 1585

Lab Sample Number				2030627	2030628	2030629	2030630
Sample Reference				RO02	RO03	RO07	RO08
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				6.00	8.00	6.40	7.50
Date Sampled				28/09/2021	28/09/2021	28/09/2021	28/09/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**				
General Inorganics							
pH	pH Units	N/A	ISO 17025	7.4	7.3	7.6	7.5
Electrical Conductivity at 20 °C	µS/cm	10	ISO 17025	480	550	460	450
Total Cyanide	µg/l	10	ISO 17025	< 10	< 10	< 10	< 10
Sulphate as SO4	mg/l	0.045	ISO 17025	30.1	30.5	34.2	29.8
Ammoniacal Nitrogen as N	µg/l	15	ISO 17025	100	57	290	200
Dissolved Organic Carbon (DOC)	mg/l	0.1	ISO 17025	2.26	3.32	1.93	1.90
Total Phenols							
Total Phenols (monohydric)	µg/l	10	ISO 17025	< 10	< 10	< 10	< 10
Speciated PAHs							
Naphthalene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Fluorene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Chrysene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Total PAH							
Total EPA-16 PAHs	µg/l	0.16	ISO 17025	< 0.16	< 0.16	< 0.16	< 0.16

Analytical Report Number: 21-13478
Project / Site name: Oxfordshire SRFI

Your Order No: 1585

Lab Sample Number				2030627	2030628	2030629	2030630
Sample Reference				RO02	RO03	RO07	RO08
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				6.00	8.00	6.40	7.50
Date Sampled				28/09/2021	28/09/2021	28/09/2021	28/09/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**				
Heavy Metals / Metalloids							
Boron (dissolved)	µg/l	10	ISO 17025	260	52	110	140
Calcium (dissolved)	mg/l	0.012	ISO 17025	89	130	96	89
Chromium (hexavalent)	µg/l	5	ISO 17025	< 5.0	< 5.0	< 5.0	< 5.0
Arsenic (dissolved)	µg/l	0.15	ISO 17025	0.25	0.29	< 0.15	0.20
Barium (dissolved)	µg/l	0.06	ISO 17025	69	23	22	41
Beryllium (dissolved)	µg/l	0.1	ISO 17025	< 0.1	< 0.1	< 0.1	< 0.1
Cadmium (dissolved)	µg/l	0.02	ISO 17025	< 0.02	< 0.02	< 0.02	< 0.02
Chromium (dissolved)	µg/l	0.2	ISO 17025	1.9	2.8	1.7	1.9
Copper (dissolved)	µg/l	0.5	ISO 17025	2.0	1.9	1.5	2.2
Lead (dissolved)	µg/l	0.2	ISO 17025	< 0.2	< 0.2	< 0.2	< 0.2
Mercury (dissolved)	µg/l	0.05	ISO 17025	< 0.05	< 0.05	< 0.05	< 0.05
Nickel (dissolved)	µg/l	0.5	ISO 17025	2.9	6.1	1.5	2.1
Selenium (dissolved)	µg/l	0.6	ISO 17025	< 0.6	0.6	< 0.6	< 0.6
Vanadium (dissolved)	µg/l	0.2	ISO 17025	0.4	0.3	0.3	0.6
Zinc (dissolved)	µg/l	0.5	ISO 17025	3.8	6.3	2.2	3.6
Petroleum Hydrocarbons							
TPH1 (C10 - C40)	µg/l	10	NONE	< 10	< 10	< 10	< 10
TPH2 (C6 - C10)	µg/l	10	ISO 17025	< 10	< 10	< 10	< 10

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number : 21-13478
Project / Site name: Oxfordshire SRFI

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Metals in water by ICP-MS (dissolved)	Determination of metals in water by acidification followed by ICP-MS. Accredited Matrices: SW, GW, PW except B=SW,GW, Hg=SW,PW, Al=SW,PW.	In-house method based on USEPA Method 6020 & 200.8 "for the determination of trace elements in water by ICP-MS.	L012-PL	W	ISO 17025
Metals in water by ICP-OES (dissolved)	Determination of metals in water by acidification followed by ICP-OES. Accredited Matrices SW, GW, PW, PrW.(Al, Cu,Fe,Zn).	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Boron in water	Determination of boron in water by acidification followed by ICP-OES. Accredited matrices: SW PW GW	In-house method based on MEWAM	L039-PL	W	ISO 17025
Hexavalent chromium in water	Determination of hexavalent chromium in water by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method by continuous flow analyser. Accredited Matrices SW, GW, PW.	L080-PL	W	ISO 17025
Electrical conductivity at 20oC of water	Determination of electrical conductivity in water by electrometric measurement. Accredited Matrices SW, GW, PW	In-house method	L031-PL	W	ISO 17025
Monohydric phenols in water	Determination of phenols in water by continuous flow analyser. Accredited matrices: SW PW GW	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	ISO 17025
Speciated EPA-16 PAHs in water	Determination of PAH compounds in water by extraction in dichloromethane followed by GC-MS with the use of surrogate and internal standards. Accredited matrices: SW PW GW	In-house method based on USEPA 8270	L102B-PL	W	ISO 17025
Sulphate in water	Determination of sulphate in water after filtration by acidification followed by ICP-OES. Accredited Matrices SW, GW, PW.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
TPH1 (Waters)	Determination of dichloromethane extractable hydrocarbons in water by GC-MS.	In-house method	L070-PL	W	NONE
TPH2 (Waters)	Determination of hydrocarbons C6-C10 by headspace GC-MS. Accredited Matrices SW, PW. GW.	In-house method based on USEPA8260	L088-PL	W	ISO 17025
Total cyanide in water	Determination of total cyanide by distillation followed by colorimetry. Accredited matrices: SW PW GW	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	ISO 17025
Dissolved Organic Carbon in water	Determination of dissolved inorganic carbon in water by TOC/DOC NDIR Analyser.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L037-PL	W	ISO 17025
Ammoniacal Nitrogen as N in water	Determination of Ammonium/Ammonia/ Ammoniacal Nitrogen by the discrete analyser (colorimetric) salicylate/nitroprusside method. Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	ISO 17025
pH at 20oC in water (automated)	Determination of pH in water by electrometric measurement. Accredited matrices: SW PW GW	In house method.	L099-PL	W	ISO 17025

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.
For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Results

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Analytical Report Number : 21-13541

Project / Site name:	Oxfordshire SRFI	**Samples received on:**	30/09/2021
Your job number:	C10172	**Samples instructed on/ Analysis started on:**	30/09/2021
Your order number:	PO-1582	**Analysis completed by:**	07/10/2021
Report Issue Number:	1	**Report issued on:**	07/10/2021
Samples Analysed:	1 leachate sample - 1 soil sample		

Signed:

Joanna Wawrzeczko
Technical Reviewer (Reporting Team)
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils - 4 weeks from reporting
leachates - 2 weeks from reporting
waters - 2 weeks from reporting
asbestos - 6 months from reporting

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Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.

Analytical Report Number: 21-13541
Project / Site name: Oxfordshire SRFI
Your Order No: PO-1582

Lab Sample Number				2030981
Sample Reference				SA10
Sample Number				2
Depth (m)				0.40
Date Sampled				23/09/2021
Time Taken				None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**	
Stone Content	%	0.1	NONE	< 0.1
Moisture Content	%	0.01	NONE	7.8
Total mass of sample received	kg	0.001	NONE	1.0

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	8.2
Total Cyanide	mg/kg	1	MCERTS	< 1.0
Complex Cyanide	mg/kg	1	MCERTS	< 1.0
Free Cyanide	mg/kg	1	MCERTS	< 1.0
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.015
Total Sulphur	mg/kg	50	MCERTS	360
Organic Matter (automated)	%	0.1	MCERTS	1.6

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05
Anthracene	mg/kg	0.05	MCERTS	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05
Pyrene	mg/kg	0.05	MCERTS	< 0.05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05
Chrysene	mg/kg	0.05	MCERTS	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	< 0.80

Analytical Report Number: 21-13541
Project / Site name: Oxfordshire SRFI
Your Order No: PO-1582

Lab Sample Number				2030981
Sample Reference				SA10
Sample Number				2
Depth (m)				0.40
Date Sampled				23/09/2021
Time Taken				None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**	
Heavy Metals / Metalloids				
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	11
Barium (aqua regia extractable)	mg/kg	1	MCERTS	46
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.74
Boron (water soluble)	mg/kg	0.2	MCERTS	0.8
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	20
Copper (aqua regia extractable)	mg/kg	1	MCERTS	8.4
Lead (aqua regia extractable)	mg/kg	1	MCERTS	9.6
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	16
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	35
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	34
Petroleum Hydrocarbons				
TPH C10 - C40	mg/kg	10	MCERTS	< 10
TPH2 (C6 - C10)	mg/kg	0.1	MCERTS	< 0.1

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number: 21-13541
Project / Site name: Oxfordshire SRFI

Your Order No: PO-1582

Lab Sample Number				2030982
Sample Reference				SA10
Sample Number				2
Depth (m)				0.40
Date Sampled				23/09/2021
Time Taken				None Supplied
Analytical Parameter (Leachate Analysis)	**Units**	**Limit of detection**	**Accreditation Status**	

General Inorganics

pH	pH Units	N/A	ISO 17025	8.1
Total Cyanide	µg/l	10	ISO 17025	< 10
Sulphate as SO4	mg/l	0.1	ISO 17025	2.5

Heavy Metals / Metalloids

Arsenic (dissolved)	µg/l	1	ISO 17025	< 1.0
Barium (dissolved)	µg/l	0.05	ISO 17025	7.6
Beryllium (dissolved)	µg/l	0.2	ISO 17025	0.8
Boron (dissolved)	µg/l	10	ISO 17025	18
Cadmium (dissolved)	µg/l	0.08	ISO 17025	< 0.08
Chromium (dissolved)	µg/l	0.4	ISO 17025	0.7
Copper (dissolved)	µg/l	0.7	ISO 17025	3.5
Lead (dissolved)	µg/l	1	ISO 17025	1.8
Mercury (dissolved)	µg/l	0.5	ISO 17025	< 0.5
Nickel (dissolved)	µg/l	0.3	ISO 17025	2.6
Selenium (dissolved)	µg/l	4	ISO 17025	< 4.0
Vanadium (dissolved)	µg/l	1.7	ISO 17025	< 1.7
Zinc (dissolved)	µg/l	0.4	ISO 17025	10

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number : 21-13541
Project / Site name: Oxfordshire SRFI

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
2030981	SA10	2	0.4	Brown clay and sand with gravel.

Analytical Report Number : 21-13541
Project / Site name: Oxfordshire SRFI

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Sulphate, water soluble, in soil (16hr extraction)	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In house method.	L038-PL	D	MCERTS
BS EN 12457-1 (2:1) Leachate Prep	2:1 (as recieved, moisture adjusted) end over end extraction with water for 24 hours. Eluate filtered prior to analysis.	In-house method based on BSEN12457-1.	L043-PL	W	NONE
Metals by ICP-OES in leachate	Determination of metals in leachate by acidification followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Boron in leachate	Determination of boron in leachate. Sample acidified and followed by ICP-OES.	In-house method based on MEWAM	L039-PL	W	ISO 17025
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES.	In-house method based on Second Site Properties version 3	L038-PL	D	MCERTS
Complex Cyanide in soil	Determination of complex cyanide by calculation.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	MCERTS
Free cyanide in soil	Determination of free cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	MCERTS
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In house method.	L099-PL	D	MCERTS
pH at 20oC in leachate	Determination of pH in leachate by electrometric measurement.	In house method.	L005-PL	W	ISO 17025
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Total Sulphur in soil	Determination of total sulphur in soil by extraction with aqua-regia, potassium bromide/bromate followed by ICP-OES.	In house method.	L038-PL	D	MCERTS
TPH2 (Soil)	Determination of hydrocarbons C6-C10 by headspace GC-MS.	In-house method based on USEPA8260	L088-PL	W	MCERTS

Analytical Report Number : 21-13541
Project / Site name: Oxfordshire SRFI

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Total cyanide in leachate	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	ISO 17025
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
TPH Banding in Soil by FID	Determination of hexane extractable hydrocarbons in soil by GC-FID.	In-house method, TPH with carbon banding and silica gel split/cleanup.	L076-PL	W	MCERTS
Sulphate in leachates	Determination of sulphate in leachate by acidification followed by ICP-OES.	In-house method based on MEWAM 1986 Methods for the Determination of Metals in Soil""	L039-PL	W	ISO 17025
Organic matter (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In house method.	L009-PL	D	MCERTS

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.
For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Analytical Report Number : 21-13541
Project / Site name: Oxfordshire SRFI

Sample ID	Other ID	Sample Type	Lab Sample Number	Sample Deviation	Test Name	Test Ref	Test Deviation
SA10	2	S	2030981	c	Free cyanide in soil	L080-PL	c
SA10	2	S	2030981	c	Complex Cyanide in soil	L080-PL	c
SA10	2	S	2030981	c	Total cyanide in soil	L080-PL	c

Results

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Analytical Report Number : 21-14111

Project / Site name:	Oxfordshire	**Samples received on:**	04/10/2021
Your job number:	C10172	**Samples instructed on/ Analysis started on:**	04/10/2021
Your order number:	PO-1586	**Analysis completed by:**	08/10/2021
Report Issue Number:	1	**Report issued on:**	08/10/2021
Samples Analysed:	11 soil samples		

Signed:

Joanna Wawrzeczko
Technical Reviewer (Reporting Team)
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting

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Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.

Analytical Report Number: 21-14111
Project / Site name: Oxfordshire
Your Order No: PO-1586

Lab Sample Number				2034394	2034395	2034396	2034397	2034398
Sample Reference				TP105	TP110	TP117	TP123	TP129
Sample Number				1	1	1	1	1
Depth (m)				0.40	0.40	0.80	0.50	0.50
Date Sampled				15/09/2021	17/09/2021	17/09/2021	15/09/2021	14/09/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	4.3	9.6	4.3	11	9.7
Total mass of sample received	kg	0.001	NONE	1.5	0.50	1.5	1.5	1.5

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	8.3	7.3	8.0	8.1	7.9
Total Sulphate as SO4	%	0.005	MCERTS	0.077	0.034	0.085	0.013	0.044
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.014	0.0064	0.015	0.0079	0.037
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	14.0	6.4	15.3	7.9	37.0
Total Sulphur	%	0.005	MCERTS	0.044	0.022	0.038	0.012	0.036

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number: 21-14111
Project / Site name: Oxfordshire
Your Order No: PO-1586

Lab Sample Number				2034399	2034400	2034401	2034402	2034403
Sample Reference				TP131	TP138	TP145	TP149	TP160
Sample Number				1	1	1	1	1
Depth (m)				0.50	0.50	0.50	0.50	0.50
Date Sampled				14/09/2021	16/09/2021	16/09/2021	21/09/2021	21/09/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	7.4	19	6.6	6.1	9.7
Total mass of sample received	kg	0.001	NONE	1.5	1.5	1.5	1.5	1.5

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	7.8	8.5	8.4	8.5	8.3
Total Sulphate as SO4	%	0.005	MCERTS	0.096	0.030	0.084	0.089	0.088
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.18	0.0029	0.0035	0.0035	0.0096
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	176	2.9	3.5	3.5	9.6
Total Sulphur	%	0.005	MCERTS	0.057	0.016	0.043	0.037	0.050

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number: 21-14111
Project / Site name: Oxfordshire
Your Order No: PO-1586

Lab Sample Number				2034404
Sample Reference				TP168
Sample Number				1
Depth (m)				0.60
Date Sampled				20/09/2021
Time Taken				None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**	
Stone Content	%	0.1	NONE	< 0.1
Moisture Content	%	0.01	NONE	6.5
Total mass of sample received	kg	0.001	NONE	1.5

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	8.6
Total Sulphate as SO4	%	0.005	MCERTS	0.074
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.0058
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	5.8
Total Sulphur	%	0.005	MCERTS	0.039

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number : 21-14111
Project / Site name: Oxfordshire

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
2034394	TP105	1	0.4	Brown loam and clay with gravel and vegetation.
2034395	TP110	1	0.4	Brown loam and clay with gravel and vegetation.
2034396	TP117	1	0.8	Brown loam and clay with gravel and vegetation.
2034397	TP123	1	0.5	Brown loam and clay with vegetation.
2034398	TP129	1	0.5	Brown loam and clay with gravel and vegetation.
2034399	TP131	1	0.5	Brown loam and clay with gravel and vegetation.
2034400	TP138	1	0.5	Brown loam and clay with vegetation.
2034401	TP145	1	0.5	Brown loam and clay with gravel.
2034402	TP149	1	0.5	Brown loam and clay with gravel and vegetation.
2034403	TP160	1	0.5	Brown loam and clay with gravel and vegetation.
2034404	TP168	1	0.6	Brown clay and sand with gravel.

Analytical Report Number : 21-14111
Project / Site name: Oxfordshire

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In house method.	L099-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Total Sulphate in soil as %	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.	In house method.	L038-PL	D	MCERTS
Total Sulphur in soil as %	Determination of total sulphur in soil by extraction with aqua-regia, potassium bromide/bromate followed by ICP-OES.	In house method.	L038-PL	D	MCERTS
Sulphate, water soluble, in soil (16hr extraction)	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In house method.	L038-PL	D	MCERTS
Sulphate, water soluble, in soil	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In house method.	L038-PL	D	MCERTS

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.
For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

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Appendix 3: Gas and Groundwater Monitoring Results

BWB GAS AND GROUNDWATER MONITORING

Site:		Oxfordshire RFI
Client:		
Job No.:		NTH2479
Date:		28 September 2021
Start / End Time:		9:20 - 10:20 AM
Engineer:		JM
Monitoring Equipment:	Gas Meter ID	
	PID ID	
	Dip Tape	
	Other	

NR = Not Recorded
Dry = No Groundwater

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Weather Conditions	Start	End
(Dry / Raining)		
Wind Strength (m/s)		
Wind Direction (from)		
Temperature (°C)	10.0	10.0
Barometric Pressure (h Pa / mB)	1008.0	1003
App 12 Hour Pressure (h Pa / mB)		
12 Hour Pressure Trend	rising	
PID - Air		
PID - Calibration Gas		

Location Reference	Relative Pressure (Pa)	Flow (l/hr)		Methane (%v/v)		Carbon Dioxide (%v/v)		Oxygen (%v/v)		Hydrogen Sulphide (ppm)	Carbon Monoxide (ppm)	PID (ppm)	Depth to water (m)	Base of Response Zone (m)	Free-Phase Product Level Top (m)	Groundwater Elevation (m AOD)	Notes
		Peak	Steady	Peak	Steady	Peak	Steady	Min	Steady								
Ambient Air Start (Calibration)																	
Ambient Air Finish (Calibration)																	
DS101	<0.1	0.4	0.4	<0.1	<0.1	1.1	1.1	20.6	20.6	1.0	<1	<0.1	Dry	1.00			
DS102	0.1	0.3	0.3	<0.1	<0.1	1.6	1.6	20.0	20.0	1.0	<1	<0.1	Dry	1.10			
DS103	0.1	0.3	0.2	<0.1	<0.1	0.5	0.5	21.6	21.6	1.0	<1	<0.1	Dry	1.10			
DS104	0.1	<0.1	<0.1	<0.1	<0.1	0.8	0.7	21.4	21.5	1.0	<1	<0.1	Dry	0.90			
DS105	0.1	0.3	0.3	<0.1	<0.1	0.7	0.6	21.2	21.4	1.0	<1	<0.1	Dry	1.05			
DS106	0.1	<0.1	<0.1	<0.1	<0.1	0.6	0.6	21.1	21.1	1.0	<1	<0.1	Dry	0.95			
DS107	0.1	0.3	0.0	<0.1	<0.1	0.3	0.3	21.6	21.7	1.0	<1	<0.1	Dry	0.99			
DS108	0.1	0.0	0.0	<0.1	<0.1	0.7	0.7	20.9	20.9	1.0	<1	<0.1	Dry	1.00			
DS110	<0.1	6.1	6.1	<0.1	<0.1	0.2	0.2	21.8	21.9	1.0	<1	<0.1	0.60	3.00		107.52	
DS111	<0.1	0.0	0.0	<0.1	<0.1	0.6	0.6	21.7	21.7	1.0	<1	<0.1	Dry	0.86			
DS112	<0.1	0.3	0.3	<0.1	<0.1	0.6	0.6	21.3	21.3	1.0	<1	<0.1	Dry	0.95			
DS113	<0.1	0.3	0.3	<0.1	<0.1	0.7	0.7	21.3	21.3	1.0	<1	<0.1	Dry	1.10			
DS114	<0.1	0.2	0.2	<0.1	<0.1	0.8	0.8	21.3	21.4	1.0	<1	<0.1	Dry	1.10			
DS115*	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	Dry	1.00			
DS117	0.1	0.2	0.2	<0.1	<0.1	0.3	0.3	21.7	21.8	1.0	<1	<0.1	Dry	0.80			
DS118	<0.1	0.3	0.3	<0.1	<0.1	0.6	0.6	21.6	21.6	1.0	<1	<0.1	Dry	1.00			
DS120	<0.1	<0.1	<0.1	<0.1	<0.1	1.0	0.9	20.9	20.9	1.0	<1	<0.1	Dry	0.90			
DS121	<0.1	<0.1	<0.1	<0.1	<0.1	1.4	1.4	20.8	21.0	1.0	<1	<0.1	Dry	1.01			
DS122	<0.1	<0.1	<0.1	<0.1	<0.1	0.9	0.9	19.5	20.8	1.0	<1	<0.1	Dry	0.87			
DS123	<0.1	0.1	0.1	<0.1	<0.1	1.2	1.2	19.2	19.2	1.0	<1	<0.1	Dry	1.75			
DS125	<0.1	<0.1	<0.1	<0.1	<0.1	1.2	1.2	20.9	20.9	1.0	<1	<0.1	Dry	0.98			
DS128	<0.1	<0.1	<0.1	<0.1	<0.1	1.0	0.1	21.5	20.9	1.0	<1	<0.1	Dry	1.61			
DS130	<0.1	<0.1	<0.1	<0.1	<0.1	1.3	1.2	20.5	20.6	1.0	<1	<0.1	Dry	0.96			
RO01	<0.1	0.3	0.3	<0.1	<0.1	0.7	0.7	20.8	20.8	1.0	<1	<0.1	5.75	10.00		113.31	
RO02	<0.1	0.1	0.0	<0.1	<0.1	0.4	0.3	21.2	21.1	1.0	<1	<0.1	4.65	10.04		112.59	
RO03	<0.1	0.1	0.1	<0.1	<0.1	0.7	0.3	20.9	21.1	1.0	<1	<0.1	4.15	10.00		115.05	
RO04	<0.1	0.2	0.2	<0.1	<0.1	0.2	0.2	21.5	21.7	1.0	<1	<0.1	3.00	10.15		107.30	
RO05*	**NR**	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	3.65	10.00		107.02	Tap underwater
RO06	<0.1	0.4	0.4	<0.1	<0.1	0.0	0.0	21.4	21.4	1.0	<1	<0.1	5.80	10.00		107.84	
RO07	<0.1	<0.1	<0.1	<0.1	<0.1	1.4	0.2	17.8	21.6	1.0	<1	<0.1	3.90	10.00		93.68	
RO08	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	0.1	20.7	20.7	1.0	<1	<0.1	3.70	10.00		114.04	

BWB GAS AND GROUNDWATER MONITORING

Site:		Oxfordshire RFI
Client:		0
Job No.:		NTH2479
Date:		04/10/2021
Start / End Time:		08:30 - 14:55 am
Engineer:		HBW
Monitoring Equipment:	Gas Meter ID	
	PID ID	
	Dip Tape	
	Other	

NR = Not Recorded
Dry = No Groundwater

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Weather Conditions	Start	End
(Dry / Raining)		
Wind Strength (m/s)		
Wind Direction (from)		
Temperature (°C)		
Barometric Pressure (h Pa / mB)	1000.0	999.0
App 12 Hour Pressure (h Pa / mB)	996- 994	
12 Hour Pressure Trend	falling	
PID - Air		
PID - Calibration Gas		

Location Reference	Relative Pressure (Pa)	Flow (l/hr)		Methane (%v/v)		Carbon Dioxide (%v/v)		Oxygen (%v/v)		Hydrogen Sulphide (ppm)	Carbon Monoxide (ppm)	PID (ppm)	Depth to water (m)	Base of Response Zone (m)	Free-Phase Product Level Top (m)	Groundwater Elevation (m AOD)	Notes
		Peak	Steady	Peak	Steady	Peak	Steady	Min	Steady								
Ambient Air Start (Calibration)								21.1									
Ambient Air Finish (Calibration)																	
DS101	0.1	0.4	0.4	0.3	0.3	1.0	1.0	19.5	19.5	1	0	<0.1	Dry	1.00			
DS102	<0.1	0.3	0.3	0.3	0.3	1.3	1.3	18.2	18.2	1	0	0.1	Dry	1.10			
DS103	<0.1	-0.1	-0.1	0.3	0.3	0.4	0.4	20.9	21.0	1	0	0.1	Dry	1.10			
DS104	<0.1	0.3	0.3	0.3	0.3	0.8	0.7	20.6	20.7	0	0	0.1	Dry	0.90			
DS105	<0.1	0.3	0.3	0.3	0.3	0.4	0.4	20.9	21.0	1	0	<0.1	Dry	1.05			
DS106	<0.1	0.4	0.4	0.3	0.3	0.6	0.6	20.9	20.9	1	0	0.1	Dry	0.95			
DS107	<0.1	0.4	0.4	0.3	0.3	0.4	0.4	20.4	20.5	0	0	0.1	Dry	0.99			
DS108	<0.1	0.4	0.4	0.3	0.3	0.9	0.9	19.7	19.7	0	0	0.0	Dry	1.00			
DS110	<0.1	0.2	0.2	0.4	0.4	0.2	0.1	21.5	21.8	2	0	0.2	0.35	3.00		107.77	
DS111	<0.1	0.0	0.0	0.3	0.3	0.7	0.7	20.4	20.4	1	0	<0.1	Dry	0.86			
DS112	<0.1	0.3	0.3	0.3	0.3	0.4	0.4	21.2	21.3	1	0	<0.1	Dry	0.95			
DS113	<0.1	0.2	0.2	0.4	0.3	0.6	0.6	20.8	20.9	1	0	<0.1	Dry	1.10			
DS114	<0.1	0.3	0.3	0.4	0.4	0.7	0.7	20.7	20.8	2	0	<0.1	Dry	1.10			
DS115*	0.1	0.2	0.2	0.3	0.3	1.0	1.0	19.9	19.9	2	0	0.1	Dry	1.00			
DS117	<0.1	0.3	0.3	0.3	0.3	0.3	0.3	21.4	21.5	2	0	0.2	Dry	0.80			
DS118	<0.1	0.5	0.5	0.3	0.3	0.5	0.5	21.2	21.2	2	0	0.1	Dry	1.00			
DS120	<0.1	0.4	0.4	0.3	0.3	1.0	1.0	20.4	20.4	0	0	<0.1	Dry	0.90			
DS121	<0.1	0.4	0.4	0.3	0.3	1.5	1.5	20.3	20.4	0	0	0.1	Dry	1.01			
DS122	<0.1	0.3	0.3	0.3	0.3	1.2	1.0	19.9	20.1	0	0	0.0	Dry	0.87			
DS123	<0.1	0.3	0.3	0.3	0.3	4.5	4.5	18.8	18.8	0	0	0.2	Dry	1.75			
DS125	<0.1	0.5	0.5	0.3	0.3	1.1	1.1	20.5	20.5	0	0	0.1	Dry	0.98			
DS128	<0.1	0.3	0.3	0.3	0.3	1.0	1.0	20.3	20.3	0	0	<0.1	Dry	1.61			
DS130	<0.1	0.2	0.2	0.3	0.3	1.2	1.1	19.9	20.0	0	0	0.1	Dry	0.96			
RO01	<0.1	0.4	0.4	0.3	0.3	0.0	0.0	20.5	20.5	2	1	0.1	5.90	10.00		113.16	
RO02	<0.1	0.2	0.2	0.3	0.3	0.2	0.1	20.8	21.2	1	0	<0.1	4.00	10.04		113.24	
RO03	<0.1	0.3	0.3	0.3	0.3	0.7	0.6	21.0	21.1	0	0	0.1	4.15	10.00		115.05	
RO04	<0.1	0.4	0.4	0.3	0.3	0.3	0.2	20.8	21.2	1	0	0.0	3.00	10.15		107.30	
RO05*	<0.1	0.0	0.0	0.3	0.3	0.0	0.0	21.7	21.8	2	0	0.1	3.10	10.00		107.57	
RO06	0.1	0.3	0.3	0.3	0.3	0.0	0.0	20.9	20.9	2	1	0.1	5.70	10.00		107.94	
RO07	<0.1	0.3	0.3	0.3	0.3	1.4	1.4	17.8	17.8	0	0	0.1	3.90	10.00		93.68	
RO08	<0.1	0.4	0.4	0.3	0.3	0.3	0.3	20.1	20.2	0	0	0.1	3.95	10.00		113.79	

BWB GAS AND GROUNDWATER MONITORING

Site:		Oxfordshire RFI
Client:		0
Job No.:		NTH2479
Date:		11/10/2021
Start / End Time:		12:50 - 16:30
Engineer:		JM
Monitoring Equipment:	Gas Meter ID	
	PID ID	
	Dip Tape	
	Other	

NR = Not Recorded
Dry = No Groundwater

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Weather Conditions	Start	End
(Dry / Raining)	Dry	Dry
Wind Strength (m/s)	1.7	1.7
Wind Direction (from)	NW	NW
Temperature (°C)	18.0	19.0
Barometric Pressure (h Pa / mB)	1022.0	1022.0
App 12 Hour Pressure (h Pa / mB)	1008 - 1010	
12 Hour Pressure Trend	falling	
PID - Air		
PID - Calibration Gas		

Location Reference	Relative Pressure (Pa)	Flow (l/hr)		Methane (%v/v)		Carbon Dioxide (%v/v)		Oxygen (%v/v)		Hydrogen Sulphide (ppm)	Carbon Monoxide (ppm)	PID (ppm)	Depth to water (m)	Base of Response Zone (m)	Free-Phase Product Level Top (m)	Groundwater Elevation (m AOD)	Notes
		Peak	Steady	Peak	Steady	Peak	Steady	Min	Steady								
Ambient Air Start (Calibration)	<0.1	0.1	<0.1		<0.1		<0.1		20.7	<1	<1	<0.1					
Ambient Air Finish (Calibration)	<0.1	0.1	<0.1		<0.1		<0.1		20.8	<1	<1	<0.1					
DS101	<0.1	<0.1	<0.1	0.0	0.0	1.5	1.5	18.9	18.9	<1	<1	0.1	Dry	1.00			
DS102	<0.1	<0.1	<0.1	0.0	0.0	0.7	0.7	20.3	20.3	<1	1.0	0.2	Dry	1.10			
DS103	<0.1	<0.1	<0.1	0.0	0.0	0.7	0.7	20.2	20.2	<1	<1	0.2	Dry	1.10			
DS104	<0.1	<0.1	<0.1	0.0	0.0	0.3	0.3	21.1	21.1	1.0	<1	0.2	Dry	0.90			
DS105	<0.1	<0.1	<0.1	0.0	0.0	0.8	0.8	20.5	20.5	1.0	2.0	0.5	Dry	1.05			
DS106	<0.1	<0.1	<0.1	0.0	0.0	0.9	0.9	20.8	20.8	1.0	<1	0.3	Dry	0.95			
DS107	<0.1	<0.1	<0.1	0.0	0.0	0.3	0.3	21.1	21.1	1.0	<1	0.2	Dry	0.99			
DS108	<0.1	<0.1	<0.1	0.0	0.0	0.9	0.9	20.7	20.7	1.0	<1	0.2	Dry	1.00			
DS110	<0.1	<0.1	<0.1	0.0	0.0	0.8	0.8	20.9	20.9	1.0	1.0	0.9	0.39	3.00		107.73	
DS111	<0.1	<0.1	<0.1	0.0	0.0	0.3	0.3	20.2	20.2	<1	<1	0.1	Dry	0.86			
DS112	<0.1	<0.1	<0.1	0.0	0.0	1.4	1.4	18.8	18.8	<1	<1	0.3	Dry	0.95			
DS113	<0.1	0.1	0.1	0.0	0.0	0.2	0.2	20.5	20.8	<1	<1	<0.1	Dry	1.75			
DS114	<0.1	0.2	0.2	0.0	0.0	1.2	1.2	19.8	19.8	<1	<1	<0.1	Dry	0.96			
DS115*	<0.1	0.2	0.2	0.0	0.0	1.7	1.7	19.6	19.6	<1	<1	<0.1	Dry	1.00			
DS117	<0.1	<0.1	<0.1	0.0	0.0	0.9	0.9	20.7	20.7	1.0	<1	0.8	Dry	0.80			
DS118	<0.1	<0.1	<0.1	0.0	0.0	0.8	0.8	21.0	21.0	1.0	1.0	0.1	Dry	1.00			
DS120	<0.1	<0.1	<0.1	0.0	0.0	1.3	1.3	20.2	20.2	1.0	1.0	0.8	Dry	0.90			
DS121	<0.1	<0.1	<0.1	0.0	0.0	1.4	1.4	20.1	20.1	1.0	1.0	0.8	Dry	1.01			
DS122	<0.1	0.1	0.1	0.0	0.0	1.4	1.4	20.0	20.0	1.0	<1	0.7	Dry	0.87			
DS123	<0.1	<0.1	<0.1	0.0	0.0	1.4	1.4	20.0	20.0	1.0	<1	0.8	Dry	1.75			
DS125	<0.1	<0.1	<0.1	0.0	0.0	0.8	0.8	21.1	21.1	1.0	1.0	0.3	Dry	0.98			
DS128	<0.1	<0.1	<0.1	0.0	0.0	1.3	1.3	20.8	20.8	1.0	1.0	0.7	1.43	1.61		106.42	
DS130	<0.1	<0.1	<0.1	0.0	0.0	0.8	0.8	20.8	20.8	1.0	1.0	0.6	Dry	0.96			
RO01	<0.1	<0.1	<0.1	0.0	0.0	0.2	0.2	19.2	19.2	<1	1.0	0.8	5.45	10.00		113.61	
RO02	<0.1	<0.1	<0.1	0.0	0.0	0.3	0.3	21.2	21.2	1.0	1.0	0.1	3.96	10.04		113.28	
RO03	<0.1	<0.1	<0.1	0.0	0.0	0.9	0.9	20.8	20.8	1.0	0.0	0.2	4.10	10.00		115.10	
RO04	<0.1	<0.1	<0.1	0.0	0.0	0.5	0.5	20.4	20.4	1.0	1.0	0.1	2.75	10.15		107.55	
RO05*	<0.1	0.2	0.2	0.0	0.0	0.2	0.2	20.9	20.9	<1	<1	<0.1	3.01	0.87		107.66	
RO06	<0.1	<0.1	<0.1	0.0	0.0	0.2	0.2	19.9	19.9	1.0	1.0	0.1	5.50	10.00		108.14	
RO07	<0.1	<0.1	<0.1	0.0	0.0	2.0	2.0	12.9	12.9	2.0	<1	0.6	3.68	10.00		93.90	
RO08	<0.1	<0.1	<0.1	0.0	0.0	0.7	0.7	20.3	20.3	1.0	1.0	0.5	3.69	10.00		114.05	

BWB GAS AND GROUNDWATER MONITORING

Site:		Oxfordshire RFI
Client:		0
Job No.:		NTH2479
Date:		18/10/2021
Start / End Time:		09.30am / 14.30am
Engineer:		JM
Monitoring Equipment:	Gas Meter ID	
	PID ID	
	Dip Tape	
	Other	

NR = Not Recorded

Dry = No Groundwater

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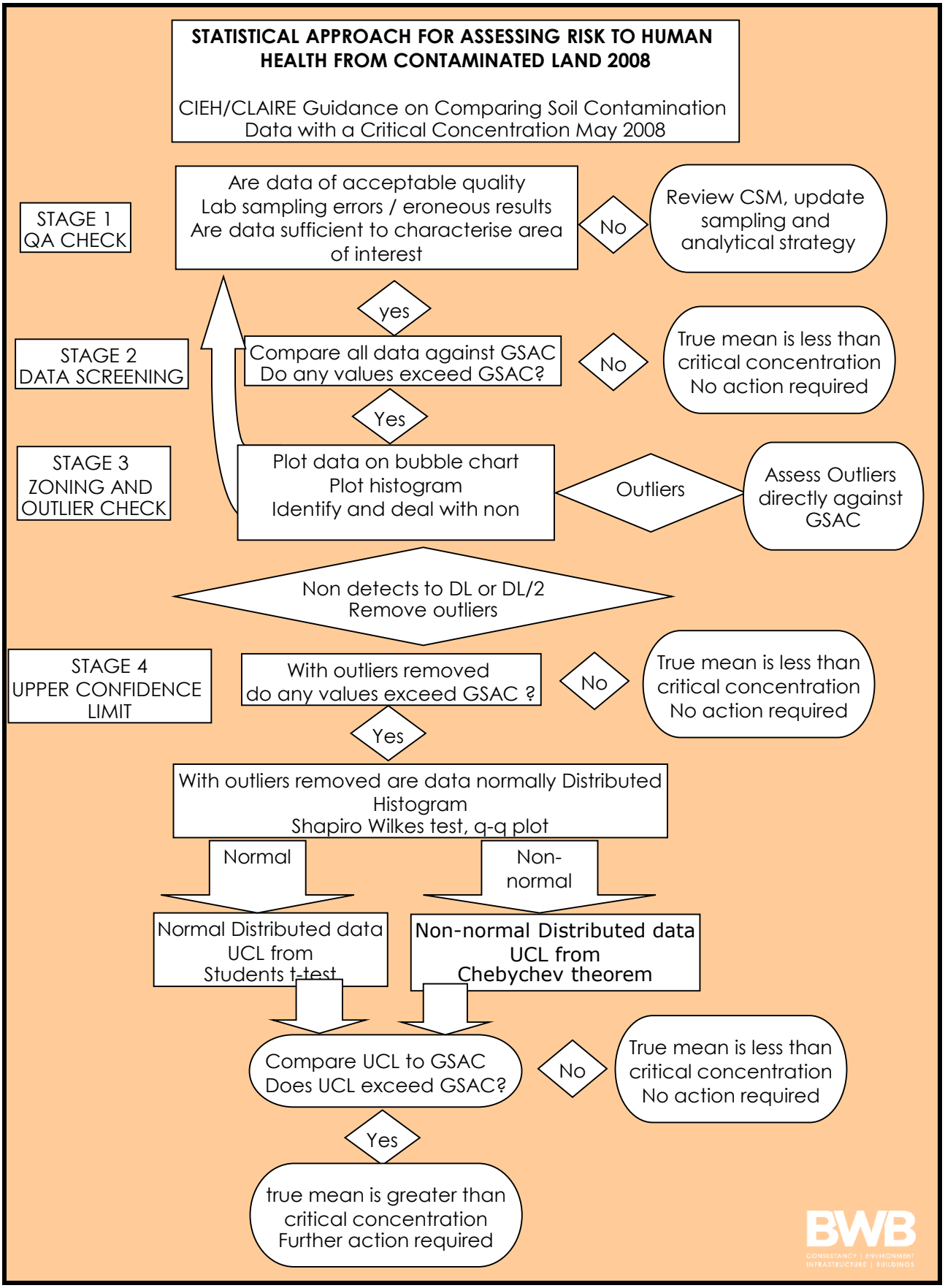
Weather Conditions	Start	End
(Dry / Raining)	Dry	Dry
Wind Strength (m/s)	5.8	5.8
Wind Direction (from)	SE	SE
Temperature (°C)	18.0	18.0
Barometric Pressure (h Pa / mB)	1006.0	1006.0
App 12 Hour Pressure (h Pa / mB)	992.0	
12 Hour Pressure Trend	falling	
PID - Air	0	0
PID - Calibration Gas		

Location Reference	Relative Pressure (Pa)	Flow (l/hr)		Methane (%v/v)		Carbon Dioxide (%v/v)		Oxygen (%v/v)		Hydrogen Sulphide (ppm)	Carbon Monoxide (ppm)	PID (ppm)	Depth to water (m)	Base of Response Zone (m)	Free-Phase Product Level Top (m)	Groundwater Elevation (m AOD)	Notes
		Peak	Steady	Peak	Steady	Peak	Steady	Min	Steady								
Ambient Air Start (Calibration)																	
Ambient Air Finish (Calibration)																	
DS101	<0.1	0.1	0.1	<0.1	<0.1	1.0	1.0	19.9	19.9	1	<1	<0.1	Dry	1.00			
DS102	<0.1	0.1	0.1	<0.1	<0.1	0.6	0.6	20.2	20.2	<1	<1	0.1	Dry	1.10			
DS103	<0.1	0.1	0.1	<0.1	<0.1	0.3	0.3	20.7	20.7	1	<1	0.3	Dry	1.10			
DS104	<0.1	0.1	0.1	<0.1	<0.1	0.3	0.3	21.4	21.4	1	<1	0.3	Dry	0.90			
DS105	<0.1	0.1	0.1	<0.1	<0.1	0.2	0.2	21.1	21.1	1	2	0.1	Dry	1.05			
DS106	<0.1	0.1	0.1	<0.1	<0.1	0.2	0.2	21.0	21.0	1	<1	0.4	Dry	0.95			
DS107	<0.1	0.1	0.1	<0.1	<0.1	0.2	0.2	21.1	21.1	1	<1	0.1	Dry	0.99			
DS108	<0.1	0.1	0.1	<0.1	<0.1	0.8	0.8	19.6	19.6	1	<1	0.1	Dry	1.00			
DS110	<0.1	0.2	0.2	<0.1	<0.1	0.3	0.3	21.4	21.4	1	1	0.5	0.40	3.00		107.72	
DS111	<0.1	0.1	0.1	<0.1	<0.1	0.4	0.4	20.5	20.5	<1	<1	0.4	Dry	0.86			
DS112	<0.1	0.1	0.1	<0.1	<0.1	0.3	0.3	20.9	20.9	1	<1	0.2	Dry	0.95			
DS113	<0.1	0.1	0.1	<0.1	<0.1	0.4	0.4	20.7	20.7	1	<1	0.2	Dry	1.75			
DS114	<0.1	0.3	0.3	<0.1	<0.1	0.9	0.9	19.8	19.8	<1	<1	<0.1	Dry	0.96			
DS115*	0.1	0.2	0.2	<0.1	<0.1	1.1	1.1	19.9	19.9	<1	<1	<0.1	Dry	1.00			
DS117	<0.1	0.3	0.3	<0.1	<0.1	0.6	0.6	20.1	20.1	1	<1	0.4	Dry	0.80			
DS118	<0.1	0.2	0.2	<0.1	<0.1	0.8	0.8	20.7	20.7	1	1	0.1	Dry	1.00			
DS120	<0.1	0.1	0.1	<0.1	<0.1	1.0	1.0	20.3	20.3	<1	<1	0.1	Dry	0.90			
DS121	<0.1	0.1	0.1	<0.1	<0.1	1.2	1.2	20.2	20.2	<1	<1	0.2	Dry	1.01			
DS122	<0.1	0.1	0.1	<0.1	<0.1	0.2	0.2	21.0	21.0	<1	<1	<0.1	Dry	0.87			
DS123	<0.1	0.3	0.3	<0.1	<0.1	5.1	5.1	18.4	18.4	<1	<1	0.2	Dry	1.75			
DS125	<0.1	0.2	0.2	<0.1	<0.1	1.0	1.0	19.8	19.8	<1	<1	0.1	Dry	0.98			
DS128	<0.1	0.2	0.2	<0.1	<0.1	0.8	0.8	20.1	20.1	<1	<1	0.3	Dry	1.61			
DS130	<0.1	0.2	0.2	<0.1	<0.1	1.1	1.1	20.0	20.0	<1	<1	0.4	Dry	0.96			
RO01	<0.1	0.3	0.3	<0.1	<0.1	0.0	0.0	21.1	21.1	2	1	0.7	5.45	10.00		113.61	
RO02	<0.1	0.3	0.3	<0.1	<0.1	0.1	0.1	20.8	20.8	1	<1	0.1	4.75	10.04		112.49	
RO03	<0.1	0.4	0.3	<0.1	<0.1	0.5	0.5	20.9	20.9	1	<1	0.2	4.15	10.00		115.05	
RO04	<0.1	0.2	0.2	<0.1	<0.1	0.4	0.4	20.8	20.8	1	1	0.1	2.62	10.15		107.68	
RO05*	<0.1	0.2	0.2	<0.1	<0.1	0.1	0.1	21.1	21.1	<1	<1	0.1	3.05	0.87		107.62	
RO06	0.1	0.3	0.3	<0.1	<0.1	0.2	0.2	20.9	21.0	1	1	0.1	5.35	10.00		108.29	
RO07	<0.1	0.3	0.3	<0.1	<0.1	1.4	1.4	17.4	17.4	<1	<1	0.3	3.50	10.00		94.08	
RO08	<0.1	0.3	0.3	<0.1	<0.1	0.4	0.4	20.8	20.8	1	<1	0.4	3.57	10.00		114.17	

Groundwater Elevation Summary Table							
	Exp Hole	GW1 (m AOD)	GW2 (m AOD)	GW3 (m AOD)	GW4 (m AOD)	Combined	Elevation
		1	2	3	4		
		28/09/2021	04/10/2021	11/10/2021	18/10/2021		
Min		107.52	107.77	106.42	107.72	106.42	
Max		107.52	107.77	107.73	107.72	107.77	
Mean		107.52	107.77	107.08	107.72	107.52	
1	DS101	Dry	Dry	Dry	Dry		38.22
2	DS102	Dry	Dry	Dry	Dry		38.29
3	DS103	Dry	Dry	Dry	Dry		38.57
4	DS104	Dry	Dry	Dry	Dry		
5	DS105	Dry	Dry	Dry	Dry		
6	DS106	Dry	Dry	Dry	Dry		
7	DS107	Dry	Dry	Dry	Dry		
8	DS108	Dry	Dry	Dry	Dry		
9	DS110	107.52	107.77	107.73	107.72		108.12
10	DS111	Dry	Dry	Dry	Dry		
11	DS112	Dry	Dry	Dry	Dry		
12	DS113	Dry	Dry	Dry	Dry		
13	DS114	Dry	Dry	Dry	Dry		
14	DS115*	Dry	Dry	Dry	Dry		
15	DS117	Dry	Dry	Dry	Dry		
16	DS118	Dry	Dry	Dry	Dry		
17	DS120	Dry	Dry	Dry	Dry		
18	DS121	Dry	Dry	Dry	Dry		
19	DS122	Dry	Dry	Dry	Dry		
20	DS123	Dry	Dry	Dry	Dry		
21	DS125	Dry	Dry	Dry	Dry		
22	DS128	Dry	Dry	106.42	Dry		107.85
23	DS130	Dry	Dry	Dry	Dry		

Borehole Ref.	Flow* (l/hr)		Carbon Dioxide (% v/v)			Methane (% v/v)			GSV (l/hr)	Borehole Specific Classification	
	Min.	Max.	Min.	Max.	Avg.	Min.	Max.	Avg.		CS	NHBC
DS101	<0.1	0.4	1.0	1.5	1.2	<0.1	0.3	0.2	0.006	1	Green
DS102	<0.1	0.3	0.6	1.6	1.1	<0.1	0.3	0.2	0.005	1	Green
DS103	<0.1	0.2	0.3	0.7	0.5	<0.1	0.3	0.2	0.001	1	Green
DS104	<0.1	0.3	0.3	0.7	0.5	<0.1	0.3	0.2	0.002	1	Green
DS105	<0.1	0.3	0.2	0.8	0.5	<0.1	0.3	0.2	0.002	1	Green
DS106	<0.1	0.4	0.2	0.9	0.6	<0.1	0.3	0.2	0.004	1	Green
DS107	<0.1	0.4	0.2	0.4	0.3	<0.1	0.3	0.2	0.002	1	Green
DS108	<0.1	0.4	0.7	0.9	0.8	<0.1	0.3	0.2	0.004	1	Green
DS110	<0.1		0.1	0.8	0.4	<0.1	*0.4*	0.2		1	Green
DS111	<0.1	0.1	0.3	0.7	0.5	<0.1	0.3	0.2	0.001	1	Green
DS112	<0.1	0.3	0.3	1.4	0.7	<0.1	0.3	0.2	0.004	1	Green
DS113	0.1	0.3	0.2	0.7	0.5	<0.1	0.3	0.2	0.002	1	Green
DS114	0.2	0.3	0.7	1.2	0.9	<0.1	*0.4*	0.2	0.004	1	Green
DS115*	0.2	0.2	1.0	1.7	1.3	<0.1	0.3	0.2	0.003	1	Green
DS117	<0.1	0.3	0.3	0.9	0.5	<0.1	0.3	0.2	0.003	1	Green
DS118	<0.1	*0.5*	0.5	0.8	0.7	<0.1	0.3	0.2	0.004	1	Green
DS120	<0.1	0.4	0.9	1.3	1.1	<0.1	0.3	0.2	0.005	1	Green
DS121	<0.1	0.4	1.2	1.5	1.4	<0.1	0.3	0.2	0.006	1	Green
DS122	<0.1	0.3	0.2	1.4	0.9	<0.1	0.3	0.2	0.004	1	Green
DS123	<0.1	0.3	1.2	*5.1*	3.1	<0.1	0.3	0.2	0.015	2	Amber 1
DS125	<0.1	*0.5*	0.8	1.2	1.0	<0.1	0.3	0.2	0.006	1	Green
DS128	<0.1	0.3	0.1	1.3	0.8	<0.1	0.3	0.2	0.004	1	Green
DS130	<0.1	0.2	0.8	1.2	1.1	<0.1	0.3	0.2	0.002	1	Green
RO01	<0.1	0.4	0.2	0.7	0.5	<0.1	0.3	0.2	0.003	1	Green
RO02	<0.1	0.3	0.1	0.3	0.2	<0.1	0.3	0.2	0.001	1	Green
RO03	<0.1	0.3	0.3	0.9	0.6	<0.1	0.3	0.2	0.003	1	Green
RO06	<0.1	0.4	0.2	0.2	0.2	<0.1	0.3	0.2	0.001	1	Green
RO07	<0.1	0.3	0.2	2.0	1.3	<0.1	0.3	0.2	0.006	1	Green
RO08	<0.1	0.4	0.1	0.7	0.4	<0.1	0.3	0.2	0.003	1	Green

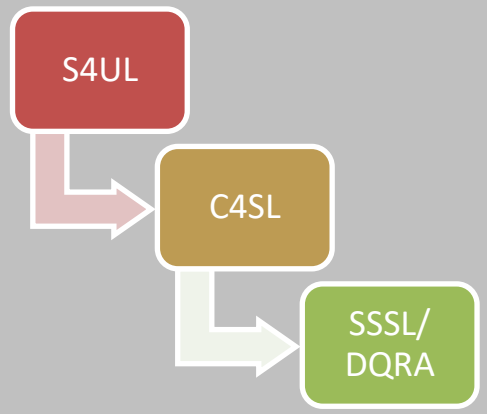
Appendix 4: Soil Screening and GSACs


STATISTICAL APPROACH FOR ASSESSING RISK TO HUMAN HEALTH FROM CONTAMINATED LAND 2008
CIEH/CLAIRE Guidance on Comparing Soil Contamination Data with a Critical Concentration May 2008
STAGE 1 QA CHECK
Are data of acceptable quality
Lab sampling errors / eroneous results
Are data sufficient to characterise area of interest
No
Review CSM, update sampling and analytical strategy
yes
STAGE 2 DATA SCREENING
Compare all data against GSAC
Do any values exceed GSAC?
No
True mean is less than critical concentration
No action required
Yes
STAGE 3 ZONING AND OUTLIER CHECK
Plot data on bubble chart
Plot histogram
Identify and deal with non
Outliers
Assess Outliers directly against GSAC
Non detects to DL or DL/2
Remove outliers
STAGE 4 UPPER CONFIDENCE LIMIT
With outliers removed
do any values exceed GSAC ?
No
True mean is less than critical concentration
No action required
Yes
With outliers removed are data normally Distributed
Histogram
Shapiro Wilkes test, q-q plot
Normal
Non-normal
Normal Distributed data
UCL from
Students t-test
Non-normal Distributed data
UCL from
Chebychev theorem
Compare UCL to GSAC
Does UCL exceed GSAC?
No
True mean is less than critical concentration
No action required
Yes
true mean is greater than critical concentration
Further action required
BWB
CONSULTANCY | ENVIRONMENT
INFRASTRUCTURE | BUILDINGS

Human Health Generic QRA Worksheet

Oxfordshire RFI	NTH-2478
All data	

GSAC Hierarcy



Define CSM – Is site represented by a standard land use?

Commercial / Industrial

GSAC Type (BWB, LQM S4UL, C4SL, Bespoke)	**LQM_CIEH_S4UL**
Key Receptor/CSM (Residential/Commercial/POS)	**S4UL Commercial**
Organic Matter % (If unknown use 1%)	**1**

Generic Assessment Criteria Oxfordshire RFI NTH-2478	S4UL Commercial mg/kg	Source
Arsenic	6.40E+02	LQM_CIEH_S4UL
Barium	2.21E+04	LQM_CIEH_S4UL
Beryllium	1.20E+01	LQM_CIEH_S4UL
Boron	2.40E+05	LQM_CIEH_S4UL
Cadmium	1.90E+02	LQM_CIEH_S4UL
Chromium VI	3.30E+01	LQM_CIEH_S4UL
Chromium III	8.60E+03	LQM_CIEH_S4UL
Copper	6.80E+04	LQM_CIEH_S4UL
Lead*	2.33E+03	DEFRA_C4SL
Inorganic Mercury	1.10E+03	LQM_CIEH_S4UL
Nickel	9.80E+02	LQM_CIEH_S4UL
Selenium	1.20E+04	LQM_CIEH_S4UL
Vanadium	9.00E+03	LQM_CIEH_S4UL
Zinc	7.30E+05	LQM_CIEH_S4UL
Cyanide (Free)	4.30E+01	BWB
Cyanide (Complex)	2.13E+02	BWB
Phenols (Total)	4.40E+02	LQM_CIEH_S4UL
Benzene	2.70E+01	LQM_CIEH_S4UL
Toluene	5.60E+04	LQM_CIEH_S4UL
Ethyl benzene	5.70E+03	LQM_CIEH_S4UL
Total Xylene	5.90E+03	LQM_CIEH_S4UL
TPH (EC5-6) aliphatic	3.20E+03	LQM_CIEH_S4UL
TPH (>EC6-8) aliphatic	7.80E+03	LQM_CIEH_S4UL
TPH (>EC8-10) aliphatic	2.00E+03	LQM_CIEH_S4UL
TPH (>EC10-12) aliphatic	9.70E+03	LQM_CIEH_S4UL
TPH (>EC12-16) aliphatic	5.90E+04	LQM_CIEH_S4UL
TPH (>EC16-21) aliphatic	1.60E+06	LQM_CIEH_S4UL
TPH (>EC21-35) aliphatic	1.60E+06	LQM_CIEH_S4UL
TPH (>EC35-44) aliphatic	1.60E+06	LQM_CIEH_S4UL
TPH (>EC6-7) aromatic (benzene)	2.60E+04	LQM_CIEH_S4UL
TPH (>EC7-8) aromatic (toluene)	5.60E+04	LQM_CIEH_S4UL
TPH (>EC8-10) aromatic	3.50E+03	LQM_CIEH_S4UL
TPH (>EC10-12) aromatic	1.60E+04	LQM_CIEH_S4UL
TPH (>EC12-16) aromatic	3.60E+04	LQM_CIEH_S4UL
TPH (>EC16-21) aromatic	2.80E+04	LQM_CIEH_S4UL
TPH (>EC21-35) aromatic	2.80E+04	LQM_CIEH_S4UL
TPH (>EC35-44) aromatic	2.80E+04	LQM_CIEH_S4UL
Total TPH	5.00E+02	LQM_CIEH_S4UL
Naphthalene	1.90E+02	LQM_CIEH_S4UL
Acenaphthylene	8.30E+04	LQM_CIEH_S4UL
Acenaphthene	8.40E+04	LQM_CIEH_S4UL
Fluorene	6.30E+04	LQM_CIEH_S4UL
Phenanthrene	2.20E+04	LQM_CIEH_S4UL
Anthracene	5.20E+05	LQM_CIEH_S4UL
Fluoranthene	2.30E+04	LQM_CIEH_S4UL
Pyrene	5.40E+04	LQM_CIEH_S4UL
Benzo(a)anthracene	1.70E+02	LQM_CIEH_S4UL
Chrysene	3.50E+02	LQM_CIEH_S4UL
Benzo(b)fluoranthene	4.40E+01	LQM_CIEH_S4UL
Benzo(k)fluoranthene	1.20E+03	LQM_CIEH_S4UL
Benzo(a)pyrene	3.50E+01	LQM_CIEH_S4UL
Indeno(1,2,3-c,d)pyrene	5.00E+02	LQM_CIEH_S4UL

Generic Assessment Criteria Oxfordshire RFI NTH-2478	S4UL Commercial mg/kg	Source
Dibenzo(a,h)anthracene	3.50E+00	LQM_CIEH_S4UL
Benzo(g,hi)perylene	3.90E+03	LQM_CIEH_S4UL
Coal Tar (B(a)P as surrogate marker	1.50E+01	LQM_CIEH_S4UL
Tetrachloroethene (PCE)	1.90E+01	LQM_CIEH_S4UL
Trichloroethene (TCE)	1.20E+00	LQM_CIEH_S4UL
cis -1,2-Dichloroethene	1.40E+01	LQM_CIEH_S4UL
Vinyl Chloride (VC)	5.90E-02	LQM_CIEH_S4UL
1,1,2,2-Tetrachloroethane (PCA)	2.70E+02	LQM_CIEH_S4UL
1,1,1-Trichloroethane (TCA)	6.60E+02	LQM_CIEH_S4UL
1,2-Dichloroethane	6.70E-01	LQM_CIEH_S4UL
Carbon Tetrachloride	2.90E+00	LQM_CIEH_S4UL
Carbon disulphide	1.10E+01	LQM_CIEH_S4UL

Determinand	Number of tests	Range (mg/kg)	S4UL Commercial GSAC (m	Detection Limit (mg/kg)	Min	Max	No. of Exceedances	No. Non detects	< or not
Arsenic	36	3.2 to 24	6.40E+02	1	3.2	24	0	0	
Barium	36	14 to 110	2.21E+04	1	14	110	0	0	
Beryllium	36	0.33 to 1.8	1.20E+01	0.06	0.33	1.8	0	0	
Boron	36	<0.2 to 1.6	2.40E+05	0.2	0.2	1.6	0	6	<
Cadmium	36	<0.2 to 0.2	1.90E+02	0.2	0.2	0.2	0	36	<
Chromium VI	36	<4 to 4	3.30E+01	4	4	4	0	36	<
Chromium III	36	9.8 to 48	8.60E+03	1	9.8	48	0	0	
Copper	36	2.2 to 20	6.80E+04	1	2.2	20	0	0	
Lead*	36	4.4 to 27	2.33E+03	1	4.4	27	0	0	
Inorganic Mercury	36	<0.3 to 0.3	1.10E+03	0.3	0.3	0.3	0	36	<
Nickel	36	8.9 to 33	9.80E+02	1	8.9	33	0	0	
Selenium	36	<1 to 1	1.20E+04	1	1	1	0	36	<
Vanadium	36	16 to 91	9.00E+03	1	16	91	0	0	
Zinc	36	16 to 82	7.30E+05	1	16	82	0	0	
Cyanide (Free)	36	<1 to 1	4.30E+01	1	1	1	0	36	<
Cyanide (Complex)	36	<1 to 1	2.13E+02	1	1	1	0	36	<
Phenols (Total)	36	<1 to 1	4.40E+02	1	1	1	0	36	<
Benzene	1	<0.001 to 0.001	2.70E+01	0.001	0.001	0.001	0	1	<
Toluene	1	<0.001 to 0.001	5.60E+04	0.001	0.001	0.001	0	1	<
Ethyl benzene	1	<0.001 to 0.001	5.70E+03	0.001	0.001	0.001	0	1	<
Total Xylene	1	0.002 to 0.002	5.90E+03	0.001	0.002	0.002	0	0	
TPH (EC5-6) aliphatic	0	<0 to 0	3.20E+03		0	0	0	175	<
TPH (>EC6-8) aliphatic	0	<0 to 0	7.80E+03		0	0	0	175	<
TPH (>EC8-10) aliphatic	0	<0 to 0	2.00E+03		0	0	0	175	<
TPH (>EC10-12) aliphatic	0	<0 to 0	9.70E+03		0	0	0	175	<
TPH (>EC12-16) aliphatic	0	<0 to 0	5.90E+04		0	0	0	175	<
TPH (>EC16-21) aliphatic	0	<0 to 0	1.60E+06		0	0	0	175	<
TPH (>EC21-35) aliphatic	0	<0 to 0	1.60E+06		0	0	0	175	<
TPH (>EC35-44) aliphatic	0	<0 to 0	1.60E+06		0	0	0	193	<
TPH (>EC6-7) aromatic (benzene)	0	<0 to 0	2.60E+04		0	0	0	175	<
TPH (>EC7-8) aromatic (toluene)	0	<0 to 0	5.60E+04		0	0	0	175	<
TPH (>EC8-10) aromatic	0	<0 to 0	3.50E+03		0	0	0	175	<
TPH (>EC10-12) aromatic	0	<0 to 0	1.60E+04		0	0	0	175	<
TPH (>EC12-16) aromatic	0	<0 to 0	3.60E+04		0	0	0	175	<
TPH (>EC16-21) aromatic	0	<0 to 0	2.80E+04		0	0	0	175	<
TPH (>EC21-35) aromatic	0	<0 to 0	2.80E+04		0	0	0	175	<
TPH (>EC35-44) aromatic	0	<0 to 0	2.80E+04		0	0	0	175	<
Total TPH	36	<10 to 23	5.00E+02	10	10	23	0	34	<
Naphthalene	36	<0.05 to 0.05	1.90E+02	0.05	0.05	0.05	0	36	<
Acenaphthylene	36	<0.05 to 0.05	8.30E+04	0.05	0.05	0.05	0	36	<
Acenaphthene	36	<0.05 to 0.05	8.40E+04	0.05	0.05	0.05	0	36	<
Fluorene	36	<0.05 to 0.05	6.30E+04	0.05	0.05	0.05	0	36	<
Phenanthrene	36	<0.05 to 0.05	2.20E+04	0.05	0.05	0.05	0	36	<
Anthracene	36	<0.05 to 0.05	5.20E+05	0.05	0.05	0.05	0	36	<
Fluoranthene	36	<0.05 to 0.05	2.30E+04	0.05	0.05	0.05	0	36	<
Pyrene	36	<0.05 to 0.05	5.40E+04	0.05	0.05	0.05	0	36	<
Benzo(a)anthracene	36	<0.05 to 0.05	1.70E+02	0.05	0.05	0.05	0	36	<
Chrysene	36	<0.05 to 0.05	3.50E+02	0.05	0.05	0.05	0	36	<
Benzo(b)fluoranthene	36	<0.05 to 0.05	4.40E+01	0.05	0.05	0.05	0	36	<
Benzo(k)fluoranthene	36	<0.05 to 0.05	1.20E+03	0.05	0.05	0.05	0	36	<
Benzo(a)pyrene	36	<0.05 to 0.05	3.50E+01	0.05	0.05	0.05	0	36	<
Indeno(1,2,3-c,d)pyrene	36	<0.05 to 0.05	5.00E+02	0.05	0.05	0.05	0	36	<
Dibenzo(a,h)anthracene	36	<0.05 to 0.05	3.50E+00	0.05	0.05	0.05	0	36	<
Benzo(g,hi)perylene	36	<0.05 to 0.05	3.90E+03	0.05	0.05	0.05	0	36	<
Coal Tar (B(a)P as surrogate mark	36	<0.05 to 0.05	1.50E+01	0.05	0.05	0.05	0	36	<
Tetrachloroethene (PCE)	2	<0.001 to 0.001	1.90E+01	0.001	0.001	0.001	0	2	<
Trichloroethene (TCE)	2	<0.001 to 0.001	1.20E+00	0.001	0.001	0.001	0	2	<
cis-1,2-Dichloroethene	2	<0.001 to 0.001	1.40E+01	0.001	0.001	0.001	0	2	<
Vinyl Chloride (VC)	2	<0.001 to 0.001	5.90E-02	0.001	0.001	0.001	0	2	<
1,1,2,2-Tetrachloroethane (PCA)	2	<0.001 to 0.001	2.70E+02	0.001	0.001	0.001	0	2	<

Appendix 5: Derivation of GSAC

BWB HUMAN HEALTH GENERIC QUANTITATIVE RISK ASSESSMENT (GQRA)

Human Health Generic Screening Criteria

The Environment Agency published the revised CLEA framework for assessing the risk to human health from soil contamination in January 2009. The framework comprises a technical background document (EA, 2009a), toxicological assessment EA 2009b and CLEA spreadsheet model (EA 2009c). The new framework supersedes the 2002 CLEA model and subsequent briefing notes. The 2002 CLEA software and CLEA 2005 have also been withdrawn and all previously published Soil Guideline Values (SGV) have been withdrawn. The EA have issued revised SGVs for the following substances.

- Arsenic
- selenium
- ethylbenzene
- Phenol
- cadmium
- benzene
- xylene
- Mercury
- nickel
- toluene
- dioxins and dioxin like PCBS

In the absence of an SGV for a particular contaminant Generic assessment criteria have been generated by BWB using the CLEA framework. This is a similar approach to Generic screening criteria published by LQM/CIEH and CLAIRE/EIC.

The Statutory Guidance on Part IIa of the Environment Act was revised in 2012 and introduced the concept of characterising Land into 4 categories. Categories 1 and 2 were classed as "Contaminated Land" and Categories 3 and 4 as "not Contaminated Land". DEFRA commissioned a research project to develop Category 4 Screening Levels (C4SLs) which would be used to rapidly screen sites as not contaminated land. These values would be less conservative than SGVs or equivalent GSACs but still be strongly precautionary. In 2014 DEFRA published the framework for deriving C4SLs and C4SLs for six substances:

Arsenic
Cadmium
Chromium VI
Lead
Benzo(a)pyrene
Benzene

The framework recommended changes to exposure parameters as well as introducing a new Health Criteria Value known as a "Low level of Toxicological Concern" (LLTC). This would be less conservative than the minimal risk approach used to derive TDIs and IDs under the 2009b CLEA framework.

In response LQM/CIEH published their third edition of Generic screening criteria for human health in January 2015. These were known as "Suitable for Use Levels" (S4ULs) and adopted the changes to exposure parameters that were developed under the Category 4 Screening Level methodology. The report also reviewed toxicity information but adopted the minimal risk approach as set out in EA 2009b. This report presented revised data for some substances for which an SGV had been developed, therefore some of the existing SGVs have been superseded.

BWB have updated their GSACs to take into account the LQM/CIEH S4ULs and DEFRA C4SLs but have retained the CLEA exposure assumptions, the BWB GSACs represent the most conservative minimal risk approach.

The screening approach comprises tiered assessment of contaminant data against BWB GSACs in the first instance, then S4ULs and finally C4SLs if available.

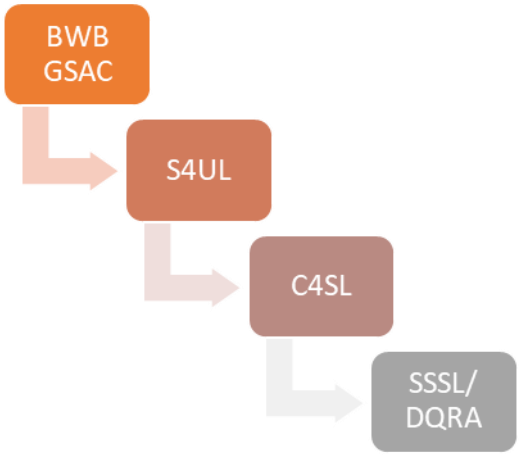


Figure 1 GSAC Hierarchy

Conceptual Site Model

The standard exposure pathways and Conceptual Models for human exposure to contaminants for different site uses are set out in the updated technical background to the CLEA model (Environment Agency 2009a).

Descriptive Conceptual Models (From Environment Agency 2009a)

Residential This generic scenario assumes a typical residential property consisting of a two-storey house built on a ground bearing slab with a private garden consisting of lawn, flower beds and a small fruit and vegetable patch. The occupants are assumed to be parents with young children, who make regular use of the garden area. The key assumptions for BWB GSACs are Critical receptor is a young female child (aged zero to six years old) Exposure duration is six years Exposure pathways include direct soil and indoor dust ingestion, consumption of homegrown produce, consumption of soil attached to home grown produce, skin contact with soils and indoor dusts, and inhalation of indoor and outdoor dust and vapours. Soil type is a Sandy Loam with 1% organic matter Building type is a two storey small terraced house
Commercial/industrial There are many different kinds of workplace and work-related activities. This generic scenario assumes a typical commercial or light industrial property consisting of a three storey building at which employees spend most time indoors and are involved in office based or relatively light physical work. The key assumptions for BWB GSACs are Critical receptor is a working female adult (aged 16 to 65 years) Exposure duration is a working lifetime of 49 years Exposure pathways include direct soil and indoor dust ingestion, skin contact with soils and dusts, and inhalation of dust and vapours. Soil type is a Sandy Loam with 1% organic matter Building type is a three storey office (post 1970) (Representative of new buildings)

The 2009a report identifies 10 potential exposure pathways by which contaminated soils may impact human health and also sets out which pathways are applicable for four standard land uses. The pathways for the residential and commercial end uses are shown below.

Screening Criteria Modelling

The CLEA model version 1.071 has been used to calculate BWB GSACs. BWB have used the model to calculate Individual criteria for each relevant pathway so, for example, in a residential with vegetable uptake scenario we would need six individual criteria:-

- Ingestion of soil and dust
- Ingestion of contaminated vegetables and soil attached to vegetables
- Dermal contact indoors and outdoors
- Particulate dust inhalation indoors and outdoors
- Vapour inhalation indoors
- Vapour inhalation outdoors

The final overall assessment criteria is calculated by adding together the reciprocal of the individual criteria for each pathway, therefore if several of the individual criteria are of similar magnitude the final criteria may be substantially lower than the lowest individual criteria so that total exposure is below the respective health threshold.

$1/GSAC = \sum 1/ASC_{ingestion} + 1/ASC_{inhalation} + 1/ASC_{dermal}$

By adopting this methodology BWB are able to provide a more flexible site specific approach to generic human health risk assessment.

Pathway Selection - Generic Site Assessment Criteria

Pathway	Residential	Commercial / Industrial
Ingestion of Soil	Yes	Yes
Ingestion of site derived household dust	Yes	Yes
Ingestion of contaminated homegrown produce	Optional	No
Ingestion of soil attached to homegrown produce	Optional	No
Dermal contact with Soil	Yes	Yes
Dermal contact with site derived household dust	Yes	Yes
Inhalation of fugitive soil dust	Yes	Yes
Inhalation of fugitive site derived household dust	Yes	Yes
Inhalation of vapours outside	Yes	Yes
Inhalation of vapours inside	Yes	Yes

Health Criteria Values

The general hierarchy for selecting health criteria values is as follows:

1. EA / DEFRA TOX report
2. Other UK authoritative body e.g. Committee on toxicity, Food Standards Agency
3. EU authoritative body
4. Other EU body e.g. RIVM
5. Other US/International Body

In the absence of updated TOX reports which take into account the recommendations of EA report (2009b) TOX reports produced under the old regime have been used and GSACs will be updated accordingly as further authoritative information is issued.

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Residential Pathway Specific Assessment Sub Criteria derived May 2015 1% Organic Matter	Vapour Inhalation (Indoors)	Vapour Inhalation (Outdoors)	Soil Ingestion & dermal contact	Ingestion of Contaminated Vegetables and soil attached to vegetables	Particulate Dust Inhalation	Residential GSAC	Soil Saturation Limit
	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	mg/kg	mg/kg
Arsenic	NR	NR	3.50E+01	4.29E+02	8.50E+01	3.24E+01	N/A
Barium	NR	NR	1.35E+03		4.25E+05	1.34E+03	N/A
Beryllium	NR	NR	1.56E+02	2.96E+03	1.21E+00	1.21E+00	N/A
Boron	NR	NR	1.08E+04	3.00E+02	3.65E+06	2.91E+02	N/A
Cadmium	NR	NR	1.21E+02	1.24E+01	1.27E+02	1.03E+01	N/A
Chromium III	NR	NR	1.98E+04	1.25E+06	6.37E+02	6.17E+02	N/A
Chromium VI	NR	NR	7.05E+01	1.22E+01	4.25E+00	4.25E+00	N/A
Copper	NR	NR	1.08E+04	3.54E+03	9.89E+03	2.10E+03	N/A
Lead						2.00E+02	N/A
Inorganic Mercury	NR	NR	5.71E+01	1.40E+02	2.55E+03	3.99E+01	N/A
Nickel	NR	NR	7.89E+02	1.64E+03	1.27E+02	1.27E+02	N/A
Selenium	NR	NR	4.31E+02	6.15E+02	1.36E+05	2.53E+02	N/A
Vanadium	NR	NR	1.17E+03	6.21E+02	1.03E+03	2.91E+02	N/A
Zinc	NR	NR	4.05E+04	4.13E+03	2.55E+07	3.74E+03	N/A
Cyanide (free)						4.30E+01	N/A
Cyanide (Complex)						2.13E+02	N/A
Phenol	3.43E+02	***4.21E+05***	6.56E+02	1.55E+02	3.22E+05	9.18E+01	4.16E+04
Benzene	2.69E-01	***5.63E+03***	2.58E+01	1.13E-01	5.95E+04	7.93E-02	1.22E+03
Toluene	6.38E+02	***8.78E+06***	1.98E+04	1.48E+02	5.92E+07	1.19E+02	8.69E+02
Ethylbenzene	5.86E+01	***6.17E+05***	8.88E+03	1.07E+02	3.11E+06	3.77E+01	5.18E+02
Total Xylene	5.57E+01	***5.15E+05***	1.60E+04	1.87E+02	2.28E+06	4.28E+01	4.78E+02
TPH (EC5-6) aliphatic	2.88E+01	***2.41E+06***	2.23E+05	***4.90E+03***	1.06E+08	2.86E+01	3.04E+02
TPH (>EC6-8) aliphatic	7.02E+01	***3.76E+06***	2.23E+05	***1.53E+04***	1.06E+08	6.99E+01	1.44E+02
TPH (>EC8-10) aliphatic	1.82E+01	***4.61E+05***	4.45E+03	***2.17E+03***	6.16E+06	1.80E+01	7.77E+01
TPH (>EC10-12) aliphatic	***9.02E+01***	***1.03E+06***	4.45E+03	***1.67E+04***	6.16E+06	***8.79E+01***	4.75E+01

Residential Pathway Specific Assessment Sub Criteria derived May 2015 1% Organic Matter	Vapour Inhalation (Indoors)	Vapour Inhalation (Outdoors)	Soil Ingestion & dermal contact	Ingestion of Contaminated Vegetables and soil attached to vegetables	Particulate Dust Inhalation	Residential GSAC	Soil Saturation Limit
TPH (>EC12-16) aliphatic	7.55E+02	2.97E+06	4.45E+03	2.32E+05	6.16E+06	6.43E+02	2.37E+01
TPH (>EC16-35) aliphatic	8.91E+04	8.47E+07	8.91E+04	1.15E+07	4.25E+07	4.43E+04	8.48E+00
TPH (>EC35-44) aliphatic	8.91E+04	8.47E+07	8.91E+04	1.15E+07	4.25E+07	4.43E+04	8.48E+00
TPH (>EC6-7) aromatic (benzene)	2.69E-01	5.63E+03	2.58E+01	1.13E-01	5.95E+04	7.93E-02	1.22E+03
TPH (>EC7-8) aromatic (toluene)	6.26E+02	8.62E+06	1.98E+04	1.48E+02	5.81E+07	1.19E+02	8.69E+02
TPH (>EC8-10) aromatic	3.22E+01	2.79E+05	1.78E+03	5.73E+01	1.28E+06	2.04E+01	6.13E+02
TPH (>EC10-12) aromatic	1.75E+02	6.50E+05	1.78E+03	8.34E+01	1.28E+06	5.47E+01	3.64E+02
TPH (>EC12-16) aromatic	1.94E+03	2.15E+06	1.78E+03	1.52E+02	1.28E+06	1.31E+02	2.37E+01
TPH (>EC16-21) aromatic	3.54E+04	5.95E+06	1.34E+03	3.06E+02	6.38E+05	2.47E+02	5.37E+01
TPH (>EC21-35) aromatic	3.99E+06	2.67E+07	1.34E+03	2.66E+03	6.38E+05	8.90E+02	4.83E+00
TPH (>EC35-44) aromatic	3.99E+06	2.67E+07	1.34E+03	2.66E+03	6.38E+05	8.90E+02	4.83E+00
Naphthalene	1.64E+00	3.17E+04	1.58E+03	2.72E+01	2.93E+04	1.55E+00	7.64E+01
Acenaphthylene	3.27E+03	1.26E+07	4.85E+03	1.84E+02	2.55E+06	1.68E+02	8.61E+01
Acenaphthene	3.47E+03	1.32E+07	4.85E+03	2.28E+02	2.55E+06	2.05E+02	5.70E+01
Fluorene	4.37E+03	1.17E+07	3.23E+03	1.79E+02	1.70E+06	1.63E+02	3.09E+01
Phenanthrene	5.09E+03	6.29E+06	1.00E+03	1.03E+02	5.30E+05	9.17E+01	3.60E+01
Anthracene	1.09E+05	1.48E+08	2.43E+04	2.55E+03	1.27E+07	2.26E+03	1.17E+00
Fluoranthene	2.84E+04	1.26E+07	1.01E+03	3.49E+02	5.31E+05	2.57E+02	1.89E+01
Pyrene	6.50E+04	2.87E+07	2.42E+03	7.43E+02	1.27E+06	5.63E+02	2.20E+00
Benzo(a)anthracene	2.40E+01	3.37E+03	1.25E+01	2.11E+01	6.37E+01	5.41E+00	1.71E+00
Chrysene	2.53E+02	5.87E+03	2.51E+01	2.90E+01	1.27E+02	1.16E+01	4.40E-01
Benzo(b)fluoranthene	9.32E+01	1.05E+03	3.15E+00	7.43E+00	1.61E+01	1.90E+00	1.22E+00
Benzo(k)fluoranthene	4.04E+03	3.28E+04	8.33E+01	2.85E+02	4.25E+02	5.51E+01	6.87E-01
Benzo(a)pyrene	1.04E+02	9.12E+02	2.51E+00	7.36E+00	1.27E+01	1.60E+00	9.11E-01
Indeno(123-cd)pyrene	8.78E+02	1.10E+04	3.58E+01	6.93E+01	1.83E+02	2.04E+01	6.14E-02
Dibenzo(ah)anthracene	5.23E+00	1.13E+02	2.51E-01	1.11E+00	1.27E+00	1.70E-01	3.93E-03

Residential Pathway Specific Assessment Sub Criteria derived May 2015 1% Organic Matter	Vapour Inhalation (Indoors)	Vapour Inhalation (Outdoors)	Soil Ingestion & dermal contact	Ingestion of Contaminated Vegetables and soil attached to vegetables	Particulate Dust Inhalation	Residential GSAC	Soil Saturation Limit
Benzo(g,h,i)perylene	***2.34E+04***	***1.83E+05***	2.78E+02	***2.77E+03***	1.40E+03	***2.12E+02***	1.54E-02
Tetrachloroethene (PCE)	1.26E-01	***2.48E+04***	4.92E+02	4.36E+00	2.34E+05	1.22E-01	4.24E+02
Trichloroethene (TCE)	1.21E-02	***2.44E+03***	4.45E+01	2.74E-01	2.42E+04	1.15E-02	1.54E+03
***cis*-1,2-Dichloroethene**	1.20E-01	***2.33E+04***	4.82E+02	1.75E+00	2.30E+05	1.12E-01	3.94E+03
Vinyl Chloride (VC)	5.43E-04	3.59E+02	1.25E+00	3.70E-03	1.27E+04	4.73E-04	1.36E+03
1,1,2,2-Tetrachloroethane (PCA)	2.76E+00	***1.17E+05***	5.07E+02	2.72E+00	2.41E+05	1.37E+00	2.67E+03
1,1,1-Trichloroethane (TCA)	6.33E+00	***1.79E+06***	5.34E+04	3.22E+02	2.46E+07	6.21E+00	1.43E+03
1,2-Dichloroethane	6.46E-03	8.09E+02	1.07E+01	3.07E-02	5.10E+03	5.33E-03	3.41E+03
Carbon Tetrachloride	1.81E-02	***5.07E+03***	5.38E+02	3.00E+00	6.93E+04	1.80E-02	1.52E+03
Carbon disulphide	1.01E-01	***3.42E+04***	3.55E+02	3.20E+01	6.08E+05	1.01E-01	2.11E+03

ASC exceeds soil saturation limit

Residential Pathway Specific Assessment Sub Criteria derived May 2015 2.5% Organic matter	Vapour Inhalation (Indoors)	Vapour Inhalation (Outdoors)	Soil Ingestion & dermal contact	Ingestion of Contaminated Vegetables and soil attached to vegetables	Particulate Dust Inhalation	Residential GSAC	Soil Saturation Limit
	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	mg/kg	mg/kg
Arsenic	NR	NR	3.50E+01	4.29E+02	8.50E+01	3.24E+01	N/A
Barium	NR	NR	1.35E+03		4.25E+05	1.34E+03	N/A
Beryllium	NR	NR	1.56E+02	2.96E+03	1.21E+00	1.21E+00	N/A
Boron	NR	NR	1.08E+04	3.00E+02	3.65E+06	2.91E+02	N/A
Cadmium	NR	NR	1.21E+02	1.24E+01	1.27E+02	1.03E+01	N/A
Chromium III	NR	NR	1.98E+04	1.25E+06	6.37E+02	6.17E+02	N/A
Chromium VI	NR	NR	7.05E+01	1.22E+01	4.25E+00	4.25E+00	N/A
Copper	NR	NR	1.08E+04	3.54E+03	9.89E+03	2.10E+03	N/A
Lead						2.00E+02	N/A
Inorganic Mercury	NR	NR	5.71E+01	1.40E+02	2.55E+03	3.99E+01	N/A
Nickel	NR	NR	7.89E+02	1.64E+03	1.27E+02	1.27E+02	N/A
Selenium	NR	NR	4.31E+02	6.15E+02	1.36E+05	2.53E+02	N/A
Vanadium	NR	NR	1.17E+03	6.21E+02	1.03E+03	2.91E+02	N/A
Zinc	NR	NR	4.05E+04	4.13E+03	2.55E+07	3.74E+03	N/A
Cyanide (free)						4.30E+01	N/A
Cyanide (Complex)						2.13E+02	N/A
Phenol	5.39E+02	***5.28E+05***	6.56E+02	2.88E+02	3.22E+05	1.46E+02	8.15E+04
Benzene	4.99E-01	***7.68E+03***	2.58E+01	2.30E-01	5.95E+04	1.57E-01	2.26E+03
Toluene	1.41E+03	***1.30E+07***	1.98E+04	3.41E+02	5.92E+07	2.71E+02	1.92E+03
Ethylbenzene	1.37E+02	***9.44E+05***	8.88E+03	2.58E+02	3.11E+06	8.88E+01	1.22E+03
Total Xylene	1.31E+02	***7.89E+05***	1.60E+04	4.50E+02	2.28E+06	1.01E+02	1.12E+03
TPH (EC5-6) aliphatic	5.28E+01	***3.26E+06***	2.23E+05	***1.14E+04***	1.06E+08	5.25E+01	5.58E+02
TPH (>EC6-8) aliphatic	1.57E+02	***5.62E+06***	2.23E+05	***3.75E+04***	1.06E+08	1.56E+02	3.22E+02
TPH (>EC8-10) aliphatic	4.44E+01	***7.20E+05***	4.45E+03	***5.38E+03***	6.16E+06	4.36E+01	1.90E+02

Residential Pathway Specific Assessment Sub Criteria derived May 2015 2.5% Organic matter	Vapour Inhalation (Indoors)	Vapour Inhalation (Outdoors)	Soil Ingestion & dermal contact	Ingestion of Contaminated Vegetables and soil attached to vegetables	Particulate Dust Inhalation	Residential GSAC	Soil Saturation Limit
TPH (>EC10-12) aliphatic	2.24E+02	1.62E+06	4.45E+03	4.00E+04	6.16E+06	2.12E+02	1.18E+02
TPH (>EC12-16) aliphatic	1.89E+03	4.69E+06	4.45E+03	3.64E+05	6.16E+06	1.32E+03	5.91E+01
TPH (>EC16-35) aliphatic	2.23E+05	1.34E+08	8.91E+04	1.16E+07	4.25E+07	6.32E+04	2.12E+01
TPH (>EC35-44) aliphatic	2.23E+05	1.34E+08	8.91E+04	1.16E+07	4.25E+07	6.32E+04	2.12E+01
TPH (>EC6-7) aromatic (benzene)	4.99E-01	7.68E+03	2.58E+01	2.30E-01	5.95E+04	1.56E-01	2.26E+03
TPH (>EC7-8) aromatic (toluene)	1.38E+03	1.28E+07	1.98E+04	3.41E+02	5.81E+07	2.70E+02	1.92E+03
TPH (>EC8-10) aromatic	7.88E+01	4.36E+05	1.78E+03	1.42E+02	1.28E+06	4.93E+01	1.50E+03
TPH (>EC10-12) aromatic	4.34E+02	1.02E+06	1.78E+03	2.07E+02	1.28E+06	1.30E+02	8.99E+02
TPH (>EC12-16) aromatic	4.83E+03	3.39E+06	1.78E+03	3.79E+02	1.28E+06	2.93E+02	5.91E+01
TPH (>EC16-21) aromatic	8.83E+04	9.40E+06	1.34E+03	7.61E+02	6.38E+05	4.82E+02	1.34E+02
TPH (>EC21-35) aromatic	9.98E+06	4.23E+07	1.34E+03	6.50E+03	6.38E+05	1.11E+03	1.21E+01
TPH (>EC35-44) aromatic	9.98E+06	4.23E+07	1.34E+03	6.50E+03	6.38E+05	1.11E+03	1.21E+01
Naphthalene	3.93E+00	4.91E+04	1.58E+03	6.63E+01	2.93E+04	3.70E+00	1.83E+02
Acenaphthylene	8.06E+03	1.97E+07	4.85E+03	4.56E+02	2.55E+06	3.96E+02	2.12E+02
Acenaphthene	8.57E+03	2.07E+07	4.85E+03	5.67E+02	2.55E+06	4.79E+02	1.41E+02
Fluorene	1.08E+04	1.84E+07	3.23E+03	4.45E+02	1.70E+06	3.77E+02	7.65E+01
Phenanthrene	1.27E+04	9.91E+06	1.00E+03	2.57E+02	5.30E+05	2.01E+02	8.96E+01
Anthracene	2.70E+05	2.33E+08	2.43E+04	6.34E+03	1.27E+07	4.93E+03	2.91E+00
Fluoranthene	7.08E+04	2.00E+07	1.01E+03	8.68E+02	5.31E+05	4.63E+02	4.73E+01
Pyrene	1.62E+05	4.54E+07	2.42E+03	1.85E+03	1.27E+06	1.04E+03	5.49E+00
Benzo(a)anthracene	6.00E+01	5.32E+03	1.25E+01	5.18E+01	6.37E+01	7.60E+00	4.28E+00
Chrysene	6.32E+02	9.28E+03	2.51E+01	7.15E+01	1.27E+02	1.58E+01	1.10E+00
Benzo(b)fluoranthene	2.33E+02	1.66E+03	3.15E+00	1.81E+01	1.61E+01	2.28E+00	3.04E+00
Benzo(k)fluoranthene	1.01E+04	5.19E+04	8.33E+01	6.87E+02	4.25E+02	6.27E+01	1.72E+00
Benzo(a)pyrene	2.61E+02	1.44E+03	2.51E+00	1.78E+01	1.27E+01	1.86E+00	2.28E+00
Indeno(123-cd)pyrene	2.20E+03	1.74E+04	3.58E+01	1.70E+02	1.83E+02	2.51E+01	5.30E-01

Residential Pathway Specific Assessment Sub Criteria derived May 2015 2.5% Organic matter	Vapour Inhalation (Indoors)	Vapour Inhalation (Outdoors)	Soil Ingestion & dermal contact	Ingestion of Contaminated Vegetables and soil attached to vegetables	Particulate Dust Inhalation	Residential GSAC	Soil Saturation Limit
Dibenzo(ah)anthracene	***1.31E+01***	***1.79E+02***	2.51E-01	***2.65E+00***	1.27E+00	***1.91E-01***	9.82E-03
Benzo(g,h,i)perylene	***5.85E+04***	***2.89E+05***	2.78E+02	***6.27E+03***	1.40E+03	***2.23E+02***	3.85E-02
Tetrachloroethene (PCE)	2.82E-01	***3.71E+04***	4.92E+02	1.02E+01	2.34E+05	2.74E-01	9.51E+02
Trichloroethene (TCE)	2.52E-02	***3.53E+03***	4.45E+01	6.09E-01	2.42E+04	2.42E-02	3.22E+03
***cis*-1,2-Dichloroethene**	2.02E-01	***3.02E+04***	4.82E+02	3.35E+00	2.30E+05	1.90E-01	6.61E+03
Vinyl Chloride (VC)	7.02E-04	4.08E+02	1.25E+00	6.67E-03	1.27E+04	6.35E-04	1.76E+03
1,1,2,2-Tetrachloroethane (PCA)	5.65E+00	***1.68E+05***	5.07E+02	5.92E+00	2.41E+05	2.87E+00	5.46E+03
1,1,1-Trichloroethane (TCA)	1.29E+01	***2.55E+06***	5.34E+04	7.06E+02	2.46E+07	1.27E+01	2.92E+03
1,2-Dichloroethane	9.32E-03	9.72E+02	1.07E+01	5.56E-02	5.10E+03	7.98E-03	4.91E+03
Carbon Tetrachloride	3.97E-02	***7.50E+03***	5.38E+02	6.95E+00	6.93E+04	3.95E-02	3.32E+03
Carbon disulphide	2.02E-01	***4.83E+04***	3.55E+02	6.84E+01	6.08E+05	2.01E-01	4.21E+03

ASC exceeds soil saturation limit

Residential Pathway Specific Assessment Sub Criteria derived May 2015 6% Organic matter	Vapour Inhalation (Indoors)	Vapour Inhalation (Outdoors)	Soil Ingestion & dermal contact	Ingestion of Contaminated Vegetables and soil attached to vegetables	Particulate Dust Inhalation	Residential GSAC	Soil Saturation Limit
	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	mg/kg	mg/kg
Arsenic	NR	NR	3.50E+01	4.29E+02	8.50E+01	3.24E+01	N/A
Barium	NR	NR	1.35E+03		4.25E+05	1.34E+03	N/A
Beryllium	NR	NR	1.56E+02	2.96E+03	1.21E+00	1.21E+00	N/A
Boron	NR	NR	1.08E+04	3.00E+02	3.65E+06	2.91E+02	N/A
Cadmium	NR	NR	1.21E+02	1.24E+01	1.27E+02	1.03E+01	N/A
Chromium III	NR	NR	1.98E+04	1.25E+06	6.37E+02	6.17E+02	N/A
Chromium VI	NR	NR	7.05E+01	1.22E+01	4.25E+00	4.25E+00	N/A
Copper	NR	NR	1.08E+04	3.54E+03	9.89E+03	2.10E+03	N/A
Lead						2.00E+02	N/A
Inorganic Mercury	NR	NR	5.71E+01	1.40E+02	2.55E+03	3.99E+01	N/A
Nickel	NR	NR	7.89E+02	1.64E+03	1.27E+02	1.27E+02	N/A
Selenium	NR	NR	4.31E+02	6.15E+02	1.36E+05	2.53E+02	N/A
Vanadium	NR	NR	1.17E+03	6.21E+02	1.03E+03	2.91E+02	N/A
Zinc	NR	NR	4.05E+04	4.13E+03	2.55E+07	3.74E+03	N/A
Cyanide (free)						4.30E+01	N/A
Cyanide (Complex)						2.13E+02	N/A
Phenol	9.95E+02	***7.17E+05***	6.56E+02	5.72E+02	3.22E+05	2.34E+02	1.74E+05
Benzene	1.04E+00	***1.11E+04***	2.58E+01	4.98E-01	5.95E+04	3.32E-01	4.71E+03
Toluene	3.20E+03	***1.97E+07***	1.98E+04	7.89E+02	5.92E+07	6.13E+02	4.36E+03
Ethylbenzene	3.22E+02	***1.44E+06***	8.88E+03	6.09E+02	3.11E+06	2.06E+02	2.84E+03
Total Xylene	3.06E+02	***1.21E+06***	1.60E+04	1.06E+03	2.28E+06	2.34E+02	2.62E+03
TPH (EC5-6) aliphatic	1.09E+02	***4.68E+06***	2.23E+05	***2.62E+04***	1.06E+08	1.08E+02	1.15E+03
TPH (>EC6-8) aliphatic	3.59E+02	***8.49E+06***	2.23E+05	***8.91E+04***	1.06E+08	3.57E+02	7.36E+02
TPH (>EC8-10) aliphatic	1.06E+02	***1.11E+06***	4.45E+03	***1.27E+04***	6.16E+06	1.03E+02	4.51E+02

Residential Pathway Specific Assessment Sub Criteria derived May 2015 6% Organic matter	Vapour Inhalation (Indoors)	Vapour Inhalation (Outdoors)	Soil Ingestion & dermal contact	Ingestion of Contaminated Vegetables and soil attached to vegetables	Particulate Dust Inhalation	Residential GSAC	Soil Saturation Limit
TPH (>EC10-12) aliphatic	5.38E+02	2.51E+06	4.45E+03	8.76E+04	6.16E+06	4.77E+02	2.83E+02
TPH (>EC12-16) aliphatic	4.53E+03	7.27E+06	4.45E+03	4.67E+05	6.16E+06	2.23E+03	1.42E+02
TPH (>EC16-35) aliphatic	5.34E+05	2.07E+08	8.91E+04	1.17E+07	4.25E+07	7.57E+04	5.09E+01
TPH (>EC35-44) aliphatic	5.34E+05	2.07E+08	8.91E+04	1.17E+07	4.25E+07	7.57E+04	5.09E+01
TPH (>EC6-7) aromatic (benzene)	1.04E+00	1.11E+04	2.58E+01	4.98E-01	5.95E+04	3.32E-01	4.71E+03
TPH (>EC7-8) aromatic (toluene)	3.14E+03	1.93E+07	1.98E+04	7.89E+02	5.81E+07	6.11E+02	4.36E+03
TPH (>EC8-10) aromatic	1.88E+02	6.73E+05	1.78E+03	3.38E+02	1.28E+06	1.13E+02	3.58E+03
TPH (>EC10-12) aromatic	1.04E+03	1.58E+06	1.78E+03	4.95E+02	1.28E+06	2.82E+02	2.15E+03
TPH (>EC12-16) aromatic	1.16E+04	5.25E+06	1.78E+03	9.07E+02	1.28E+06	5.71E+02	1.42E+02
TPH (>EC16-21) aromatic	2.12E+05	1.46E+07	1.34E+03	1.81E+03	6.38E+05	7.66E+02	3.21E+02
TPH (>EC21-35) aromatic	2.39E+07	6.54E+07	1.34E+03	1.48E+04	6.38E+05	1.23E+03	2.90E+01
TPH (>EC35-44) aromatic	2.39E+07	6.54E+07	1.34E+03	1.48E+04	6.38E+05	1.23E+03	2.90E+01
Naphthalene	9.28E+00	7.55E+04	1.58E+03	1.57E+02	2.93E+04	8.71E+00	4.32E+02
Acenaphthylene	1.92E+04	3.05E+07	4.85E+03	1.09E+03	2.55E+06	8.50E+02	5.06E+02
Acenaphthene	2.05E+04	3.20E+07	4.85E+03	1.36E+03	2.55E+06	1.01E+03	3.36E+02
Fluorene	2.58E+04	2.85E+07	3.23E+03	1.06E+03	1.70E+06	7.74E+02	1.83E+02
Phenanthrene	3.03E+04	1.53E+07	1.00E+03	6.14E+02	5.30E+05	3.75E+02	2.14E+02
Anthracene	6.48E+05	3.60E+08	2.43E+04	1.52E+04	1.27E+07	9.21E+03	6.96E+00
Fluoranthene	1.70E+05	3.09E+07	1.01E+03	2.07E+03	5.31E+05	6.75E+02	1.12E+02
Pyrene	3.89E+05	7.03E+07	2.42E+03	4.40E+03	1.27E+06	1.55E+03	1.32E+01
Benzo(a)anthracene	1.44E+02	8.24E+03	1.25E+01	1.20E+02	6.37E+01	9.01E+00	1.03E+01
Chrysene	1.52E+03	1.44E+04	2.51E+01	1.67E+02	1.27E+02	1.84E+01	2.64E+00
Benzo(b)fluoranthene	5.59E+02	2.57E+03	3.15E+00	4.12E+01	1.61E+01	2.47E+00	7.29E+00
Benzo(k)fluoranthene	2.43E+04	8.03E+04	8.33E+01	1.53E+03	4.25E+02	6.63E+01	4.12E+00
Benzo(a)pyrene	6.27E+02	2.23E+03	2.51E+00	4.01E+01	1.27E+01	1.98E+00	5.46E+00
Indeno(123-cd)pyrene	5.27E+03	2.69E+04	3.58E+01	3.90E+02	1.83E+02	2.76E+01	3.68E-01

Residential Pathway Specific Assessment Sub Criteria derived May 2015 6% Organic matter	Vapour Inhalation (Indoors)	Vapour Inhalation (Outdoors)	Soil Ingestion & dermal contact	Ingestion of Contaminated Vegetables and soil attached to vegetables	Particulate Dust Inhalation	Residential GSAC	Soil Saturation Limit
Dibenzo(ah)anthracene	***3.14E+01***	***2.78E+02***	2.51E-01	***5.77E+00***	1.27E+00	***2.01E-01***	2.36E-02
Benzo(g,h,i)perylene	***1.41E+05***	***4.48E+05***	2.78E+02	***1.24E+04***	1.40E+03	***2.27E+02***	9.23E-02
Tetrachloroethene (PCE)	6.47E-01	***5.61E+04***	4.92E+02	2.38E+01	2.34E+05	6.29E-01	2.18E+03
Trichloroethene (TCE)	5.60E-02	5.25E+03	4.45E+01	1.39E+00	2.42E+04	5.38E-02	7.14E+03
***cis*-1,2-Dichloroethene**	3.93E-01	***4.22E+04***	4.82E+02	6.91E+00	2.30E+05	3.72E-01	1.29E+04
Vinyl Chloride (VC)	1.07E-03	5.05E+02	1.25E+00	1.22E-02	1.27E+04	9.83E-04	2.69E+03
1,1,2,2-Tetrachloroethane (PCA)	1.24E+01	***2.49E+05***	5.07E+02	1.33E+01	2.41E+05	6.34E+00	1.20E+04
1,1,1-Trichloroethane (TCA)	2.84E+01	***3.78E+06***	5.34E+04	1.59E+03	2.46E+07	2.79E+01	6.39E+03
1,2-Dichloroethane	1.60E-02	1.27E+03	1.07E+01	1.06E-01	5.10E+03	1.39E-02	8.43E+03
Carbon Tetrachloride	8.99E-02	***1.13E+04***	5.38E+02	1.61E+01	6.93E+04	8.94E-02	7.54E+03
Carbon disulphide	4.37E-01	***7.10E+04***	3.55E+02	1.52E+02	6.08E+05	4.35E-01	9.11E+03

ASC exceeds soil saturation limit

Commercial/Industrial Pathway Specific Assessment Sub Criteria derived May 2015 1% Organic matter	Vapour Inhalation (Indoors)	Vapour Inhalation (Outdoors)	Soil Ingestion & Dermal Contact	Particulate Dust Inhalation	Commercial GSAC	Soil Saturation Limit
	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	mg/kg
Arsenic	NR	NR	6.35E+02	6.95E+02	6.40E+02	N/A
Barium	NR	NR	2.22E+04	3.48E+06	2.21E+04	N/A
Beryllium	NR	NR	3.97E+03	1.24E+01	1.24E+01	N/A
Boron	NR	NR	2.38E+05	2.99E+07	2.36E+05	N/A
Cadmium	NR	NR	3.99E+02	2.43E+02	2.30E+02	N/A
Chromium III	NR	NR	3.31E+05	9.09E+03	8.84E+03	N/A
Chromium VI	NR	NR	1.79E+03	3.48E+01	3.48E+01	N/A
Copper	NR	NR	1.89E+05	9.50E+04	6.33E+04	N/A
Lead					2.33E+03	N/A
Inorganic Mercury	NR	NR	1.18E+03	2.09E+04	3.60E+03	N/A
Nickel	NR	NR	2.22E+04	1.04E+03	1.04E+03	N/A
Selenium	NR	NR	1.23E+04	1.93E+06	1.30E+04	N/A
Vanadium	NR	NR	2.15E+04	9.58E+03	6.63E+03	N/A
Zinc	NR	NR	7.35E+05	2.09E+08	7.33E+05	N/A
Cyanide (free)					4.30E+01	N/A
Cyanide (Complex)					2.13E+02	N/A
Phenol	***8.34E+04***	***1.09E+06***	4.07E+04	3.28E+06	2.65E+04	4.16E+04
Benzene	2.97E+01	***1.17E+04***	5.53E+02	4.87E+05	2.81E+01	1.22E+03
Toluene	***6.91E+04***	***1.83E+07***	4.25E+05	4.86E+08	***5.92E+04***	8.69E+02
Ethylbenzene	***6.28E+03***	***1.30E+06***	1.91E+05	2.57E+07	***6.05E+03***	5.18E+02
Total Xylene	***6.43E+03***	***1.17E+06***	3.43E+05	2.03E+07	***6.28E+03***	4.78E+02
TPH (EC5-6) aliphatic	***3.31E+03***	***5.01E+06***	4.77E+06	8.69E+08	***3.31E+03***	3.04E+02
TPH (>EC6-8) aliphatic	***8.06E+03***	***7.82E+06***	4.77E+06	8.69E+08	***8.04E+03***	1.44E+02
TPH (>EC8-10) aliphatic	***2.09E+03***	***9.59E+05***	9.53E+04	5.04E+07	***2.04E+03***	7.77E+01
TPH (>EC10-12) aliphatic	***1.04E+04***	***2.13E+06***	9.53E+04	5.04E+07	***9.33E+03***	4.75E+01

Commercial/Industrial Pathway Specific Assessment Sub Criteria derived May 2015 1% Organic matter	Vapour Inhalation (Indoors)	Vapour Inhalation (Outdoors)	Soil Ingestion & Dermal Contact	Particulate Dust Inhalation	Commercial GSAC	Soil Saturation Limit
TPH (>EC12-16) aliphatic	8.68E+04	6.18E+06	9.53E+04	5.04E+07	4.51E+04	2.37E+01
TPH (>EC16-35) aliphatic	1.02E+07	1.76E+08	1.91E+06	3.48E+08	1.59E+06	8.48E+00
TPH (>EC35-44) aliphatic	1.02E+07	1.76E+08	1.91E+06	3.48E+08	1.59E+06	8.48E+00
TPH (>EC6-7) aromatic (benzene)	4.75E+01	1.17E+04	5.53E+02	4.87E+05	4.36E+01	1.22E+03
TPH (>EC7-8) aromatic (toluene)	6.88E+04	1.83E+07	4.25E+05	4.84E+08	5.90E+04	8.69E+02
TPH (>EC8-10) aromatic	3.70E+03	5.80E+05	3.81E+04	1.04E+07	3.35E+03	6.13E+02
TPH (>EC10-12) aromatic	2.02E+04	1.35E+06	3.81E+04	1.04E+07	1.31E+04	3.64E+02
TPH (>EC12-16) aromatic	2.25E+05	4.48E+06	3.81E+04	1.04E+07	3.22E+04	2.37E+01
TPH (>EC16-21) aromatic	4.59E+06	1.24E+07	2.86E+04	5.22E+06	2.82E+04	5.37E+01
TPH (>EC21-35) aromatic	7.57E+08	5.56E+07	2.86E+04	5.22E+06	2.84E+04	4.83E+00
TPH (>EC35-44) aromatic	7.57E+08	5.56E+07	2.86E+04	5.22E+06	2.84E+04	4.83E+00
Naphthalene	2.06E+02	7.85E+04	3.64E+04	2.85E+05	2.04E+02	7.64E+01
Acenaphthylene	3.76E+05	2.62E+07	1.10E+05	2.09E+07	8.45E+04	8.61E+01
Acenaphthene	3.87E+05	2.74E+07	1.10E+05	2.09E+07	8.50E+04	5.70E+01
Fluorene	5.10E+05	2.44E+07	7.31E+04	1.39E+07	6.35E+04	3.09E+01
Phenanthrene	6.87E+05	1.31E+07	2.28E+04	4.34E+06	2.19E+04	3.60E+01
Anthracene	1.41E+07	3.07E+08	5.49E+05	1.04E+08	5.25E+05	1.17E+00
Fluoranthene	4.36E+06	2.63E+07	2.29E+04	4.34E+06	2.26E+04	1.89E+01
Pyrene	1.02E+07	5.98E+07	5.49E+04	1.04E+07	5.43E+04	2.20E+00
Benzo(a)anthracene	4.04E+03	7.01E+03	2.84E+02	5.21E+02	1.71E+02	1.71E+00
Chrysene	5.01E+04	1.22E+04	5.67E+02	1.04E+03	3.54E+02	4.40E-01
Benzo(b)fluoranthene	1.86E+04	2.18E+03	7.13E+01	1.32E+02	4.52E+01	1.22E+00
Benzo(k)fluoranthene	8.14E+05	6.83E+04	1.88E+03	3.48E+03	1.20E+03	6.87E-01
Benzo(a)pyrene	2.10E+04	1.90E+03	5.67E+01	1.04E+02	3.60E+01	9.11E-01
Indeno(123-cd)pyrene	1.75E+05	2.29E+04	8.10E+02	1.49E+03	5.12E+02	6.14E-02
Dibenzo(ah)anthracene	1.01E+03	2.36E+02	5.67E+00	1.04E+01	3.60E+00	3.93E-03
Benzo(g,h,i)perylene	4.64E+06	3.81E+05	6.29E+03	1.15E+04	4.02E+03	1.54E-02

Commercial/Industrial Pathway Specific Assessment Sub Criteria derived May 2015 1% Organic matter	Vapour Inhalation (Indoors)	Vapour Inhalation (Outdoors)	Soil Ingestion & Dermal Contact	Particulate Dust Inhalation	Commercial GSAC	Soil Saturation Limit
Tetrachloroethene (PCE)	1.98E+01	***7.63E+04***	1.12E+04	2.83E+06	1.97E+01	4.24E+02
Trichloroethene (TCE)	1.31E+00	***5.07E+03***	9.53E+02	1.98E+05	1.30E+00	1.54E+03
***cis*-1,2-Dichloroethene**	1.45E+01	***5.26E+04***	1.12E+04	2.04E+06	1.45E+01	3.94E+03
Vinyl Chloride (VC)	6.31E-02	7.47E+02	2.67E+01	1.04E+05	6.29E-02	1.36E+03
1,1,2,2-Tetrachloroethane (PCA)	2.98E+02	***2.49E+05***	1.10E+04	2.01E+06	2.90E+02	2.67E+03
1,1,1-Trichloroethane (TCA)	7.01E+02	***3.81E+06***	1.14E+06	2.07E+08	7.00E+02	1.43E+03
1,2-Dichloroethane	7.14E-01	1.68E+03	2.29E+02	4.17E+04	7.11E-01	3.41E+03
Carbon Tetrachloride	3.04E+00	***1.65E+04***	7.62E+03	8.85E+05	3.04E+00	1.52E+03
Carbon disulphide	1.16E+01	***7.12E+04***	9.53E+04	4.97E+06	1.16E+01	2.11E+03

ASC exceeds soil saturation limit

Commercial/Industrial Pathway Specific Assessment Sub Criteria derived May 2015 2.5% Organic matter	Vapour Inhalation (Indoors)	Vapour Inhalation (Outdoors)	Soil Ingestion & Dermal Contact	Particulate Dust Inhalation	Commercial GSAC	Soil Saturation Limit
	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	mg/kg
Arsenic	NR	NR	6.35E+02	6.95E+02	6.40E+02	N/A
Barium	NR	NR	2.22E+04	3.48E+06	2.21E+04	N/A
Beryllium	NR	NR	3.97E+03	1.24E+01	1.24E+01	N/A
Boron	NR	NR	2.38E+05	2.99E+07	2.36E+05	N/A
Cadmium	NR	NR	3.99E+02	2.43E+02	2.30E+02	N/A
Chromium III	NR	NR	3.31E+05	9.09E+03	8.84E+03	N/A
Chromium VI	NR	NR	1.79E+03	3.48E+01	3.48E+01	N/A
Copper	NR	NR	1.89E+05	9.50E+04	6.33E+04	N/A
Lead					2.33E+03	N/A
Inorganic Mercury	NR	NR	1.18E+03	2.09E+04	3.60E+03	N/A
Nickel	NR	NR	2.22E+04	1.04E+03	1.04E+03	N/A
Selenium	NR	NR	1.23E+04	1.93E+06	1.30E+04	N/A
Vanadium	NR	NR	2.15E+04	9.58E+03	6.63E+03	N/A
Zinc	NR	NR	7.35E+05	2.09E+08	7.33E+05	N/A
Cyanide (free)					4.30E+01	N/A
Cyanide (Complex)					2.13E+02	N/A
Phenol	***1.31E+05***	***1.37E+06***	4.07E+04	3.28E+06	3.01E+04	8.15E+04
Benzene	5.53E+01	***1.60E+04***	5.53E+02	4.87E+05	5.01E+01	2.26E+03
Toluene	***1.52E+05***	***2.72E+07***	4.25E+05	4.86E+08	***1.12E+05***	1.92E+03
Ethylbenzene	***1.47E+04***	***1.99E+06***	1.91E+05	2.57E+07	***1.36E+04***	1.22E+03
Total Xylene	***1.51E+04***	***1.79E+06***	3.43E+05	2.03E+07	***1.43E+04***	1.12E+03
TPH (EC5-6) aliphatic	***6.07E+03***	***6.79E+06***	4.77E+06	8.69E+08	***6.06E+03***	5.58E+02
TPH (>EC6-8) aliphatic	***1.80E+04***	***1.17E+07***	4.77E+06	8.69E+08	***1.79E+04***	3.22E+02
TPH (>EC8-10) aliphatic	***5.11E+03***	***1.50E+06***	9.53E+04	5.04E+07	***4.83E+03***	1.90E+02
TPH (>EC10-12) aliphatic	***2.58E+04***	***3.37E+06***	9.53E+04	5.04E+07	***2.02E+04***	1.18E+02

Commercial/Industrial Pathway Specific Assessment Sub Criteria derived May 2015 2.5% Organic matter	Vapour Inhalation (Indoors)	Vapour Inhalation (Outdoors)	Soil Ingestion & Dermal Contact	Particulate Dust Inhalation	Commercial GSAC	Soil Saturation Limit
TPH (>EC12-16) aliphatic	2.17E+05	9.77E+06	9.53E+04	5.04E+07	6.57E+04	5.91E+01
TPH (>EC16-35) aliphatic	2.56E+07	2.79E+08	1.91E+06	3.48E+08	1.76E+06	2.12E+01
TPH (>EC35-44) aliphatic	2.56E+07	2.79E+08	1.91E+06	3.48E+08	1.76E+06	2.12E+01
TPH (>EC6-7) aromatic (benzene)	5.53E+01	1.60E+04	5.53E+02	4.87E+05	5.01E+01	2.26E+03
TPH (>EC7-8) aromatic (toluene)	1.52E+05	2.71E+07	4.25E+05	4.84E+08	1.11E+05	1.92E+03
TPH (>EC8-10) aromatic	9.06E+03	9.08E+05	3.81E+04	1.04E+07	7.26E+03	1.50E+03
TPH (>EC10-12) aromatic	4.99E+04	2.13E+06	3.81E+04	1.04E+07	2.13E+04	8.99E+02
TPH (>EC12-16) aromatic	5.59E+05	7.06E+06	3.81E+04	1.04E+07	3.54E+04	5.91E+01
TPH (>EC16-21) aromatic	1.15E+07	1.96E+07	2.86E+04	5.22E+06	2.83E+04	1.34E+02
TPH (>EC21-35) aromatic	1.89E+09	8.79E+07	2.86E+04	5.22E+06	2.84E+04	1.21E+01
TPH (>EC35-44) aromatic	1.89E+09	8.79E+07	2.86E+04	5.22E+06	2.84E+04	1.21E+01
Naphthalene	4.93E+02	1.21E+05	3.64E+04	2.85E+05	4.84E+02	1.83E+02
Acenaphthylene	9.26E+05	4.11E+07	1.10E+05	2.09E+07	9.76E+04	2.12E+02
Acenaphthene	9.56E+05	4.31E+07	1.10E+05	2.09E+07	9.80E+04	1.41E+02
Fluorene	1.26E+06	3.84E+07	7.31E+04	1.39E+07	6.86E+04	7.65E+01
Phenanthrene	1.71E+06	2.07E+07	2.28E+04	4.34E+06	2.24E+04	8.96E+01
Anthracene	3.51E+07	4.84E+08	5.49E+05	1.04E+08	5.37E+05	2.91E+00
Fluoranthene	1.09E+07	4.16E+07	2.29E+04	4.34E+06	2.27E+04	4.73E+01
Pyrene	2.54E+07	9.45E+07	5.49E+04	1.04E+07	5.45E+04	5.49E+00
Benzo(a)anthracene	1.01E+04	1.11E+04	2.84E+02	5.21E+02	1.77E+02	4.28E+00
Chrysene	1.25E+05	1.93E+04	5.67E+02	1.04E+03	3.59E+02	1.10E+00
Benzo(b)fluoranthene	4.66E+04	3.45E+03	7.13E+01	1.32E+02	4.57E+01	3.04E+00
Benzo(k)fluoranthene	2.03E+06	1.08E+05	1.88E+03	3.48E+03	1.21E+03	1.72E+00
Benzo(a)pyrene	5.26E+04	3.00E+03	5.67E+01	1.04E+02	3.63E+01	2.28E+00
Indeno(123-cd)pyrene	4.38E+05	3.62E+04	8.10E+02	1.49E+03	5.17E+02	5.30E-01
Dibenzo(ah)anthracene	2.53E+03	3.73E+02	5.67E+00	1.04E+01	3.63E+00	9.82E-03
Benzo(g,h,i)perylene	1.16E+07	6.02E+05	6.29E+03	1.15E+04	4.03E+03	3.85E-02

Commercial/Industrial Pathway Specific Assessment Sub Criteria derived May 2015 2.5% Organic matter	Vapour Inhalation (Indoors)	Vapour Inhalation (Outdoors)	Soil Ingestion & Dermal Contact	Particulate Dust Inhalation	Commercial GSAC	Soil Saturation Limit
Tetrachloroethene (PCE)	4.43E+01	***1.14E+05***	1.12E+04	2.83E+06	4.41E+01	9.51E+02
Trichloroethene (TCE)	2.74E+00	***7.34E+03***	9.53E+02	1.98E+05	2.73E+00	3.22E+03
***cis*-1,2-Dichloroethene**	2.43E+01	***6.81E+04***	1.12E+04	2.04E+06	2.42E+01	6.61E+03
Vinyl Chloride (VC)	8.16E-02	8.50E+02	2.67E+01	1.04E+05	8.13E-02	1.76E+03
1,1,2,2-Tetrachloroethane (PCA)	6.11E+02	***3.56E+05***	1.10E+04	2.01E+06	5.78E+02	5.46E+03
1,1,1-Trichloroethane (TCA)	1.43E+03	***5.46E+06***	1.14E+06	2.07E+08	1.43E+03	2.92E+03
1,2-Dichloroethane	1.03E+00	2.02E+03	2.29E+02	4.17E+04	1.02E+00	4.91E+03
Carbon Tetrachloride	6.67E+00	***2.44E+04***	7.62E+03	8.85E+05	6.66E+00	3.32E+03
Carbon disulphide	2.32E+01	***1.00E+05***	9.53E+04	4.97E+06	2.32E+01	4.21E+03

ASC exceeds soil saturation limit

Commercial/Industrial Pathway Specific Assessment Sub Criteria derived May 2015 6% Organic matter	Vapour Inhalation (Indoors)	Vapour Inhalation (Outdoors)	Soil Ingestion & Dermal Contact	Particulate Dust Inhalation	Commercial GSAC	Soil Saturation Limit
	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	mg/kg
Arsenic	NR	NR	6.35E+02	6.95E+02	6.40E+02	N/A
Barium	NR	NR	2.22E+04	3.48E+06	2.21E+04	N/A
Beryllium	NR	NR	3.97E+03	1.24E+01	1.24E+01	N/A
Boron	NR	NR	2.38E+05	2.99E+07	2.36E+05	N/A
Cadmium	NR	NR	3.99E+02	2.43E+02	2.30E+02	N/A
Chromium III	NR	NR	3.31E+05	9.09E+03	8.84E+03	N/A
Chromium VI	NR	NR	1.79E+03	3.48E+01	3.48E+01	N/A
Copper	NR	NR	1.89E+05	9.50E+04	6.33E+04	N/A
Lead					2.33E+03	N/A
Inorganic Mercury	NR	NR	1.18E+03	2.09E+04	3.60E+03	N/A
Nickel	NR	NR	2.22E+04	1.04E+03	1.04E+03	N/A
Selenium	NR	NR	1.23E+04	1.93E+06	1.30E+04	N/A
Vanadium	NR	NR	2.15E+04	9.58E+03	6.63E+03	N/A
Zinc	NR	NR	7.35E+05	2.09E+08	7.33E+05	N/A
Cyanide (free)					4.30E+01	N/A
Cyanide (Complex)					2.13E+02	N/A
Phenol	***2.42E+05***	***1.86E+06***	4.07E+04	3.28E+06	3.39E+04	1.74E+05
Benzene	1.15E+02	***2.30E+04***	5.53E+02	4.87E+05	9.47E+01	4.71E+03
Toluene	***3.46E+05***	***4.11E+07***	4.25E+05	4.86E+08	***1.90E+05***	4.36E+03
Ethylbenzene	***3.45E+04***	***3.04E+06***	1.91E+05	2.57E+07	***2.89E+04***	2.84E+03
Total Xylene	***3.53E+04***	***2.74E+06***	3.43E+05	2.03E+07	***3.16E+04***	2.62E+03
TPH (EC5-6) aliphatic	***1.25E+04***	***9.74E+06***	4.77E+06	8.69E+08	***1.25E+04***	1.15E+03
TPH (>EC6-8) aliphatic	***4.12E+04***	***1.77E+07***	4.77E+06	8.69E+08	***4.08E+04***	7.36E+02
TPH (>EC8-10) aliphatic	***1.21E+04***	***2.31E+06***	9.53E+04	5.04E+07	***1.07E+04***	4.51E+02
TPH (>EC10-12) aliphatic	***6.18E+04***	***5.22E+06***	9.53E+04	5.04E+07	***3.72E+04***	2.83E+02

Commercial/Industrial Pathway Specific Assessment Sub Criteria derived May 2015 6% Organic matter	Vapour Inhalation (Indoors)	Vapour Inhalation (Outdoors)	Soil Ingestion & Dermal Contact	Particulate Dust Inhalation	Commercial GSAC	Soil Saturation Limit
TPH (>EC12-16) aliphatic	5.20E+05	1.51E+07	9.53E+04	5.04E+07	8.00E+04	1.42E+02
TPH (>EC16-35) aliphatic	6.14E+07	4.32E+08	1.91E+06	3.48E+08	1.83E+06	5.09E+01
TPH (>EC35-44) aliphatic	6.14E+07	4.32E+08	1.91E+06	3.48E+08	1.83E+06	5.09E+01
TPH (>EC6-7) aromatic (benzene)	1.15E+02	2.30E+04	5.53E+02	4.87E+05	9.48E+01	4.71E+03
TPH (>EC7-8) aromatic (toluene)	3.45E+05	4.09E+07	4.25E+05	4.84E+08	1.89E+05	4.36E+03
TPH (>EC8-10) aromatic	2.16E+04	1.40E+06	3.81E+04	1.04E+07	1.36E+04	3.58E+03
TPH (>EC10-12) aromatic	1.19E+05	3.29E+06	3.81E+04	1.04E+07	2.85E+04	2.15E+03
TPH (>EC12-16) aromatic	1.34E+06	1.09E+07	3.81E+04	1.04E+07	3.68E+04	1.42E+02
TPH (>EC16-21) aromatic	2.75E+07	3.03E+07	2.86E+04	5.22E+06	2.84E+04	3.21E+02
TPH (>EC21-35) aromatic	4.54E+09	1.36E+08	2.86E+04	5.22E+06	2.84E+04	2.90E+01
TPH (>EC35-44) aromatic	4.54E+09	1.36E+08	2.86E+04	5.22E+06	2.84E+04	2.90E+01
Naphthalene	1.16E+03	1.87E+05	3.64E+04	2.85E+05	1.11E+03	4.32E+02
Acenaphthylene	2.21E+06	6.35E+07	1.10E+05	2.09E+07	1.04E+05	5.06E+02
Acenaphthene	2.28E+06	6.67E+07	1.10E+05	2.09E+07	1.04E+05	3.36E+02
Fluorene	3.02E+06	5.94E+07	7.31E+04	1.39E+07	7.09E+04	1.83E+02
Phenanthrene	4.09E+06	3.20E+07	2.28E+04	4.34E+06	2.25E+04	2.14E+02
Anthracene	8.41E+07	7.50E+08	5.49E+05	1.04E+08	5.42E+05	6.96E+00
Fluoranthene	2.61E+07	6.44E+07	2.29E+04	4.34E+06	2.28E+04	1.12E+02
Pyrene	6.09E+07	1.46E+08	5.49E+04	1.04E+07	5.45E+04	1.32E+01
Benzo(a)anthracene	2.42E+04	1.72E+04	2.84E+02	5.21E+02	1.80E+02	1.03E+01
Chrysene	3.00E+05	2.99E+04	5.67E+02	1.04E+03	3.62E+02	2.64E+00
Benzo(b)fluoranthene	1.12E+05	5.34E+03	7.13E+01	1.32E+02	4.59E+01	7.29E+00
Benzo(k)fluoranthene	4.88E+06	1.67E+05	1.88E+03	3.48E+03	1.21E+03	4.12E+00
Benzo(a)pyrene	1.26E+05	4.65E+03	5.67E+01	1.04E+02	3.64E+01	5.46E+00
Indeno(123-cd)pyrene	1.05E+06	5.60E+04	8.10E+02	1.49E+03	5.20E+02	3.68E-01
Dibenzo(ah)anthracene	6.07E+03	5.78E+02	5.67E+00	1.04E+01	3.65E+00	2.36E-02
Benzo(g,h,i)perylene	2.78E+07	9.33E+05	6.29E+03	1.15E+04	4.04E+03	9.23E-02

Commercial/Industrial Pathway Specific Assessment Sub Criteria derived May 2015 6% Organic matter	Vapour Inhalation (Indoors)	Vapour Inhalation (Outdoors)	Soil Ingestion & Dermal Contact	Particulate Dust Inhalation	Commercial GSAC	Soil Saturation Limit
Tetrachloroethene (PCE)	1.02E+02	***1.73E+05***	1.12E+04	2.83E+06	1.01E+02	2.18E+03
Trichloroethene (TCE)	6.07E+00	***1.09E+04***	9.53E+02	1.98E+05	6.03E+00	7.14E+03
***cis*-1,2-Dichloroethene**	4.73E+01	***9.50E+04***	1.12E+04	2.04E+06	4.71E+01	1.29E+04
Vinyl Chloride (VC)	1.25E-01	1.05E+03	2.67E+01	1.04E+05	1.24E-01	2.69E+03
1,1,2,2-Tetrachloroethane (PCA)	1.34E+03	***5.27E+05***	1.10E+04	2.01E+06	1.19E+03	1.20E+04
1,1,1-Trichloroethane (TCA)	3.14E+03	***8.08E+06***	1.14E+06	2.07E+08	3.13E+03	6.39E+03
1,2-Dichloroethane	1.77E+00	2.65E+03	2.29E+02	4.17E+04	1.76E+00	8.43E+03
Carbon Tetrachloride	1.51E+01	***3.67E+04***	7.62E+03	8.85E+05	1.51E+01	7.54E+03
Carbon disulphide	5.01E+01	***1.48E+05***	9.53E+04	4.97E+06	5.01E+01	9.11E+03

ASC exceeds soil saturation limit

Appendix 6 : Leachate Assessment Results

*EQS Standard: Phenol and Benzene annual average of 300µg/l; Toluene 500µg/l for Freshwater, 400µg/l for Saltwater; 1,1,1-TCA 1,000µg/l.

Project Name:	Oxfordshire RFI
Project Number:	NTH2478
Assessment for:	Soil Leachate Assessment
Laboratory:	i2
Receptor:	Drinking Water
Receptor Water Hardness:	>200

BWB A CAF GROUP COMPANY

100 = Assessment Criteria Exceedance)

50 = M-BAT Bioavailability Assessment Required

	Contaminant	Units	Detection Limit	Guideline Concentration	Source	Number of Samples Above Detection Limit	Min	Max	No of Exceedences	DS117	DS123	DS116A	DS110	DS114	DS115	TP103	TP137	TP146	SA10	TP115	TP120	TP152	DS128	TP163	TP107
										0.25	0.7	0.25	1	0.4	0.5	0.5	0.3	0.4	0.40	1.2	2	0.3	0.5	0.3	0.4
Heavy Metals	Arsenic	µg/l	1	10	UK DWS	6	3.70	9.30	0	< 1.0	3.70	9.30	4.20	7.90	< 1.0	< 1.0	8.00	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	6.80	< 1.0	< 1.0
	Barium	mg/l	0.05	700	UK DWS	16	7.10	20.00	0	14.00	14.00	15.00	7.40	12.00	7.10	12.00	16.00	14.00	7.60	13.00	9.00	20.00	12.00	10.00	10.00
	Beryllium	µg/l	0.2	None Available		12	0.30	0.90	0	< 0.2	0.30	0.60	0.30	0.90	0.50	0.60	< 0.2	0.50	0.80	< 0.2	< 0.2	0.30	0.40	0.80	0.80
	Cadmium	µg/l	0.08	3	UK DWS	0	0.00	0.00	0	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	<0.08	< 0.08	<0.08	< 0.08
	Chromium III	µg/l	0.4	4.7	EQS Freshwater	16	0.40	8.90	1	1.00	3.60	8.90	0.50	1.90	0.80	2.00	3.50	3.10	0.70	1.60	0.40	3.00	0.70	1.10	0.80
	Copper	µg/l	0.7	2000	UK DWS	16	0.80	42.00	0	36.00	20.00	33.00	6.60	20.00	12.00	24.00	42.00	27.00	3.50	17.00	2.80	17.00	0.80	3.50	35.00
	Lead	µg/l	1	10	UK DWS	11	1.50	5.30	0	< 1.0	< 1.0	4.50	2.00	1.70	< 1.0	4.00	1.80	3.50	1.80	5.30	< 1.0	3.90	1.90	1.50	< 1.0
	Mercury	µg/l	0.5	1	UK DWS	0	0.00	0.00	0	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	<0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Nickel	µg/l	0.3	20	UK DWS	16	2.20	28.00	1	3.80	4.00	28.00	2.50	3.70	2.20	4.70	5.30	4.80	2.60	3.30	3.40	6.70	3.40	2.50	2.90
	Selenium	µg/l	4	10	UK DWS	1	6.70	6.70	0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	6.70	< 4.0	< 4.0	< 4.0	< 4.0	<4.0	<4.0	< 4.0	< 4.0
	Vanadium	µg/l	1.7	None Available		0	0.00	0.00	0	< 1.7	< 1.7	< 1.7	< 1.7	< 1.7	< 1.7	< 1.7	< 1.7	< 1.7	< 1.7	< 1.7	< 1.7	<1.7	< 1.7	< 1.7	< 1.7
	Zinc	µg/l	0.4	12.9	EQS Freshwater	16	4.20	20.00	7	17.00	18.00	15.00	12.00	20.00	6.80	13.00	18.00	12.00	10.00	8.90	4.60	9.00	4.20	4.60	17.00
	Boron	µg/l	10	300	UK DWS	16	11.00	47.00	0	32.00	34.00	36.00	11.00	16.00	14.00	14.00	31.00	15.00	18.00	47.00	32.00	40.00	29.00	33.00	30.00
Inorganics	pH	pH Units		6.5-10	UK DWS	16	7.30	8.60	0	7.70	7.30	8.60	8.20	7.90	8.20	8.10	7.50	7.90	8.10	8.00	8.20	8.30	8.10	8.10	7.80
	Sulphate	mg/l	0.1	400	EQS Freshwater	16	1.30	23.30	0	6.30	8.50	17.20	4.80	2.40	1.30	2.00	12.30	2.10	2.50	3.10	12.00	23.30	3.90	2.80	2.60
	Cyanide (total)	µg/l	10	70	UK DWS	1	21.00	21.00	0	< 10	< 10	21.00	< 10	< 10	< 10	< 10	< 10	< 10	< 10	<10	< 10	< 10	< 10	<10	< 10

Appendix 7: Groundwater Screening Results

*EQS Standard: Phenol and Benzene annual average of 300µg/l; Toluene 500µg/l for Freshwater, 400µg/l for Saltwater; 1,1,1-TCA 1,000µg/l.

Project Name:	Oxfordshire RFI
Project Number:	NTH2478
Assessment for:	Water Assessment
Laboratory:	i2
Receptor:	Drinking Water
Receptor Water Hardness:	>200

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100 = Assessment Criteria Exceedance)
50 = M-BAT Bioavailability Assessment Required

	Contaminant	Units	Detection Limit	Guideline Concentration	Source	Number of Samples Above Detection	Min	Max	No of Exceedences	RO02	RO03	RO07	RO08		
										6.00	8.00	6.40	7.50		
Heavy Metals	Arsenic	µg/l	0.15	10	UK DWS	3	0.20	0.29	0	0.25	0.29	< 0.15	0.20		
	Barium	mg/l	0.06	700	UK DWS	4	22.00	69.00	0	69.00	23.00	22.00	41.00		
	Beryllium	µg/l	0.1	None Available		0	0.00	0.00	0	< 0.1	< 0.1	< 0.1	< 0.1		
	Cadmium	µg/l	0.02	3	UK DWS	0	0.00	0.00	0	< 0.02	< 0.02	< 0.02	< 0.02		
	Chromium III	µg/l	0.2	4.7	EQS Freshwater	4	1.70	2.80	0	1.90	2.80	1.70	1.90		
	Chromium VI	µg/l	5	3.4	EQS Freshwater	0	0.00	0.00	0	< 5.0	< 5.0	< 5.0	< 5.0		
	Copper	µg/l	0.5	2000	UK DWS	4	1.50	2.20	0	2.00	1.90	1.50	2.20		
	Lead	µg/l	0.2	10	UK DWS	0	0.00	0.00	0	< 0.2	< 0.2	< 0.2	< 0.2		
	Mercury	µg/l	0.05	1	UK DWS	0	0.00	0.00	0	< 0.05	< 0.05	< 0.05	< 0.05		
	Nickel	µg/l	0.5	20	UK DWS	4	1.50	6.10	0	2.90	6.10	1.50	2.10		
	Selenium	µg/l	0.6	10	UK DWS	1	0.60	0.60	0	< 0.6	0.60	< 0.6	< 0.6		
	Vanadium	µg/l	0.2	None Available		4	0.30	0.60	0	0.40	0.30	0.30	0.60		
	Zinc	µg/l	0.5	12.9	EQS Freshwater	4	2.20	6.30	0	3.80	6.30	2.20	3.60		
	Sulphate	mg/l	0.045	400	EQS Freshwater	3	30.10	34.20	0	30.10	30.50	34.20	29.8		
	Boron	µg/l	10	300	UK DWS	4	52.00	260.00	0	260.00	52.00	110.00	140.00		
	pH	pH Units		6.5-10	UK DWS	4	7.30	7.60	0	7.40	7.30	7.60	7.50		
Inorganics	Cyanide (total)	µg/l	10	70	UK DWS	0	0.00	0.00	0	< 10	< 10	< 10	< 10		
	Phenol*	µg/l	10	7.7	EQS Freshwater	0	0.00	0.00	0	< 10	< 10	< 10	< 10		
	Ammonia (NH3 as N)	mg/l		0.39	UK DWS	4	0.06	0.29	0	0.10	0.06	0.29	0.20		
TPH	Total Petroleum Hydrocarbons (C10-C40)	µg/l	10	10	EQS Freshwater	0	0.00	0.00	0	< 10	< 10	< 10	< 10		
	Total Petroleum Hydrocarbons (C6-C10)	µg/l	10	10	EQS Freshwater	0	0.00	0.00	0	< 10	< 10	< 10	< 10		
Polycyclic Aromatic Hydrocarbons	Acenaphthene	µg/l	0.01	None Available		0	0.00	0.00	0	< 0.01	< 0.01	< 0.01	< 0.01		
	Acenaphthylene	µg/l	0.01	None Available		0	0.00	0.00	0	< 0.01	< 0.01	< 0.01	< 0.01		
	Anthracene	µg/l	0.01	0.1	EQS Freshwater	0	0.00	0.00	0	< 0.01	< 0.01	< 0.01	< 0.01		
	Benzo(a)anthracene	µg/l	0.01	None Available		0	0.00	0.00	0	< 0.01	< 0.01	< 0.01	< 0.01		
	Benzo(a)pyrene	µg/l	0.01	0.7	UK DWS	0	0.00	0.00	0	< 0.01	< 0.01	< 0.01	< 0.01		
	Benzo(b)fluoranthene	µg/l	0.01	None Available		0	0.00	0.00	0	< 0.01	< 0.01	< 0.01	< 0.01		
	Benzo(k)fluoranthene	µg/l	0.01	None Available		0	0.00	0.00	0	< 0.01	< 0.01	< 0.01	< 0.01		
	Benzo(g,h,i)perylene	µg/l	0.01	None Available		0	0.00	0.00	0	< 0.01	< 0.01	< 0.01	< 0.01		
	Chrysene	µg/l	0.01	None Available		0	0.00	0.00	0	< 0.01	< 0.01	< 0.01	< 0.01		
	Dibenzo(a,h)anthracene	µg/l	0.01	None Available		0	0.00	0.00	0	< 0.01	< 0.01	< 0.01	< 0.01		
	Fluoranthene	µg/l	0.01	0.0063	EQS Freshwater	0	0.00	0.00	0	< 0.01	< 0.01	< 0.01	< 0.01		
	Fluorene	µg/l	0.01	None Available		0	0.00	0.00	0	< 0.01	< 0.01	< 0.01	< 0.01		
	Indeno(1,2,3-c,d)pyrene	µg/l	0.01	None Available		0	0.00	0.00	0	< 0.01	< 0.01	< 0.01	< 0.01		
	Naphthalene	µg/l	0.01	2	EQS Freshwater	0	0.00	0.00	0	< 0.01	< 0.01	< 0.01	< 0.01		
	Phenanthrene	µg/l	0.01	None Available		0	0.00	0.00	0	< 0.01	< 0.01	< 0.01	< 0.01		
	Pyrene	µg/l	0.01	None Available		0	0.00	0.00	0	< 0.01	< 0.01	< 0.01	< 0.01		
	Total PAH	µg/l	0.16	0.1	WHO (Health)	0	0.00	0.00	0	< 0.16	< 0.16	< 0.16	< 0.16		

Appendix 8: Hazwaste Online Preliminary Waste Assessment

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HazWasteOnline™

Waste Classification Report

HazWasteOnline™ classifies waste as either **hazardous** or **non-hazardous** based on its chemical composition, related legislation and the rules and data defined in the current UK or EU technical guidance (Appendix C) (note that HP 9 Infectious is not assessed). It is the responsibility of the classifier named below to:

a) understand the origin of the waste
b) select the correct List of Waste code(s)
c) confirm that the list of determinands, results and sampling plan are fit for purpose
d) select and justify the chosen metal species (Appendix B)
e) correctly apply moisture correction and other available corrections
f) add the meta data for their user-defined substances (Appendix A)
g) check that the classification engine is suitable with respect to the national destination of the waste (Appendix C)

To aid the reviewer, the laboratory results, assumptions and justifications managed by the classifier are highlighted in pale yellow.

199QH-YMX9V-TEZGV

Job name

NTH2479 Ardley SRFI

Description/Comments

Project

NTH2479 Ardley SRFI

Site

NTH2479 Ardley SRFI

Classified by

Name:
Richard Robinson
Date:
22 Nov 2021 12:27 GMT
Telephone:
0115 924 1100

Company:
BWB Consulting Ltd
Waterfront House, Station Street
Nottingham
NG2 3DQ

HazWasteOnline™ provides a two day, hazardous waste classification course that covers the use of the software and both basic and advanced waste classification techniques. Certification has to be renewed every 3 years.

HazWasteOnline™ Certification: -

Course	Date
Hazardous Waste Classification	08 Dec 2016
3 year Refresher overdue	-

Job summary

#	Sample name	Depth [m]	Classification Result	Hazard properties	Page
1	DS102	0.20	Non Hazardous		3
2	DS112	0.30	Non Hazardous		5
3	DS122	0.20	Non Hazardous		7
4	DS117	0.25	Non Hazardous		9
5	DS123	0.70	Non Hazardous		11
6	DS124	0.20	Non Hazardous		13
7	DS120	0.20	Non Hazardous		15
8	DS130	0.20	Non Hazardous		17
9	DS126	0.20	Non Hazardous		19
10	DS116A	0.25	Non Hazardous		21
11	DS110	0.20	Non Hazardous		23
12	DS110[2]	1.00	Non Hazardous		25
13	DS114	0.15	Non Hazardous		27
14	DS114[2]	0.40	Non Hazardous		29
15	DS115	0.20	Non Hazardous		32
16	DS115[2]	0.50	Non Hazardous		34
17	TP103	0.20	Non Hazardous		36
18	TP103[2]	0.50	Non Hazardous		38
19	TP106	0.20	Non Hazardous		40
20	TP122	0.20	Non Hazardous		42
21	TP142	0.20	Non Hazardous		44
22	TP137	0.10	Non Hazardous		46
23	TP137[2]	0.30	Non Hazardous		48
24	TP146	0.20	Non Hazardous		50
25	TP146[2]	0.40	Non Hazardous		52
26	SA10	0.40	Non Hazardous		54

Related documents

#	Name	Description
1	BWB Contaminated Land Suite WM3	waste stream template used to create this Job

Report

Created by: Richard Robinson

Created date: 22 Nov 2021 12:27 GMT

Classification of sample: DS102

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
DS102
Sample Depth:
0.20 m
Moisture content:
14%
(no correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 14% No Moisture Correction applied (MC)

#		Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1		arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		19	mg/kg	1.32	25.086	mg/kg	0.00251 %		
2		beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		0.96	mg/kg	2.775	2.664	mg/kg	0.000266 %		
3		boron { boron tribromide/trichloride/trifluoride (combined) }			10294-33-4, 10294-34-5, 7637-07-2		0.5	mg/kg	13.43	6.715	mg/kg	0.000672 %		
4		cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	<0.2	mg/kg	1.285	<0.257	mg/kg	<0.00002 %		**<LOD**
5		chromium { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		28	mg/kg	1.462	40.924	mg/kg	0.00409 %		
6		copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		20	mg/kg	1.126	22.518	mg/kg	0.00225 %		
7		lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	26	mg/kg	1.56	40.555	mg/kg	0.0026 %		
8		mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		**<LOD**
9		nickel { nickel dihydroxide }	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]		22	mg/kg	1.579	34.749	mg/kg	0.00347 %		
10		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<1	mg/kg	1.405	<1.405	mg/kg	<0.000141 %		**<LOD**
11		zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		67	mg/kg	2.774	185.868	mg/kg	0.0186 %		
12		pH			PH		8.3	pH		8.3	pH	8.3 pH		
13		cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		**<LOD**

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
14	●	TPH (C6 to C40) petroleum group				23	mg/kg		23	mg/kg	0.0023 %		
				TPH									
15	●	acenaphthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			201-469-6	83-32-9									
16	●	acenaphthylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			205-917-1	208-96-8									
17	●	anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			204-371-1	120-12-7									
18		benzo[a]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
		601-033-00-9	200-280-6	56-55-3									
19		benzo[a]pyrene; benzo[def]chrysene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
		601-032-00-3	200-028-5	50-32-8									
20		benzo[b]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
		601-034-00-4	205-911-9	205-99-2									
21	●	benzo[ghi]perylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			205-883-8	191-24-2									
22		benzo[k]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
		601-036-00-5	205-916-6	207-08-9									
23		chrysene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
		601-048-00-0	205-923-4	218-01-9									
24		dibenz[a,h]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
		601-041-00-2	200-181-8	53-70-3									
25	●	fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			205-912-4	206-44-0									
26	●	fluorene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			201-695-5	86-73-7									
27	●	indeno[123-cd]pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			205-893-2	193-39-5									
28		naphthalene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
		601-052-00-2	202-049-5	91-20-3									
29	●	phenanthrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			201-581-5	85-01-8									
30	●	pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			204-927-3	129-00-0									
31		phenol				<1	mg/kg		<1	mg/kg	<0.0001 %		**<LOD**
		604-001-00-2	203-632-7	108-95-2									
										Total:	0.0373 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
●	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Force this Hazardous property to non hazardous because No significant contamination or calorific materials noted.

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0023%)

Classification of sample: DS112

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
DS112
Sample Depth:
0.30 m
Moisture content:
11%
(no correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 11% No Moisture Correction applied (MC)

#		Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1		arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		21	mg/kg	1.32	27.727	mg/kg	0.00277 %		
2		beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		1.1	mg/kg	2.775	3.053	mg/kg	0.000305 %		
3		boron { boron tribromide/trichloride/trifluoride (combined) }			10294-33-4, 10294-34-5, 7637-07-2		1.6	mg/kg	13.43	21.488	mg/kg	0.00215 %		
4		cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	<0.2	mg/kg	1.285	<0.257	mg/kg	<0.00002 %		**<LOD**
5		chromium { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		31	mg/kg	1.462	45.308	mg/kg	0.00453 %		
6		copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		18	mg/kg	1.126	20.266	mg/kg	0.00203 %		
7		lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	22	mg/kg	1.56	34.316	mg/kg	0.0022 %		
8		mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		**<LOD**
9		nickel { nickel dihydroxide }	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]		24	mg/kg	1.579	37.908	mg/kg	0.00379 %		
10		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<1	mg/kg	1.405	<1.405	mg/kg	<0.000141 %		**<LOD**
11		zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		60	mg/kg	2.774	166.449	mg/kg	0.0166 %		
12		pH			PH		8.6	pH		8.6	pH	8.6 pH		
13		cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		**<LOD**

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
14	•	TPH (C6 to C40) petroleum group				<10	mg/kg		<10	mg/kg	<0.001 %		**<LOD**
				TPH									
15	•	acenaphthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			201-469-6	83-32-9									
16	•	acenaphthylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			205-917-1	208-96-8									
17	•	anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			204-371-1	120-12-7									
18		benzo[a]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
		601-033-00-9	200-280-6	56-55-3									
19		benzo[a]pyrene; benzo[def]chrysene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
		601-032-00-3	200-028-5	50-32-8									
20		benzo[b]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
		601-034-00-4	205-911-9	205-99-2									
21	•	benzo[ghi]perylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			205-883-8	191-24-2									
22		benzo[k]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
		601-036-00-5	205-916-6	207-08-9									
23		chrysene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
		601-048-00-0	205-923-4	218-01-9									
24		dibenz[a,h]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
		601-041-00-2	200-181-8	53-70-3									
25	•	fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			205-912-4	206-44-0									
26	•	fluorene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			201-695-5	86-73-7									
27	•	indeno[123-cd]pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			205-893-2	193-39-5									
28		naphthalene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
		601-052-00-2	202-049-5	91-20-3									
29	•	phenanthrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			201-581-5	85-01-8									
30	•	pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			204-927-3	129-00-0									
31		phenol				<1	mg/kg		<1	mg/kg	<0.0001 %		**<LOD**
		604-001-00-2	203-632-7	108-95-2									
										Total:	0.036 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
•	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: DS122

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
DS122
Sample Depth:
0.20 m
Moisture content:
11%
(no correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 11% No Moisture Correction applied (MC)

#		Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1		arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		17	mg/kg	1.32	22.446	mg/kg	0.00224 %		
2		beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		1	mg/kg	2.775	2.775	mg/kg	0.000278 %		
3		boron { boron tribromide/trichloride/trifluoride (combined) }			10294-33-4, 10294-34-5, 7637-07-2		1.3	mg/kg	13.43	17.459	mg/kg	0.00175 %		
4		cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	<0.2	mg/kg	1.285	<0.257	mg/kg	<0.00002 %		**<LOD**
5		chromium { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		29	mg/kg	1.462	42.385	mg/kg	0.00424 %		
6		copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		15	mg/kg	1.126	16.888	mg/kg	0.00169 %		
7		lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	17	mg/kg	1.56	26.517	mg/kg	0.0017 %		
8		mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		**<LOD**
9		nickel { nickel dihydroxide }	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]		22	mg/kg	1.579	34.749	mg/kg	0.00347 %		
10		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<1	mg/kg	1.405	<1.405	mg/kg	<0.000141 %		**<LOD**
11		zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		56	mg/kg	2.774	155.352	mg/kg	0.0155 %		
12		pH			PH		8.3	pH		8.3	pH	8.3 pH		
13		cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		**<LOD**

#		Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
14	•	TPH (C6 to C40) petroleum group			TPH		<10	mg/kg		<10	mg/kg	<0.001 %		**<LOD**
15	•	acenaphthene		201-469-6	83-32-9		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
16	•	acenaphthylene		205-917-1	208-96-8		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
17	•	anthracene		204-371-1	120-12-7		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
18		benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
19		benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
20		benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
21	•	benzo[ghi]perylene		205-883-8	191-24-2		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
22		benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
23		chrysene	601-048-00-0	205-923-4	218-01-9		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
24		dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
25	•	fluoranthene		205-912-4	206-44-0		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
26	•	fluorene		201-695-5	86-73-7		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
27	•	indeno[123-cd]pyrene		205-893-2	193-39-5		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
28		naphthalene	601-052-00-2	202-049-5	91-20-3		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
29	•	phenanthrene		201-581-5	85-01-8		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
30	•	pyrene		204-927-3	129-00-0		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
31		phenol	604-001-00-2	203-632-7	108-95-2		<1	mg/kg		<1	mg/kg	<0.0001 %		**<LOD**
											Total:	0.0325 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
•	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: DS117

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
DS117
Sample Depth:
0.25 m
Moisture content:
10%
(no correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 10% No Moisture Correction applied (MC)

#		Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1		arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		17	mg/kg	1.32	22.446	mg/kg	0.00224 %		
2		beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		0.99	mg/kg	2.775	2.748	mg/kg	0.000275 %		
3		boron { boron tribromide/trichloride/trifluoride (combined) }			10294-33-4, 10294-34-5, 7637-07-2		0.3	mg/kg	13.43	4.029	mg/kg	0.000403 %		
4		cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	<0.2	mg/kg	1.285	<0.257	mg/kg	<0.00002 %		**<LOD**
5		chromium { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		27	mg/kg	1.462	39.462	mg/kg	0.00395 %		
6		copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		15	mg/kg	1.126	16.888	mg/kg	0.00169 %		
7		lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	18	mg/kg	1.56	28.077	mg/kg	0.0018 %		
8		mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		**<LOD**
9		nickel { nickel dihydroxide }	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]		21	mg/kg	1.579	33.169	mg/kg	0.00332 %		
10		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<1	mg/kg	1.405	<1.405	mg/kg	<0.000141 %		**<LOD**
11		zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		61	mg/kg	2.774	169.223	mg/kg	0.0169 %		
12		pH			PH		8.2	pH		8.2	pH	8.2 pH		
13		cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		**<LOD**

#		Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
14	•	TPH (C6 to C40) petroleum group			TPH		<10	mg/kg		<10	mg/kg	<0.001 %		**<LOD**
15	•	acenaphthene		201-469-6	83-32-9		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
16	•	acenaphthylene		205-917-1	208-96-8		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
17	•	anthracene		204-371-1	120-12-7		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
18		benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
19		benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
20		benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
21	•	benzo[ghi]perylene		205-883-8	191-24-2		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
22		benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
23		chrysene	601-048-00-0	205-923-4	218-01-9		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
24		dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
25	•	fluoranthene		205-912-4	206-44-0		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
26	•	fluorene		201-695-5	86-73-7		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
27	•	indeno[123-cd]pyrene		205-893-2	193-39-5		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
28		naphthalene	601-052-00-2	202-049-5	91-20-3		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
29	•	phenanthrene		201-581-5	85-01-8		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
30	•	pyrene		204-927-3	129-00-0		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
31		phenol	604-001-00-2	203-632-7	108-95-2		<1	mg/kg		<1	mg/kg	<0.0001 %		**<LOD**
											Total:	0.0322 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
•	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: DS123

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
DS123
Sample Depth:
0.70 m
Moisture content:
13%
(no correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 13% No Moisture Correction applied (MC)

#		Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1		arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		20	mg/kg	1.32	26.407	mg/kg	0.00264 %		
2		beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		1.8	mg/kg	2.775	4.996	mg/kg	0.0005 %		
3		boron { boron tribromide/trichloride/trifluoride (combined) }			10294-33-4, 10294-34-5, 7637-07-2		0.5	mg/kg	13.43	6.715	mg/kg	0.000672 %		
4		cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	<0.2	mg/kg	1.285	<0.257	mg/kg	<0.00002 %		**<LOD**
5		chromium { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		48	mg/kg	1.462	70.155	mg/kg	0.00702 %		
6		copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		14	mg/kg	1.126	15.762	mg/kg	0.00158 %		
7		lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	17	mg/kg	1.56	26.517	mg/kg	0.0017 %		
8		mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		**<LOD**
9		nickel { nickel dihydroxide }	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]		32	mg/kg	1.579	50.544	mg/kg	0.00505 %		
10		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<1	mg/kg	1.405	<1.405	mg/kg	<0.000141 %		**<LOD**
11		zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		82	mg/kg	2.774	227.48	mg/kg	0.0227 %		
12		pH			PH		8.1	pH		8.1	pH	8.1 pH		
13		cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		**<LOD**

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
14	•	TPH (C6 to C40) petroleum group				<10	mg/kg		<10	mg/kg	<0.001 %		**<LOD**
				TPH									
15	•	acenaphthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			201-469-6	83-32-9									
16	•	acenaphthylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			205-917-1	208-96-8									
17	•	anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			204-371-1	120-12-7									
18		benzo[a]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
		601-033-00-9	200-280-6	56-55-3									
19		benzo[a]pyrene; benzo[def]chrysene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
		601-032-00-3	200-028-5	50-32-8									
20		benzo[b]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
		601-034-00-4	205-911-9	205-99-2									
21	•	benzo[ghi]perylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			205-883-8	191-24-2									
22		benzo[k]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
		601-036-00-5	205-916-6	207-08-9									
23		chrysene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
		601-048-00-0	205-923-4	218-01-9									
24		dibenz[a,h]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
		601-041-00-2	200-181-8	53-70-3									
25	•	fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			205-912-4	206-44-0									
26	•	fluorene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			201-695-5	86-73-7									
27	•	indeno[123-cd]pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			205-893-2	193-39-5									
28		naphthalene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
		601-052-00-2	202-049-5	91-20-3									
29	•	phenanthrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			201-581-5	85-01-8									
30	•	pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			204-927-3	129-00-0									
31		phenol				<1	mg/kg		<1	mg/kg	<0.0001 %		**<LOD**
		604-001-00-2	203-632-7	108-95-2									
										Total:	0.0435 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
•	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: DS124

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
DS124
Sample Depth:
0.20 m
Moisture content:
9%
(no correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 9% No Moisture Correction applied (MC)

#		Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1		arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		13	mg/kg	1.32	17.164	mg/kg	0.00172 %		
2		beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		0.66	mg/kg	2.775	1.832	mg/kg	0.000183 %		
3		boron { boron tribromide/trichloride/trifluoride (combined) }			10294-33-4, 10294-34-5, 7637-07-2		0.3	mg/kg	13.43	4.029	mg/kg	0.000403 %		
4		cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	<0.2	mg/kg	1.285	<0.257	mg/kg	<0.00002 %		**<LOD**
5		chromium { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		18	mg/kg	1.462	26.308	mg/kg	0.00263 %		
6		copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		7.2	mg/kg	1.126	8.106	mg/kg	0.000811 %		
7		lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	10	mg/kg	1.56	15.598	mg/kg	0.001 %		
8		mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		**<LOD**
9		nickel { nickel dihydroxide }	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]		14	mg/kg	1.579	22.113	mg/kg	0.00221 %		
10		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<1	mg/kg	1.405	<1.405	mg/kg	<0.000141 %		**<LOD**
11		zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		33	mg/kg	2.774	91.547	mg/kg	0.00915 %		
12		pH			PH		8.6	pH		8.6	pH	8.6 pH		
13		cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		**<LOD**

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
14	•	TPH (C6 to C40) petroleum group				<10	mg/kg		<10	mg/kg	<0.001 %		**<LOD**
				TPH									
15	•	acenaphthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			201-469-6	83-32-9									
16	•	acenaphthylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			205-917-1	208-96-8									
17	•	anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			204-371-1	120-12-7									
18		benzo[a]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
		601-033-00-9	200-280-6	56-55-3									
19		benzo[a]pyrene; benzo[def]chrysene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
		601-032-00-3	200-028-5	50-32-8									
20		benzo[b]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
		601-034-00-4	205-911-9	205-99-2									
21	•	benzo[ghi]perylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			205-883-8	191-24-2									
22		benzo[k]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
		601-036-00-5	205-916-6	207-08-9									
23		chrysene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
		601-048-00-0	205-923-4	218-01-9									
24		dibenz[a,h]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
		601-041-00-2	200-181-8	53-70-3									
25	•	fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			205-912-4	206-44-0									
26	•	fluorene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			201-695-5	86-73-7									
27	•	indeno[123-cd]pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			205-893-2	193-39-5									
28		naphthalene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
		601-052-00-2	202-049-5	91-20-3									
29	•	phenanthrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			201-581-5	85-01-8									
30	•	pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			204-927-3	129-00-0									
31		phenol				<1	mg/kg		<1	mg/kg	<0.0001 %		**<LOD**
		604-001-00-2	203-632-7	108-95-2									
										Total:	0.0197 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
•	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: DS120

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
DS120
Sample Depth:
0.20 m
Moisture content:
11%
(no correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 11% No Moisture Correction applied (MC)

#		Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1		arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		20	mg/kg	1.32	26.407	mg/kg	0.00264 %		
2		beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		0.97	mg/kg	2.775	2.692	mg/kg	0.000269 %		
3		boron { boron tribromide/trichloride/trifluoride (combined) }			10294-33-4, 10294-34-5, 7637-07-2		0.4	mg/kg	13.43	5.372	mg/kg	0.000537 %		
4		cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	<0.2	mg/kg	1.285	<0.257	mg/kg	<0.00002 %		**<LOD**
5		chromium { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		27	mg/kg	1.462	39.462	mg/kg	0.00395 %		
6		copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		16	mg/kg	1.126	18.014	mg/kg	0.0018 %		
7		lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	20	mg/kg	1.56	31.196	mg/kg	0.002 %		
8		mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		**<LOD**
9		nickel { nickel dihydroxide }	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]		21	mg/kg	1.579	33.169	mg/kg	0.00332 %		
10		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<1	mg/kg	1.405	<1.405	mg/kg	<0.000141 %		**<LOD**
11		zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		62	mg/kg	2.774	171.997	mg/kg	0.0172 %		
12		pH			PH		8.3	pH		8.3	pH	8.3 pH		
13		cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		**<LOD**

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
14	•	TPH (C6 to C40) petroleum group				<10	mg/kg		<10	mg/kg	<0.001 %		**<LOD**
				TPH									
15	•	acenaphthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			201-469-6	83-32-9									
16	•	acenaphthylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			205-917-1	208-96-8									
17	•	anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			204-371-1	120-12-7									
18		benzo[a]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
		601-033-00-9	200-280-6	56-55-3									
19		benzo[a]pyrene; benzo[def]chrysene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
		601-032-00-3	200-028-5	50-32-8									
20		benzo[b]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
		601-034-00-4	205-911-9	205-99-2									
21	•	benzo[ghi]perylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			205-883-8	191-24-2									
22		benzo[k]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
		601-036-00-5	205-916-6	207-08-9									
23		chrysene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
		601-048-00-0	205-923-4	218-01-9									
24		dibenz[a,h]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
		601-041-00-2	200-181-8	53-70-3									
25	•	fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			205-912-4	206-44-0									
26	•	fluorene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			201-695-5	86-73-7									
27	•	indeno[123-cd]pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			205-893-2	193-39-5									
28		naphthalene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
		601-052-00-2	202-049-5	91-20-3									
29	•	phenanthrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			201-581-5	85-01-8									
30	•	pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			204-927-3	129-00-0									
31		phenol				<1	mg/kg		<1	mg/kg	<0.0001 %		**<LOD**
		604-001-00-2	203-632-7	108-95-2									
										Total:	0.0333 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
•	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: DS130

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
DS130
Sample Depth:
0.20 m
Moisture content:
13%
(no correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 13% No Moisture Correction applied (MC)

#		Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1		arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		16	mg/kg	1.32	21.125	mg/kg	0.00211 %		
2		beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		0.85	mg/kg	2.775	2.359	mg/kg	0.000236 %		
3		boron { boron tribromide/trichloride/trifluoride (combined) }			10294-33-4, 10294-34-5, 7637-07-2		1.3	mg/kg	13.43	17.459	mg/kg	0.00175 %		
4		cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	<0.2	mg/kg	1.285	<0.257	mg/kg	<0.00002 %		**<LOD**
5		chromium { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		26	mg/kg	1.462	38	mg/kg	0.0038 %		
6		copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		14	mg/kg	1.126	15.762	mg/kg	0.00158 %		
7		lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	17	mg/kg	1.56	26.517	mg/kg	0.0017 %		
8		mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		**<LOD**
9		nickel { nickel dihydroxide }	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]		19	mg/kg	1.579	30.01	mg/kg	0.003 %		
10		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<1	mg/kg	1.405	<1.405	mg/kg	<0.000141 %		**<LOD**
11		zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		61	mg/kg	2.774	169.223	mg/kg	0.0169 %		
12		pH			PH		8.3	pH		8.3	pH	8.3 pH		
13		cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		**<LOD**

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
14	•	TPH (C6 to C40) petroleum group				<10	mg/kg		<10	mg/kg	<0.001 %		**<LOD**
				TPH									
15	•	acenaphthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			201-469-6	83-32-9									
16	•	acenaphthylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			205-917-1	208-96-8									
17	•	anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			204-371-1	120-12-7									
18		benzo[a]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
		601-033-00-9	200-280-6	56-55-3									
19		benzo[a]pyrene; benzo[def]chrysene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
		601-032-00-3	200-028-5	50-32-8									
20		benzo[b]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
		601-034-00-4	205-911-9	205-99-2									
21	•	benzo[ghi]perylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			205-883-8	191-24-2									
22		benzo[k]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
		601-036-00-5	205-916-6	207-08-9									
23		chrysene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
		601-048-00-0	205-923-4	218-01-9									
24		dibenz[a,h]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
		601-041-00-2	200-181-8	53-70-3									
25	•	fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			205-912-4	206-44-0									
26	•	fluorene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			201-695-5	86-73-7									
27	•	indeno[123-cd]pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			205-893-2	193-39-5									
28		naphthalene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
		601-052-00-2	202-049-5	91-20-3									
29	•	phenanthrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			201-581-5	85-01-8									
30	•	pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			204-927-3	129-00-0									
31		phenol				<1	mg/kg		<1	mg/kg	<0.0001 %		**<LOD**
		604-001-00-2	203-632-7	108-95-2									
										Total:	0.0327 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
•	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: DS126

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
DS126
Sample Depth:
0.20 m
Moisture content:
14%
(no correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 14% No Moisture Correction applied (MC)

#		Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1		arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		19	mg/kg	1.32	25.086	mg/kg	0.00251 %		
2		beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		1.1	mg/kg	2.775	3.053	mg/kg	0.000305 %		
3		boron { boron tribromide/trichloride/trifluoride (combined) }			10294-33-4, 10294-34-5, 7637-07-2		1.1	mg/kg	13.43	14.773	mg/kg	0.00148 %		
4		cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	<0.2	mg/kg	1.285	<0.257	mg/kg	<0.00002 %		**<LOD**
5		chromium { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		31	mg/kg	1.462	45.308	mg/kg	0.00453 %		
6		copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		18	mg/kg	1.126	20.266	mg/kg	0.00203 %		
7		lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	21	mg/kg	1.56	32.756	mg/kg	0.0021 %		
8		mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		**<LOD**
9		nickel { nickel dihydroxide }	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]		24	mg/kg	1.579	37.908	mg/kg	0.00379 %		
10		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<1	mg/kg	1.405	<1.405	mg/kg	<0.000141 %		**<LOD**
11		zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		77	mg/kg	2.774	213.609	mg/kg	0.0214 %		
12		pH			PH		8.3	pH		8.3	pH	8.3 pH		
13		cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		**<LOD**

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
14	●	TPH (C6 to C40) petroleum group				18	mg/kg		18	mg/kg	0.0018 %		
				TPH									
15	●	acenaphthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			201-469-6	83-32-9									
16	●	acenaphthylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			205-917-1	208-96-8									
17	●	anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			204-371-1	120-12-7									
18		benzo[a]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-033-00-9	200-280-6	56-55-3									
19		benzo[a]pyrene; benzo[def]chrysene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-032-00-3	200-028-5	50-32-8									
20		benzo[b]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-034-00-4	205-911-9	205-99-2									
21	●	benzo[ghi]perylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			205-883-8	191-24-2									
22		benzo[k]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-036-00-5	205-916-6	207-08-9									
23		chrysene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-048-00-0	205-923-4	218-01-9									
24		dibenz[a,h]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
25	●	fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			205-912-4	206-44-0									
26	●	fluorene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			201-695-5	86-73-7									
27	●	indeno[123-cd]pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			205-893-2	193-39-5									
28		naphthalene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-052-00-2	202-049-5	91-20-3									
29	●	phenanthrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			201-581-5	85-01-8									
30	●	pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			204-927-3	129-00-0									
31		phenol				<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
		604-001-00-2	203-632-7	108-95-2									
										Total:	0.0405 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
●	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Force this Hazardous property to non hazardous because No significant contamination or calorific materials noted.

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0018%)

Classification of sample: DS116A

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
DS116A
Sample Depth:
0.25 m
Moisture content:
5.5%
(no correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 5.5% No Moisture Correction applied (MC)

#		Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1		arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		11	mg/kg	1.32	14.524	mg/kg	0.00145 %		
2		beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		0.37	mg/kg	2.775	1.027	mg/kg	0.000103 %		
3		boron { boron tribromide/trichloride/trifluoride (combined) }			10294-33-4, 10294-34-5, 7637-07-2		0.7	mg/kg	13.43	9.401	mg/kg	0.00094 %		
4		cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	<0.2	mg/kg	1.285	<0.257	mg/kg	<0.00002 %		**<LOD**
5		chromium { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		11	mg/kg	1.462	16.077	mg/kg	0.00161 %		
6		copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		7.6	mg/kg	1.126	8.557	mg/kg	0.000856 %		
7		lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	5.3	mg/kg	1.56	8.267	mg/kg	0.00053 %		
8		mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		**<LOD**
9		nickel { nickel dihydroxide }	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]		10	mg/kg	1.579	15.795	mg/kg	0.00158 %		
10		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<1	mg/kg	1.405	<1.405	mg/kg	<0.000141 %		**<LOD**
11		zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		43	mg/kg	2.774	119.288	mg/kg	0.0119 %		
12		pH			PH		9.6	pH		9.6	pH	9.6 pH		
13		cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		**<LOD**

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
14	•	TPH (C6 to C40) petroleum group				<10	mg/kg		<10	mg/kg	<0.001 %		**<LOD**
				TPH									
15	•	acenaphthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			201-469-6	83-32-9									
16	•	acenaphthylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			205-917-1	208-96-8									
17	•	anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			204-371-1	120-12-7									
18		benzo[a]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
		601-033-00-9	200-280-6	56-55-3									
19		benzo[a]pyrene; benzo[def]chrysene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
		601-032-00-3	200-028-5	50-32-8									
20		benzo[b]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
		601-034-00-4	205-911-9	205-99-2									
21	•	benzo[ghi]perylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			205-883-8	191-24-2									
22		benzo[k]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
		601-036-00-5	205-916-6	207-08-9									
23		chrysene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
		601-048-00-0	205-923-4	218-01-9									
24		dibenz[a,h]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
		601-041-00-2	200-181-8	53-70-3									
25	•	fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			205-912-4	206-44-0									
26	•	fluorene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			201-695-5	86-73-7									
27	•	indeno[123-cd]pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			205-893-2	193-39-5									
28		naphthalene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
		601-052-00-2	202-049-5	91-20-3									
29	•	phenanthrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			201-581-5	85-01-8									
30	•	pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			204-927-3	129-00-0									
31		phenol				<1	mg/kg		<1	mg/kg	<0.0001 %		**<LOD**
		604-001-00-2	203-632-7	108-95-2									
										Total:	0.0206 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
•	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: DS110

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
DS110
Sample Depth:
0.20 m
Moisture content:
19%
(no correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 19% No Moisture Correction applied (MC)

#		Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1		arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		11	mg/kg	1.32	14.524	mg/kg	0.00145 %		
2		beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		0.64	mg/kg	2.775	1.776	mg/kg	0.000178 %		
3		boron { boron tribromide/trichloride/trifluoride (combined) }			10294-33-4, 10294-34-5, 7637-07-2		1.1	mg/kg	13.43	14.773	mg/kg	0.00148 %		
4		cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	<0.2	mg/kg	1.285	<0.257	mg/kg	<0.00002 %		**<LOD**
5		chromium { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		18	mg/kg	1.462	26.308	mg/kg	0.00263 %		
6		copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		11	mg/kg	1.126	12.385	mg/kg	0.00124 %		
7		lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	19	mg/kg	1.56	29.636	mg/kg	0.0019 %		
8		mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		**<LOD**
9		nickel { nickel dihydroxide }	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]		9.6	mg/kg	1.579	15.163	mg/kg	0.00152 %		
10		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<1	mg/kg	1.405	<1.405	mg/kg	<0.000141 %		**<LOD**
11		zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		41	mg/kg	2.774	113.74	mg/kg	0.0114 %		
12		pH			PH		8.2	pH		8.2	pH	8.2 pH		
13		cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		**<LOD**

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
14	•	TPH (C6 to C40) petroleum group				<10	mg/kg		<10	mg/kg	<0.001 %		**<LOD**
				TPH									
15	•	acenaphthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			201-469-6	83-32-9									
16	•	acenaphthylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			205-917-1	208-96-8									
17	•	anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			204-371-1	120-12-7									
18		benzo[a]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
		601-033-00-9	200-280-6	56-55-3									
19		benzo[a]pyrene; benzo[def]chrysene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
		601-032-00-3	200-028-5	50-32-8									
20		benzo[b]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
		601-034-00-4	205-911-9	205-99-2									
21	•	benzo[ghi]perylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			205-883-8	191-24-2									
22		benzo[k]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
		601-036-00-5	205-916-6	207-08-9									
23		chrysene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
		601-048-00-0	205-923-4	218-01-9									
24		dibenz[a,h]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
		601-041-00-2	200-181-8	53-70-3									
25	•	fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			205-912-4	206-44-0									
26	•	fluorene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			201-695-5	86-73-7									
27	•	indeno[123-cd]pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			205-893-2	193-39-5									
28		naphthalene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
		601-052-00-2	202-049-5	91-20-3									
29	•	phenanthrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			201-581-5	85-01-8									
30	•	pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			204-927-3	129-00-0									
31		phenol				<1	mg/kg		<1	mg/kg	<0.0001 %		**<LOD**
		604-001-00-2	203-632-7	108-95-2									
										Total:	0.0233 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
•	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: DS110[2]

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
DS110[2]
Sample Depth:
1.00 m
Moisture content:
15%
(no correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 15% No Moisture Correction applied (MC)

#		Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1		arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		7.1	mg/kg	1.32	9.374	mg/kg	0.000937 %		
2		beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		0.64	mg/kg	2.775	1.776	mg/kg	0.000178 %		
3		boron { boron tribromide/trichloride/trifluoride (combined) }			10294-33-4, 10294-34-5, 7637-07-2		0.4	mg/kg	13.43	5.372	mg/kg	0.000537 %		
4		cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	<0.2	mg/kg	1.285	<0.257	mg/kg	<0.00002 %		**<LOD**
5		chromium { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		15	mg/kg	1.462	21.923	mg/kg	0.00219 %		
6		copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		5	mg/kg	1.126	5.629	mg/kg	0.000563 %		
7		lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	8.2	mg/kg	1.56	12.79	mg/kg	0.00082 %		
8		mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		**<LOD**
9		nickel { nickel dihydroxide }	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]		13	mg/kg	1.579	20.533	mg/kg	0.00205 %		
10		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<1	mg/kg	1.405	<1.405	mg/kg	<0.000141 %		**<LOD**
11		zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		19	mg/kg	2.774	52.709	mg/kg	0.00527 %		
12		pH			PH		8.3	pH		8.3	pH	8.3 pH		
13		cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		**<LOD**

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
14	•	TPH (C6 to C40) petroleum group				<10	mg/kg		<10	mg/kg	<0.001 %		**<LOD**
				TPH									
15	•	acenaphthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			201-469-6	83-32-9									
16	•	acenaphthylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			205-917-1	208-96-8									
17	•	anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			204-371-1	120-12-7									
18		benzo[a]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
		601-033-00-9	200-280-6	56-55-3									
19		benzo[a]pyrene; benzo[def]chrysene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
		601-032-00-3	200-028-5	50-32-8									
20		benzo[b]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
		601-034-00-4	205-911-9	205-99-2									
21	•	benzo[ghi]perylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			205-883-8	191-24-2									
22		benzo[k]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
		601-036-00-5	205-916-6	207-08-9									
23		chrysene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
		601-048-00-0	205-923-4	218-01-9									
24		dibenz[a,h]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
		601-041-00-2	200-181-8	53-70-3									
25	•	fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			205-912-4	206-44-0									
26	•	fluorene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			201-695-5	86-73-7									
27	•	indeno[123-cd]pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			205-893-2	193-39-5									
28		naphthalene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
		601-052-00-2	202-049-5	91-20-3									
29	•	phenanthrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			201-581-5	85-01-8									
30	•	pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			204-927-3	129-00-0									
31		phenol				<1	mg/kg		<1	mg/kg	<0.0001 %		**<LOD**
		604-001-00-2	203-632-7	108-95-2									
										Total:	0.0141 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
•	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: DS114

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
DS114
Sample Depth:
0.15 m
Moisture content:
8.3%
(no correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 8.3% No Moisture Correction applied (MC)

#		Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1		arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		19	mg/kg	1.32	25.086	mg/kg	0.00251 %		
2		beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		1.1	mg/kg	2.775	3.053	mg/kg	0.000305 %		
3		boron { boron tribromide/trichloride/trifluoride (combined) }			10294-33-4, 10294-34-5, 7637-07-2		0.3	mg/kg	13.43	4.029	mg/kg	0.000403 %		
4		cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	<0.2	mg/kg	1.285	<0.257	mg/kg	<0.00002 %		**<LOD**
5		chromium { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		32	mg/kg	1.462	46.77	mg/kg	0.00468 %		
6		copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		19	mg/kg	1.126	21.392	mg/kg	0.00214 %		
7		lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	27	mg/kg	1.56	42.115	mg/kg	0.0027 %		
8		mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		**<LOD**
9		nickel { nickel dihydroxide }	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]		25	mg/kg	1.579	39.487	mg/kg	0.00395 %		
10		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<1	mg/kg	1.405	<1.405	mg/kg	<0.000141 %		**<LOD**
11		zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		73	mg/kg	2.774	202.513	mg/kg	0.0203 %		
12		pH			PH		8.1	pH		8.1	pH	8.1 pH		
13		cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		**<LOD**

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
14	•	TPH (C6 to C40) petroleum group				<10	mg/kg		<10	mg/kg	<0.001 %		**<LOD**
				TPH									
15	•	acenaphthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			201-469-6	83-32-9									
16	•	acenaphthylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			205-917-1	208-96-8									
17	•	anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			204-371-1	120-12-7									
18		benzo[a]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
		601-033-00-9	200-280-6	56-55-3									
19		benzo[a]pyrene; benzo[def]chrysene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
		601-032-00-3	200-028-5	50-32-8									
20		benzo[b]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
		601-034-00-4	205-911-9	205-99-2									
21	•	benzo[ghi]perylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			205-883-8	191-24-2									
22		benzo[k]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
		601-036-00-5	205-916-6	207-08-9									
23		chrysene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
		601-048-00-0	205-923-4	218-01-9									
24		dibenz[a,h]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
		601-041-00-2	200-181-8	53-70-3									
25	•	fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			205-912-4	206-44-0									
26	•	fluorene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			201-695-5	86-73-7									
27	•	indeno[123-cd]pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			205-893-2	193-39-5									
28		naphthalene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
		601-052-00-2	202-049-5	91-20-3									
29	•	phenanthrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			201-581-5	85-01-8									
30	•	pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			204-927-3	129-00-0									
31		phenol				<1	mg/kg		<1	mg/kg	<0.0001 %		**<LOD**
		604-001-00-2	203-632-7	108-95-2									
										Total:	0.0385 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
•	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: DS114[2]

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
DS114[2]
Sample Depth:
0.40 m
Moisture content:
7.4%
(no correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 7.4% No Moisture Correction applied (MC)

#		Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1		arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		15	mg/kg	1.32	19.805	mg/kg	0.00198 %		
2		beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		0.99	mg/kg	2.775	2.748	mg/kg	0.000275 %		
3		boron { boron tribromide/trichloride/trifluoride (combined) }			10294-33-4, 10294-34-5, 7637-07-2		0.6	mg/kg	13.43	8.058	mg/kg	0.000806 %		
4		cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	<0.2	mg/kg	1.285	<0.257	mg/kg	<0.00002 %		**<LOD**
5		chromium { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		27	mg/kg	1.462	39.462	mg/kg	0.00395 %		
6		copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		13	mg/kg	1.126	14.637	mg/kg	0.00146 %		
7		lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	18	mg/kg	1.56	28.077	mg/kg	0.0018 %		
8		mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		**<LOD**
9		nickel { nickel dihydroxide }	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]		21	mg/kg	1.579	33.169	mg/kg	0.00332 %		
10		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<1	mg/kg	1.405	<1.405	mg/kg	<0.000141 %		**<LOD**
11		zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		53	mg/kg	2.774	147.03	mg/kg	0.0147 %		
12		pH			PH		8.3	pH		8.3	pH	8.3 pH		
13		cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		**<LOD**

#		Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
14		TPH (C6 to C40) petroleum group			TPH		<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
15		benzene	601-020-00-8	200-753-7	71-43-2		<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
16		ethylbenzene	601-023-00-4	202-849-4	100-41-4		<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
17		toluene	601-021-00-3	203-625-9	108-88-3		<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
18		xylene	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
19		acenaphthene		201-469-6	83-32-9		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
20		acenaphthylene		205-917-1	208-96-8		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
21		anthracene		204-371-1	120-12-7		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
22		benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
23		benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
24		benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
25		benzo[ghi]perylene		205-883-8	191-24-2		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
26		benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
27		chrysene	601-048-00-0	205-923-4	218-01-9		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
28		dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
29		fluoranthene		205-912-4	206-44-0		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
30		fluorene		201-695-5	86-73-7		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
31		indeno[123-cd]pyrene		205-893-2	193-39-5		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
32		naphthalene	601-052-00-2	202-049-5	91-20-3		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
33		phenanthrene		201-581-5	85-01-8		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
34		pyrene		204-927-3	129-00-0		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
35		phenol	604-001-00-2	203-632-7	108-95-2		<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
36		dichloroethane { 1,1-dichloroethane and 1,2-dichloroethane (combined) }		203-458-1, 200-863-5	107-06-2, 75-34-3		<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
37		tetrachloroethylene	602-028-00-4	204-825-9	127-18-4		<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
38		tetrachloromethane (carbon tetrachloride)	602-008-00-5	200-262-8	56-23-5		<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
39		trichloroethylene; trichloroethene	602-027-00-9	201-167-4	79-01-6		<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
40		vinyl chloride	602-023-00-7	200-831-0	75-01-4		<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
											Total:	0.0308 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: DS115

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
DS115
Sample Depth:
0.20 m
Moisture content:
8%
(no correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 8% No Moisture Correction applied (MC)

#		Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1		arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		15	mg/kg	1.32	19.805	mg/kg	0.00198 %		
2		beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		0.87	mg/kg	2.775	2.415	mg/kg	0.000241 %		
3		boron { boron tribromide/trichloride/trifluoride (combined) }			10294-33-4, 10294-34-5, 7637-07-2		0.9	mg/kg	13.43	12.087	mg/kg	0.00121 %		
4		cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	<0.2	mg/kg	1.285	<0.257	mg/kg	<0.00002 %		**<LOD**
5		chromium { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		25	mg/kg	1.462	36.539	mg/kg	0.00365 %		
6		copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		11	mg/kg	1.126	12.385	mg/kg	0.00124 %		
7		lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	16	mg/kg	1.56	24.957	mg/kg	0.0016 %		
8		mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		**<LOD**
9		nickel { nickel dihydroxide }	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]		19	mg/kg	1.579	30.01	mg/kg	0.003 %		
10		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<1	mg/kg	1.405	<1.405	mg/kg	<0.000141 %		**<LOD**
11		zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		46	mg/kg	2.774	127.611	mg/kg	0.0128 %		
12		pH			PH		8.3	pH		8.3	pH	8.3 pH		
13		cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		**<LOD**

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
14		TPH (C6 to C40) petroleum group		TPH		<10	mg/kg		<10	mg/kg	<0.001 %		**<LOD**
15		acenaphthene	201-469-6	83-32-9		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
16		acenaphthylene	205-917-1	208-96-8		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
17		anthracene	204-371-1	120-12-7		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
18		benzo[a]anthracene	200-280-6	56-55-3		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
19		benzo[a]pyrene; benzo[def]chrysene	200-028-5	50-32-8		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
20		benzo[b]fluoranthene	205-911-9	205-99-2		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
21		benzo[ghi]perylene	205-883-8	191-24-2		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
22		benzo[k]fluoranthene	205-916-6	207-08-9		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
23		chrysene	205-923-4	218-01-9		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
24		dibenz[a,h]anthracene	200-181-8	53-70-3		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
25		fluoranthene	205-912-4	206-44-0		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
26		fluorene	201-695-5	86-73-7		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
27		indeno[123-cd]pyrene	205-893-2	193-39-5		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
28		naphthalene	202-049-5	91-20-3		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
29		phenanthrene	201-581-5	85-01-8		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
30		pyrene	204-927-3	129-00-0		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
31		phenol	203-632-7	108-95-2		<1	mg/kg		<1	mg/kg	<0.0001 %		**<LOD**
										Total:	0.0273 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: DS115[2]

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
DS115[2]
Sample Depth:
0.50 m
Moisture content:
8.3%
(no correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 8.3% No Moisture Correction applied (MC)

#		Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1		arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		11	mg/kg	1.32	14.524	mg/kg	0.00145 %		
2		beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		0.74	mg/kg	2.775	2.054	mg/kg	0.000205 %		
3		boron { boron tribromide/trichloride/trifluoride (combined) }			10294-33-4, 10294-34-5, 7637-07-2		0.4	mg/kg	13.43	5.372	mg/kg	0.000537 %		
4		cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	<0.2	mg/kg	1.285	<0.257	mg/kg	<0.00002 %		**<LOD**
5		chromium { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		21	mg/kg	1.462	30.693	mg/kg	0.00307 %		
6		copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		8.2	mg/kg	1.126	9.232	mg/kg	0.000923 %		
7		lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	9.4	mg/kg	1.56	14.662	mg/kg	0.00094 %		
8		mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		**<LOD**
9		nickel { nickel dihydroxide }	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]		19	mg/kg	1.579	30.01	mg/kg	0.003 %		
10		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<1	mg/kg	1.405	<1.405	mg/kg	<0.000141 %		**<LOD**
11		zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		37	mg/kg	2.774	102.643	mg/kg	0.0103 %		
12		pH			PH		8.5	pH		8.5	pH	8.5 pH		
13		cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		**<LOD**

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
14		TPH (C6 to C40) petroleum group		TPH		<10	mg/kg		<10	mg/kg	<0.001 %		**<LOD**
15		acenaphthene	201-469-6	83-32-9		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
16		acenaphthylene	205-917-1	208-96-8		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
17		anthracene	204-371-1	120-12-7		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
18		benzo[a]anthracene	200-280-6	56-55-3		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
19		benzo[a]pyrene; benzo[def]chrysene	200-028-5	50-32-8		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
20		benzo[b]fluoranthene	205-911-9	205-99-2		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
21		benzo[ghi]perylene	205-883-8	191-24-2		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
22		benzo[k]fluoranthene	205-916-6	207-08-9		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
23		chrysene	205-923-4	218-01-9		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
24		dibenz[a,h]anthracene	200-181-8	53-70-3		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
25		fluoranthene	205-912-4	206-44-0		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
26		fluorene	201-695-5	86-73-7		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
27		indeno[123-cd]pyrene	205-893-2	193-39-5		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
28		naphthalene	202-049-5	91-20-3		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
29		phenanthrene	201-581-5	85-01-8		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
30		pyrene	204-927-3	129-00-0		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
31		phenol	203-632-7	108-95-2		<1	mg/kg		<1	mg/kg	<0.0001 %		**<LOD**
										Total:	0.022 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: TP103

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
TP103
Sample Depth:
0.20 m
Moisture content:
11%
(no correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 11% No Moisture Correction applied (MC)

#		Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1		arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		20	mg/kg	1.32	26.407	mg/kg	0.00264 %		
2		beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		0.9	mg/kg	2.775	2.498	mg/kg	0.00025 %		
3		boron { boron tribromide/trichloride/trifluoride (combined) }			10294-33-4, 10294-34-5, 7637-07-2		0.4	mg/kg	13.43	5.372	mg/kg	0.000537 %		
4		cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	<0.2	mg/kg	1.285	<0.257	mg/kg	<0.00002 %		**<LOD**
5		chromium { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		26	mg/kg	1.462	38	mg/kg	0.0038 %		
6		copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		14	mg/kg	1.126	15.762	mg/kg	0.00158 %		
7		lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	22	mg/kg	1.56	34.316	mg/kg	0.0022 %		
8		mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		**<LOD**
9		nickel { nickel dihydroxide }	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]		21	mg/kg	1.579	33.169	mg/kg	0.00332 %		
10		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<1	mg/kg	1.405	<1.405	mg/kg	<0.000141 %		**<LOD**
11		zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		64	mg/kg	2.774	177.545	mg/kg	0.0178 %		
12		pH			PH		8.4	pH		8.4	pH	8.4 pH		
13		cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		**<LOD**

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
14	●	TPH (C6 to C40) petroleum group				<10	mg/kg		<10	mg/kg	<0.001 %		**<LOD**
				TPH									
15	●	acenaphthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			201-469-6	83-32-9									
16	●	acenaphthylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			205-917-1	208-96-8									
17	●	anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			204-371-1	120-12-7									
18		benzo[a]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
		601-033-00-9	200-280-6	56-55-3									
19		benzo[a]pyrene; benzo[def]chrysene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
		601-032-00-3	200-028-5	50-32-8									
20		benzo[b]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
		601-034-00-4	205-911-9	205-99-2									
21	●	benzo[ghi]perylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			205-883-8	191-24-2									
22		benzo[k]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
		601-036-00-5	205-916-6	207-08-9									
23		chrysene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
		601-048-00-0	205-923-4	218-01-9									
24		dibenz[a,h]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
		601-041-00-2	200-181-8	53-70-3									
25	●	fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			205-912-4	206-44-0									
26	●	fluorene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			201-695-5	86-73-7									
27	●	indeno[123-cd]pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			205-893-2	193-39-5									
28		naphthalene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
		601-052-00-2	202-049-5	91-20-3									
29	●	phenanthrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			201-581-5	85-01-8									
30	●	pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			204-927-3	129-00-0									
31		phenol				<1	mg/kg		<1	mg/kg	<0.0001 %		**<LOD**
		604-001-00-2	203-632-7	108-95-2									
										Total:	0.0336 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
●	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: TP103[2]

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
TP103[2]
Sample Depth:
0.50 m
Moisture content:
5.3%
(no correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 5.3% No Moisture Correction applied (MC)

#		Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1		arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		16	mg/kg	1.32	21.125	mg/kg	0.00211 %		
2		beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		0.56	mg/kg	2.775	1.554	mg/kg	0.000155 %		
3		boron { boron tribromide/trichloride/trifluoride (combined) }			10294-33-4, 10294-34-5, 7637-07-2		0.3	mg/kg	13.43	4.029	mg/kg	0.000403 %		
4		cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	<0.2	mg/kg	1.285	<0.257	mg/kg	<0.00002 %		**<LOD**
5		chromium { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		16	mg/kg	1.462	23.385	mg/kg	0.00234 %		
6		copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		7.1	mg/kg	1.126	7.994	mg/kg	0.000799 %		
7		lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	7.6	mg/kg	1.56	11.855	mg/kg	0.00076 %		
8		mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		**<LOD**
9		nickel { nickel dihydroxide }	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]		15	mg/kg	1.579	23.692	mg/kg	0.00237 %		
10		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<1	mg/kg	1.405	<1.405	mg/kg	<0.000141 %		**<LOD**
11		zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		26	mg/kg	2.774	72.128	mg/kg	0.00721 %		
12		pH			PH		8.7	pH		8.7	pH	8.7 pH		
13		cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		**<LOD**

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
14		TPH (C6 to C40) petroleum group		TPH		<10	mg/kg		<10	mg/kg	<0.001 %		**<LOD**
15		acenaphthene	201-469-6	83-32-9		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
16		acenaphthylene	205-917-1	208-96-8		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
17		anthracene	204-371-1	120-12-7		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
18		benzo[a]anthracene	200-280-6	56-55-3		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
19		benzo[a]pyrene; benzo[def]chrysene	200-028-5	50-32-8		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
20		benzo[b]fluoranthene	205-911-9	205-99-2		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
21		benzo[ghi]perylene	205-883-8	191-24-2		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
22		benzo[k]fluoranthene	205-916-6	207-08-9		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
23		chrysene	205-923-4	218-01-9		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
24		dibenz[a,h]anthracene	200-181-8	53-70-3		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
25		fluoranthene	205-912-4	206-44-0		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
26		fluorene	201-695-5	86-73-7		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
27		indeno[123-cd]pyrene	205-893-2	193-39-5		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
28		naphthalene	202-049-5	91-20-3		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
29		phenanthrene	201-581-5	85-01-8		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
30		pyrene	204-927-3	129-00-0		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
31		phenol	203-632-7	108-95-2		<1	mg/kg		<1	mg/kg	<0.0001 %		**<LOD**
										Total:	0.0177 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: TP106

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
TP106
Sample Depth:
0.20 m
Moisture content:
15%
(no correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 15% No Moisture Correction applied (MC)

#		Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1		arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		10	mg/kg	1.32	13.203	mg/kg	0.00132 %		
2		beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		0.54	mg/kg	2.775	1.499	mg/kg	0.00015 %		
3		boron { boron tribromide/trichloride/trifluoride (combined) }			10294-33-4, 10294-34-5, 7637-07-2		0.6	mg/kg	13.43	8.058	mg/kg	0.000806 %		
4		cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	<0.2	mg/kg	1.285	<0.257	mg/kg	<0.00002 %		**<LOD**
5		chromium { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		16	mg/kg	1.462	23.385	mg/kg	0.00234 %		
6		copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		12	mg/kg	1.126	13.511	mg/kg	0.00135 %		
7		lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	18	mg/kg	1.56	28.077	mg/kg	0.0018 %		
8		mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		**<LOD**
9		nickel { nickel dihydroxide }	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]		8.9	mg/kg	1.579	14.058	mg/kg	0.00141 %		
10		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<1	mg/kg	1.405	<1.405	mg/kg	<0.000141 %		**<LOD**
11		zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		35	mg/kg	2.774	97.095	mg/kg	0.00971 %		
12		pH			PH		8.4	pH		8.4	pH	8.4 pH		
13		cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		**<LOD**

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
14	●	TPH (C6 to C40) petroleum group				<10	mg/kg		<10	mg/kg	<0.001 %		**<LOD**
				TPH									
15	●	acenaphthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			201-469-6	83-32-9									
16	●	acenaphthylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			205-917-1	208-96-8									
17	●	anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			204-371-1	120-12-7									
18		benzo[a]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
		601-033-00-9	200-280-6	56-55-3									
19		benzo[a]pyrene; benzo[def]chrysene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
		601-032-00-3	200-028-5	50-32-8									
20		benzo[b]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
		601-034-00-4	205-911-9	205-99-2									
21	●	benzo[ghi]perylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			205-883-8	191-24-2									
22		benzo[k]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
		601-036-00-5	205-916-6	207-08-9									
23		chrysene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
		601-048-00-0	205-923-4	218-01-9									
24		dibenz[a,h]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
		601-041-00-2	200-181-8	53-70-3									
25	●	fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			205-912-4	206-44-0									
26	●	fluorene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			201-695-5	86-73-7									
27	●	indeno[123-cd]pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			205-893-2	193-39-5									
28		naphthalene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
		601-052-00-2	202-049-5	91-20-3									
29	●	phenanthrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			201-581-5	85-01-8									
30	●	pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			204-927-3	129-00-0									
31		phenol				<1	mg/kg		<1	mg/kg	<0.0001 %		**<LOD**
		604-001-00-2	203-632-7	108-95-2									
										Total:	0.0205 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
●	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: TP122

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
TP122
Sample Depth:
0.20 m
Moisture content:
6.1%
(no correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 6.1% No Moisture Correction applied (MC)

#		Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1		arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		14	mg/kg	1.32	18.485	mg/kg	0.00185 %		
2		beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		0.6	mg/kg	2.775	1.665	mg/kg	0.000167 %		
3		boron { boron tribromide/trichloride/trifluoride (combined) }			10294-33-4, 10294-34-5, 7637-07-2		0.7	mg/kg	13.43	9.401	mg/kg	0.00094 %		
4		cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	<0.2	mg/kg	1.285	<0.257	mg/kg	<0.00002 %		**<LOD**
5		chromium { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		16	mg/kg	1.462	23.385	mg/kg	0.00234 %		
6		copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		6.5	mg/kg	1.126	7.318	mg/kg	0.000732 %		
7		lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	13	mg/kg	1.56	20.278	mg/kg	0.0013 %		
8		mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		**<LOD**
9		nickel { nickel dihydroxide }	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]		13	mg/kg	1.579	20.533	mg/kg	0.00205 %		
10		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<1	mg/kg	1.405	<1.405	mg/kg	<0.000141 %		**<LOD**
11		zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		31	mg/kg	2.774	85.999	mg/kg	0.0086 %		
12		pH			PH		8.6	pH		8.6	pH	8.6 pH		
13		cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		**<LOD**

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
14		TPH (C6 to C40) petroleum group		TPH		<10	mg/kg		<10	mg/kg	<0.001 %		**<LOD**
15		acenaphthene	201-469-6	83-32-9		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
16		acenaphthylene	205-917-1	208-96-8		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
17		anthracene	204-371-1	120-12-7		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
18		benzo[a]anthracene	200-280-6	56-55-3		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
19		benzo[a]pyrene; benzo[def]chrysene	200-028-5	50-32-8		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
20		benzo[b]fluoranthene	205-911-9	205-99-2		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
21		benzo[ghi]perylene	205-883-8	191-24-2		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
22		benzo[k]fluoranthene	205-916-6	207-08-9		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
23		chrysene	205-923-4	218-01-9		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
24		dibenz[a,h]anthracene	200-181-8	53-70-3		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
25		fluoranthene	205-912-4	206-44-0		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
26		fluorene	201-695-5	86-73-7		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
27		indeno[123-cd]pyrene	205-893-2	193-39-5		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
28		naphthalene	202-049-5	91-20-3		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
29		phenanthrene	201-581-5	85-01-8		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
30		pyrene	204-927-3	129-00-0		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
31		phenol	203-632-7	108-95-2		<1	mg/kg		<1	mg/kg	<0.0001 %		**<LOD**
										Total:	0.0195 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: TP142

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
TP142
Sample Depth:
0.20 m
Moisture content:
10%
(no correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 10% No Moisture Correction applied (MC)

#		Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1		arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		15	mg/kg	1.32	19.805	mg/kg	0.00198 %		
2		beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		0.94	mg/kg	2.775	2.609	mg/kg	0.000261 %		
3		boron { boron tribromide/trichloride/trifluoride (combined) }			10294-33-4, 10294-34-5, 7637-07-2		0.2	mg/kg	13.43	2.686	mg/kg	0.000269 %		
4		cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	<0.2	mg/kg	1.285	<0.257	mg/kg	<0.00002 %		**<LOD**
5		chromium { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		27	mg/kg	1.462	39.462	mg/kg	0.00395 %		
6		copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		9.7	mg/kg	1.126	10.921	mg/kg	0.00109 %		
7		lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	17	mg/kg	1.56	26.517	mg/kg	0.0017 %		
8		mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		**<LOD**
9		nickel { nickel dihydroxide }	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]		21	mg/kg	1.579	33.169	mg/kg	0.00332 %		
10		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<1	mg/kg	1.405	<1.405	mg/kg	<0.000141 %		**<LOD**
11		zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		51	mg/kg	2.774	141.481	mg/kg	0.0141 %		
12		pH			PH		8.4	pH		8.4	pH	8.4 pH		
13		cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		**<LOD**

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
14	●	TPH (C6 to C40) petroleum group				<10	mg/kg		<10	mg/kg	<0.001 %		**<LOD**
				TPH									
15	●	acenaphthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			201-469-6	83-32-9									
16	●	acenaphthylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			205-917-1	208-96-8									
17	●	anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			204-371-1	120-12-7									
18		benzo[a]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
		601-033-00-9	200-280-6	56-55-3									
19		benzo[a]pyrene; benzo[def]chrysene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
		601-032-00-3	200-028-5	50-32-8									
20		benzo[b]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
		601-034-00-4	205-911-9	205-99-2									
21	●	benzo[ghi]perylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			205-883-8	191-24-2									
22		benzo[k]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
		601-036-00-5	205-916-6	207-08-9									
23		chrysene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
		601-048-00-0	205-923-4	218-01-9									
24		dibenz[a,h]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
		601-041-00-2	200-181-8	53-70-3									
25	●	fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			205-912-4	206-44-0									
26	●	fluorene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			201-695-5	86-73-7									
27	●	indeno[123-cd]pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			205-893-2	193-39-5									
28		naphthalene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
		601-052-00-2	202-049-5	91-20-3									
29	●	phenanthrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			201-581-5	85-01-8									
30	●	pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			204-927-3	129-00-0									
31		phenol				<1	mg/kg		<1	mg/kg	<0.0001 %		**<LOD**
		604-001-00-2	203-632-7	108-95-2									
										Total:	0.0283 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
●	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: TP137

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
TP137
Sample Depth:
0.10 m
Moisture content:
11%
(no correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 11% No Moisture Correction applied (MC)

#		Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1		arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		24	mg/kg	1.32	31.688	mg/kg	0.00317 %		
2		beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		1.4	mg/kg	2.775	3.885	mg/kg	0.000389 %		
3		boron { boron tribromide/trichloride/trifluoride (combined) }			10294-33-4, 10294-34-5, 7637-07-2		0.7	mg/kg	13.43	9.401	mg/kg	0.00094 %		
4		cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	<0.2	mg/kg	1.285	<0.257	mg/kg	<0.00002 %		**<LOD**
5		chromium { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		40	mg/kg	1.462	58.462	mg/kg	0.00585 %		
6		copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		16	mg/kg	1.126	18.014	mg/kg	0.0018 %		
7		lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	16	mg/kg	1.56	24.957	mg/kg	0.0016 %		
8		mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		**<LOD**
9		nickel { nickel dihydroxide }	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]		32	mg/kg	1.579	50.544	mg/kg	0.00505 %		
10		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<1	mg/kg	1.405	<1.405	mg/kg	<0.000141 %		**<LOD**
11		zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		76	mg/kg	2.774	210.835	mg/kg	0.0211 %		
12		pH			PH		8.4	pH		8.4	pH	8.4 pH		
13		cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		**<LOD**

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
14	●	TPH (C6 to C40) petroleum group				<10	mg/kg		<10	mg/kg	<0.001 %		**<LOD**
				TPH									
15	●	acenaphthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			201-469-6	83-32-9									
16	●	acenaphthylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			205-917-1	208-96-8									
17	●	anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			204-371-1	120-12-7									
18		benzo[a]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
		601-033-00-9	200-280-6	56-55-3									
19		benzo[a]pyrene; benzo[def]chrysene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
		601-032-00-3	200-028-5	50-32-8									
20		benzo[b]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
		601-034-00-4	205-911-9	205-99-2									
21	●	benzo[ghi]perylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			205-883-8	191-24-2									
22		benzo[k]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
		601-036-00-5	205-916-6	207-08-9									
23		chrysene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
		601-048-00-0	205-923-4	218-01-9									
24		dibenz[a,h]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
		601-041-00-2	200-181-8	53-70-3									
25	●	fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			205-912-4	206-44-0									
26	●	fluorene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			201-695-5	86-73-7									
27	●	indeno[123-cd]pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			205-893-2	193-39-5									
28		naphthalene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
		601-052-00-2	202-049-5	91-20-3									
29	●	phenanthrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			201-581-5	85-01-8									
30	●	pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			204-927-3	129-00-0									
31		phenol				<1	mg/kg		<1	mg/kg	<0.0001 %		**<LOD**
		604-001-00-2	203-632-7	108-95-2									
										Total:	0.0415 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
●	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: TP137[2]

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
TP137[2]
Sample Depth:
0.30 m
Moisture content:
10%
(no correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 10% No Moisture Correction applied (MC)

#		Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1		arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		21	mg/kg	1.32	27.727	mg/kg	0.00277 %		
2		beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		1.1	mg/kg	2.775	3.053	mg/kg	0.000305 %		
3		boron { boron tribromide/trichloride/trifluoride (combined) }			10294-33-4, 10294-34-5, 7637-07-2		0.5	mg/kg	13.43	6.715	mg/kg	0.000672 %		
4		cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	<0.2	mg/kg	1.285	<0.257	mg/kg	<0.00002 %		**<LOD**
5		chromium { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		34	mg/kg	1.462	49.693	mg/kg	0.00497 %		
6		copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		13	mg/kg	1.126	14.637	mg/kg	0.00146 %		
7		lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	18	mg/kg	1.56	28.077	mg/kg	0.0018 %		
8		mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		**<LOD**
9		nickel { nickel dihydroxide }	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]		26	mg/kg	1.579	41.067	mg/kg	0.00411 %		
10		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<1	mg/kg	1.405	<1.405	mg/kg	<0.000141 %		**<LOD**
11		zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		75	mg/kg	2.774	208.061	mg/kg	0.0208 %		
12		pH			PH		8	pH		8	pH	8pH		
13		cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		**<LOD**

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
14		TPH (C6 to C40) petroleum group		TPH		<10	mg/kg		<10	mg/kg	<0.001 %		**<LOD**
15		acenaphthene	201-469-6	83-32-9		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
16		acenaphthylene	205-917-1	208-96-8		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
17		anthracene	204-371-1	120-12-7		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
18		benzo[a]anthracene	200-280-6	56-55-3		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
19		benzo[a]pyrene; benzo[def]chrysene	200-028-5	50-32-8		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
20		benzo[b]fluoranthene	205-911-9	205-99-2		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
21		benzo[ghi]perylene	205-883-8	191-24-2		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
22		benzo[k]fluoranthene	205-916-6	207-08-9		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
23		chrysene	205-923-4	218-01-9		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
24		dibenz[a,h]anthracene	200-181-8	53-70-3		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
25		fluoranthene	205-912-4	206-44-0		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
26		fluorene	201-695-5	86-73-7		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
27		indeno[123-cd]pyrene	205-893-2	193-39-5		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
28		naphthalene	202-049-5	91-20-3		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
29		phenanthrene	201-581-5	85-01-8		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
30		pyrene	204-927-3	129-00-0		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
31		phenol	203-632-7	108-95-2		<1	mg/kg		<1	mg/kg	<0.0001 %		**<LOD**
										Total:	0.0385 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: TP146

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
TP146
Sample Depth:
0.20 m
Moisture content:
11%
(no correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 11% No Moisture Correction applied (MC)

#		Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1		arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		12	mg/kg	1.32	15.844	mg/kg	0.00158 %		
2		beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		0.64	mg/kg	2.775	1.776	mg/kg	0.000178 %		
3		boron { boron tribromide/trichloride/trifluoride (combined) }			10294-33-4, 10294-34-5, 7637-07-2		0.3	mg/kg	13.43	4.029	mg/kg	0.000403 %		
4		cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	<0.2	mg/kg	1.285	<0.257	mg/kg	<0.00002 %		**<LOD**
5		chromium { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		19	mg/kg	1.462	27.77	mg/kg	0.00278 %		
6		copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		5.1	mg/kg	1.126	5.742	mg/kg	0.000574 %		
7		lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	19	mg/kg	1.56	29.636	mg/kg	0.0019 %		
8		mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		**<LOD**
9		nickel { nickel dihydroxide }	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]		11	mg/kg	1.579	17.374	mg/kg	0.00174 %		
10		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<1	mg/kg	1.405	<1.405	mg/kg	<0.000141 %		**<LOD**
11		zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		39	mg/kg	2.774	108.192	mg/kg	0.0108 %		
12		pH			PH		8.2	pH		8.2	pH	8.2 pH		
13		cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		**<LOD**

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
14		TPH (C6 to C40) petroleum group		TPH		<10	mg/kg		<10	mg/kg	<0.001 %		**<LOD**
15		acenaphthene	201-469-6	83-32-9		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
16		acenaphthylene	205-917-1	208-96-8		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
17		anthracene	204-371-1	120-12-7		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
18		benzo[a]anthracene	200-280-6	56-55-3		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
19		benzo[a]pyrene; benzo[def]chrysene	200-028-5	50-32-8		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
20		benzo[b]fluoranthene	205-911-9	205-99-2		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
21		benzo[ghi]perylene	205-883-8	191-24-2		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
22		benzo[k]fluoranthene	205-916-6	207-08-9		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
23		chrysene	205-923-4	218-01-9		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
24		dibenz[a,h]anthracene	200-181-8	53-70-3		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
25		fluoranthene	205-912-4	206-44-0		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
26		fluorene	201-695-5	86-73-7		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
27		indeno[123-cd]pyrene	205-893-2	193-39-5		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
28		naphthalene	202-049-5	91-20-3		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
29		phenanthrene	201-581-5	85-01-8		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
30		pyrene	204-927-3	129-00-0		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
31		phenol	203-632-7	108-95-2		<1	mg/kg		<1	mg/kg	<0.0001 %		**<LOD**
										Total:	0.0215 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: TP146[2]

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
TP146[2]
Sample Depth:
0.40 m
Moisture content:
12%
(no correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 12% No Moisture Correction applied (MC)

#		Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1		arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		12	mg/kg	1.32	15.844	mg/kg	0.00158 %		
2		beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		0.67	mg/kg	2.775	1.859	mg/kg	0.000186 %		
3		boron { boron tribromide/trichloride/trifluoride (combined) }			10294-33-4, 10294-34-5, 7637-07-2		0.3	mg/kg	13.43	4.029	mg/kg	0.000403 %		
4		cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	<0.2	mg/kg	1.285	<0.257	mg/kg	<0.00002 %		**<LOD**
5		chromium { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		18	mg/kg	1.462	26.308	mg/kg	0.00263 %		
6		copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		2.2	mg/kg	1.126	2.477	mg/kg	0.000248 %		
7		lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	17	mg/kg	1.56	26.517	mg/kg	0.0017 %		
8		mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		**<LOD**
9		nickel { nickel dihydroxide }	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]		11	mg/kg	1.579	17.374	mg/kg	0.00174 %		
10		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<1	mg/kg	1.405	<1.405	mg/kg	<0.000141 %		**<LOD**
11		zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		35	mg/kg	2.774	97.095	mg/kg	0.00971 %		
12		pH			PH		8.4	pH		8.4	pH	8.4 pH		
13		cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		**<LOD**

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
14		TPH (C6 to C40) petroleum group		TPH		<10	mg/kg		<10	mg/kg	<0.001 %		**<LOD**
15		acenaphthene	201-469-6	83-32-9		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
16		acenaphthylene	205-917-1	208-96-8		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
17		anthracene	204-371-1	120-12-7		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
18		benzo[a]anthracene	200-280-6	56-55-3		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
19		benzo[a]pyrene; benzo[def]chrysene	200-028-5	50-32-8		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
20		benzo[b]fluoranthene	205-911-9	205-99-2		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
21		benzo[ghi]perylene	205-883-8	191-24-2		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
22		benzo[k]fluoranthene	205-916-6	207-08-9		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
23		chrysene	205-923-4	218-01-9		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
24		dibenz[a,h]anthracene	200-181-8	53-70-3		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
25		fluoranthene	205-912-4	206-44-0		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
26		fluorene	201-695-5	86-73-7		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
27		indeno[123-cd]pyrene	205-893-2	193-39-5		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
28		naphthalene	202-049-5	91-20-3		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
29		phenanthrene	201-581-5	85-01-8		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
30		pyrene	204-927-3	129-00-0		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
31		phenol	203-632-7	108-95-2		<1	mg/kg		<1	mg/kg	<0.0001 %		**<LOD**
										Total:	0.0198 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: SA10

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
SA10
Sample Depth:
0.40 m
Moisture content:
7.8%
(no correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 7.8% No Moisture Correction applied (MC)

#		Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1		arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		11	mg/kg	1.32	14.524	mg/kg	0.00145 %		
2		beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		0.74	mg/kg	2.775	2.054	mg/kg	0.000205 %		
3		boron { boron tribromide/trichloride/trifluoride (combined) }			10294-33-4, 10294-34-5, 7637-07-2		0.8	mg/kg	13.43	10.744	mg/kg	0.00107 %		
4		cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	<0.2	mg/kg	1.285	<0.257	mg/kg	<0.00002 %		**<LOD**
5		chromium { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		20	mg/kg	1.462	29.231	mg/kg	0.00292 %		
6		copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		8.4	mg/kg	1.126	9.457	mg/kg	0.000946 %		
7		lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	9.6	mg/kg	1.56	14.974	mg/kg	0.00096 %		
8		mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		**<LOD**
9		nickel { nickel dihydroxide }	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]		16	mg/kg	1.579	25.272	mg/kg	0.00253 %		
10		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<1	mg/kg	1.405	<1.405	mg/kg	<0.000141 %		**<LOD**
11		zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		34	mg/kg	2.774	94.321	mg/kg	0.00943 %		
12		pH			PH		8.2	pH		8.2	pH	8.2 pH		
13		cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		**<LOD**

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
14		TPH (C6 to C40) petroleum group		TPH		<10	mg/kg		<10	mg/kg	<0.001 %		**<LOD**
15		acenaphthene	201-469-6	83-32-9		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
16		acenaphthylene	205-917-1	208-96-8		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
17		anthracene	204-371-1	120-12-7		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
18		benzo[a]anthracene	200-280-6	56-55-3		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
19		benzo[a]pyrene; benzo[def]chrysene	200-028-5	50-32-8		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
20		benzo[b]fluoranthene	205-911-9	205-99-2		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
21		benzo[ghi]perylene	205-883-8	191-24-2		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
22		benzo[k]fluoranthene	205-916-6	207-08-9		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
23		chrysene	205-923-4	218-01-9		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
24		dibenz[a,h]anthracene	200-181-8	53-70-3		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
25		fluoranthene	205-912-4	206-44-0		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
26		fluorene	201-695-5	86-73-7		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
27		indeno[123-cd]pyrene	205-893-2	193-39-5		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
28		naphthalene	202-049-5	91-20-3		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
29		phenanthrene	201-581-5	85-01-8		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
30		pyrene	204-927-3	129-00-0		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
31		phenol	203-632-7	108-95-2		<1	mg/kg		<1	mg/kg	<0.0001 %		**<LOD**
										Total:	0.0211 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Appendix A: Classifier defined and non CLP determinands

- **boron tribromide/trichloride/trifluoride (combined)** (CAS Number: 10294-33-4, 10294-34-5, 7637-07-2)

Description/Comments: Combines the hazard statements and the average of the conversion factors for boron tribromide, boron trichloride and boron trifluoride
Data source: N/A
Data source date: 06 Aug 2015
Hazard Statements: EUH014 , Acute Tox. 2 H330 , Acute Tox. 2 H300 , Skin Corr. 1A H314 , Skin Corr. 1B H314

- **chromium(III) oxide (worst case)** (EC Number: 215-160-9, CAS Number: 1308-38-9)

Description/Comments: Data from C&L Inventory Database
Data source: https://echa.europa.eu/information-on-chemicals/cl-inventory-database/-/discli/details/33806
Data source date: 17 Jul 2015
Hazard Statements: Acute Tox. 4 H332 , Acute Tox. 4 H302 , Eye Irrit. 2 H319 , STOT SE 3 H335 , Skin Irrit. 2 H315 , Resp. Sens. 1 H334 , Skin Sens. 1 H317 , Repr. 1B H360FD , Aquatic Acute 1 H400 , Aquatic Chronic 1 H410

- **pH** (CAS Number: PH)

Description/Comments: Appendix C4
Data source: WM3 1st Edition 2015
Data source date: 25 May 2015
Hazard Statements: None.

- **salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex**

CLP index number: 006-007-00-5
Description/Comments: Conversion factor based on a worst case compound: sodium cyanide
Data source: Commission Regulation (EC) No 790/2009 - 1st Adaptation to Technical Progress for Regulation (EC) No 1272/2008. (ATP1)
Additional Hazard Statement(s): EUH032 >= 0.2 %
Reason for additional Hazards Statement(s):
14 Dec 2015 - EUH032 >= 0.2 % hazard statement sourced from: WM3, Table C12.2

- **TPH (C6 to C40) petroleum group** (CAS Number: TPH)

Description/Comments: Hazard statements taken from WM3 1st Edition 2015; Risk phrases: WM2 3rd Edition 2013
Data source: WM3 1st Edition 2015
Data source date: 25 May 2015
Hazard Statements: Flam. Liq. 3 H226 , Asp. Tox. 1 H304 , STOT RE 2 H373 , Muta. 1B H340 , Carc. 1B H350 , Repr. 2 H361d , Aquatic Chronic 2 H411

- **acenaphthene** (EC Number: 201-469-6, CAS Number: 83-32-9)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 17 Jul 2015
Hazard Statements: Eye Irrit. 2 H319 , STOT SE 3 H335 , Skin Irrit. 2 H315 , Aquatic Acute 1 H400 , Aquatic Chronic 1 H410 , Aquatic Chronic 2 H411

- **acenaphthylene** (EC Number: 205-917-1, CAS Number: 208-96-8)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 17 Jul 2015
Hazard Statements: Acute Tox. 4 H302 , Acute Tox. 1 H330 , Acute Tox. 1 H310 , Eye Irrit. 2 H319 , STOT SE 3 H335 , Skin Irrit. 2 H315

- **anthracene** (EC Number: 204-371-1, CAS Number: 120-12-7)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 17 Jul 2015
Hazard Statements: Eye Irrit. 2 H319 , STOT SE 3 H335 , Skin Irrit. 2 H315 , Skin Sens. 1 H317 , Aquatic Acute 1 H400 , Aquatic Chronic 1 H410

- **benzo[ghi]perylene** (EC Number: 205-883-8, CAS Number: 191-24-2)

Description/Comments: Data from C&L Inventory Database; SDS Sigma Aldrich 28/02/2015
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 23 Jul 2015
Hazard Statements: Aquatic Acute 1 H400 , Aquatic Chronic 1 H410

- **fluoranthene** (EC Number: 205-912-4, CAS Number: 206-44-0)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 21 Aug 2015
Hazard Statements: Acute Tox. 4 H302 , Aquatic Acute 1 H400 , Aquatic Chronic 1 H410

- **fluorene** (EC Number: 201-695-5, CAS Number: 86-73-7)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 06 Aug 2015
Hazard Statements: Aquatic Acute 1 H400 , Aquatic Chronic 1 H410

- **indeno[123-cd]pyrene** (EC Number: 205-893-2, CAS Number: 193-39-5)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 06 Aug 2015
Hazard Statements: Carc. 2 H351

- **phenanthrene** (EC Number: 201-581-5, CAS Number: 85-01-8)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 06 Aug 2015
Hazard Statements: Acute Tox. 4 H302 , Eye Irrit. 2 H319 , STOT SE 3 H335 , Carc. 2 H351 , Skin Sens. 1 H317 , Aquatic Acute 1 H400 , Aquatic Chronic 1 H410 , Skin Irrit. 2 H315

- **pyrene** (EC Number: 204-927-3, CAS Number: 129-00-0)

Description/Comments: Data from C&L Inventory Database; SDS Sigma Aldrich 2014
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 21 Aug 2015
Hazard Statements: Skin Irrit. 2 H315 , Eye Irrit. 2 H319 , STOT SE 3 H335 , Aquatic Acute 1 H400 , Aquatic Chronic 1 H410

- **ethylbenzene** (EC Number: 202-849-4, CAS Number: 100-41-4)

CLP index number: 601-023-00-4
Description/Comments:
Data source: Commission Regulation (EU) No 605/2014 – 6th Adaptation to Technical Progress for Regulation (EC) No 1272/2008. (ATP6)
Additional Hazard Statement(s): Carc. 2 H351
Reason for additional Hazards Statement(s):
03 Jun 2015 - Carc. 2 H351 hazard statement sourced from: IARC Group 2B (77) 2000

- **1,1-dichloroethane and 1,2-dichloroethane (combined)** (EC Number: 203-458-1, 200-863-5, CAS Number: 107-06-2, 75-34-3)

Description/Comments: Combines the hazard statements and risk phrases for 1,1-dichloroethane and 1,2-dichloroethane
Data source: N/a
Data source date: 14 Oct 2016
Hazard Statements: Flam. Liq. 2 H225 , Acute Tox. 4 H302 , Skin Irrit. 2 H315 , Eye Irrit. 2 H319 , STOT SE 3 H335 , Carc. 1B H350 , Aquatic Chronic 3 H412

Appendix B: Rationale for selection of metal species

arsenic {arsenic trioxide}

Worst case species based on risk phrases

beryllium {beryllium oxide}

Worst case species based on risk phrases

boron {boron tribromide/trichloride/trifluoride (combined)}

Worst case species based on risk phrases

cadmium {cadmium sulfide}

Worst case species based on risk phrases

chromium {chromium(III) oxide (worst case)}

All chromium VI concentrations below the laboratory LoD (4mg/kg).

copper {dicopper oxide; copper (I) oxide}

Most likely common species

lead {lead chromate}

Worst case species based on risk phrases

mercury {mercury dichloride}

Worst case species based on risk phrases

nickel {nickel dihydroxide}

Worst case species based on risk phrases

selenium {selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex}

Worst case species based on risk phrases

zinc {zinc chromate}

Worst case species based on risk phrases

cyanides {salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex}

Worst case species

dichloroethane {1,1-dichloroethane and 1,2-dichloroethane (combined)}

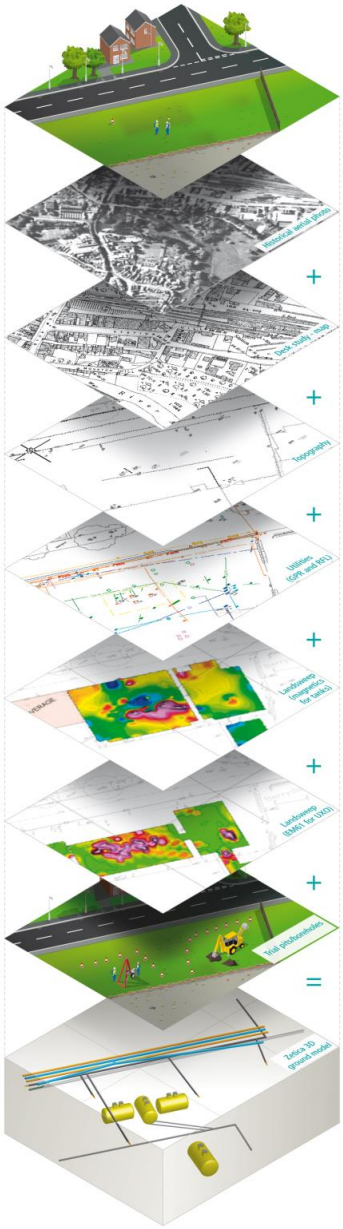
Worst case species based on risk phrases

Appendix C: Version

HazWasteOnline Classification Engine: WM3 1st Edition v1.1, May 2018
HazWasteOnline Classification Engine Version: 2021.293.4891.9295 (20 Oct 2021)
HazWasteOnline Database: 2021.293.4891.9295 (20 Oct 2021)

This classification utilises the following guidance and legislation:
WM3 v1.1 - Waste Classification - 1st Edition v1.1 - May 2018
CLP Regulation - Regulation 1272/2008/EC of 16 December 2008
1st ATP - Regulation 790/2009/EC of 10 August 2009
2nd ATP - Regulation 286/2011/EC of 10 March 2011
3rd ATP - Regulation 618/2012/EU of 10 July 2012
4th ATP - Regulation 487/2013/EU of 8 May 2013
Correction to 1st ATP - Regulation 758/2013/EU of 7 August 2013
5th ATP - Regulation 944/2013/EU of 2 October 2013
6th ATP - Regulation 605/2014/EU of 5 June 2014
WFD Annex III replacement - Regulation 1357/2014/EU of 18 December 2014
Revised List of Waste 2014 - Decision 2014/955/EU of 18 December 2014
7th ATP - Regulation 2015/1221/EU of 24 July 2015
8th ATP - Regulation (EU) 2016/918 of 19 May 2016
9th ATP - Regulation (EU) 2016/1179 of 19 July 2016
10th ATP - Regulation (EU) 2017/776 of 4 May 2017
HP14 amendment - Regulation (EU) 2017/997 of 8 June 2017
13th ATP - Regulation (EU) 2018/1480 of 4 October 2018
14th ATP - Regulation (EU) 2020/217 of 4 October 2019
15th ATP - Regulation (EU) 2020/1182 of 19 May 2020
The Chemicals (Health and Safety) and Genetically Modified Organisms (Contained Use)(Amendment etc.) (EU Exit) Regulations 2019 - UK: 2019 No. 720 of 27th March 2019
The Chemicals (Health and Safety) and Genetically Modified Organisms (Contained Use)(Amendment etc.) (EU Exit) Regulations 2020 - UK: 2020 No. 1567 of 16th December 2020
The Waste and Environmental Permitting etc. (Legislative Functions and Amendment etc.) (EU Exit) Regulations 2020 - UK: 2020 No. 1540 of 16th December 2020
POPs Regulation 2019 - Regulation (EU) 2019/1021 of 20 June 2019

Appendix 9: Zetica Radiological Assessment Report



groundcheck

Client: BWB Consulting
Site: Former RAF Upper Heyford
Ref: P11031-21
Date: 7th September 2021

DESK STUDY

EXECUTIVE SUMMARY

Zetica Ltd was commissioned by BWB Consulting (the Client) to carry out a Desk Study for approximately 400 hectares (ha) of land east of the former Royal Air Force (RAF) Upper Heyford, near Bicester, Oxfordshire (the 'Site').

The aim of the desk study was to identify past operations and activities at the Site and try to determine the location of sources of radioactive contaminants and any other non-conventional contaminants.

The main findings of the report are summarised below.

- In 1918 RAF Upper Heyford was established on land approximately 0.4km west of the Site. It was used as a mobilisation station and later became a bomber training base.
- By World War Two (WWII), RAF Upper Heyford had been extended onto land adjacent to the western boundary of the Site. During this time the Site comprised farm buildings, open ground and minor roadways.
- Between 1951 and 1994 RAF Upper Heyford came under the control of United States Air Force (USAF) Strategic Air Command (SAC) as a heavy bomber airfield. Facilities to store nuclear weapons were established adjacent to the western boundary of the Site. The Site remained farm buildings, open ground, railway tracks and roadways.
- In 1994 RAF Upper Heyford was transferred to the Ministry of Defence (MoD) for disposal, and all nuclear armaments at the airfield were removed. The former airfield is now a mixed use commercial and residential development.
- The Site comprises open ground, railway tracks, roadway, and wooded areas outside of the airfield boundary. No records have been found to indicate that airfield activities associated with RAF Upper Heyford encroached onto the Site.
- No evidence has been found to indicate the presence of radiological or other non-conventional contamination on the Site.

CONTENTS

Figures, Plates, Tables & Drawings

DESK STUDY

1 INTRODUCTION

1.1 Project Outline

Zetica Ltd was commissioned by BWB Consulting (the Client) to carry out a Desk Study for approximately 400 hectares (ha) of land east of the Former Royal Air Force (RAF) Upper Heyford, near Bicester, Oxfordshire (the 'Site').

The aim of the desk study was to identify past operations and activities at the Site and try to determine the location of sources of radioactive contaminants.

The research looked at site development, operations and activities, alongside available detail of construction/development works that may have enabled disposal of materials that cannot be readily identified today.

1.2 Sources of Information

Zetica Ltd researched the history of the Site and its surrounding area using a range of information sources. The main sources of information are detailed in the following sections and referenced at the end of this report.

1.2.1 Zetica Ltd Defence Related Site Records

Zetica Ltd's in-house records were consulted, including reference books and archived materials from past work in the region. Relevant documents have been cited within the bibliography of this report.

1.2.2 Other Historical Records, Maps and Drawings

Reference documents including historical maps, aerial photographs and drawings have been consulted from sources such as the National Archives, the US National Archives & Records Administration (NARA), the National Collection of Aerial Photography (NCAP), the RAF Museum, the Oxfordshire History Centre, and the Environment Agency.

1.3 Data Confidence Level

In general, there is a high level of confidence in the researched information sources used for this report.

It should be noted that it has not been possible to obtain detailed historical aerial photography for the entire Site, as access to the Historic England archive is limited.

Readily available aerial photography and photograph already held by Zetica has been used where possible.

2 THE SITE

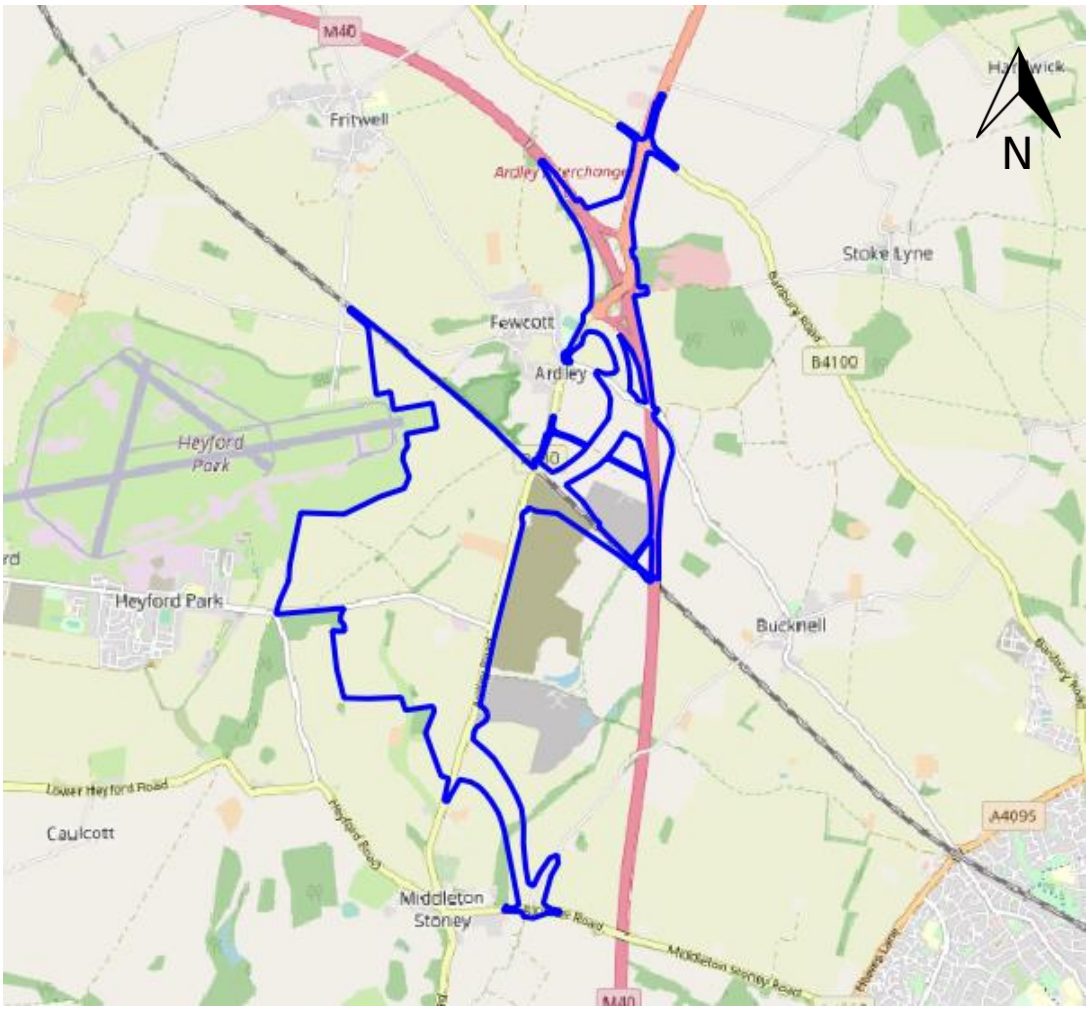
2.1 Site Location

The Site is centred on Ordnance Survey National Grid Reference (OSNGR) SP 537266. It is located approximately 4.2km northwest of Bicester town centre.

The Site comprises open ground, railway tracks, roads, and wooded areas. The Site is bounded to the north, east, and south by open ground and wooded areas, and to the west by the former RAF Upper Heyford and open ground.

Figure 1 is a Site location map and Plate 1 is a recent aerial photograph of the Site.

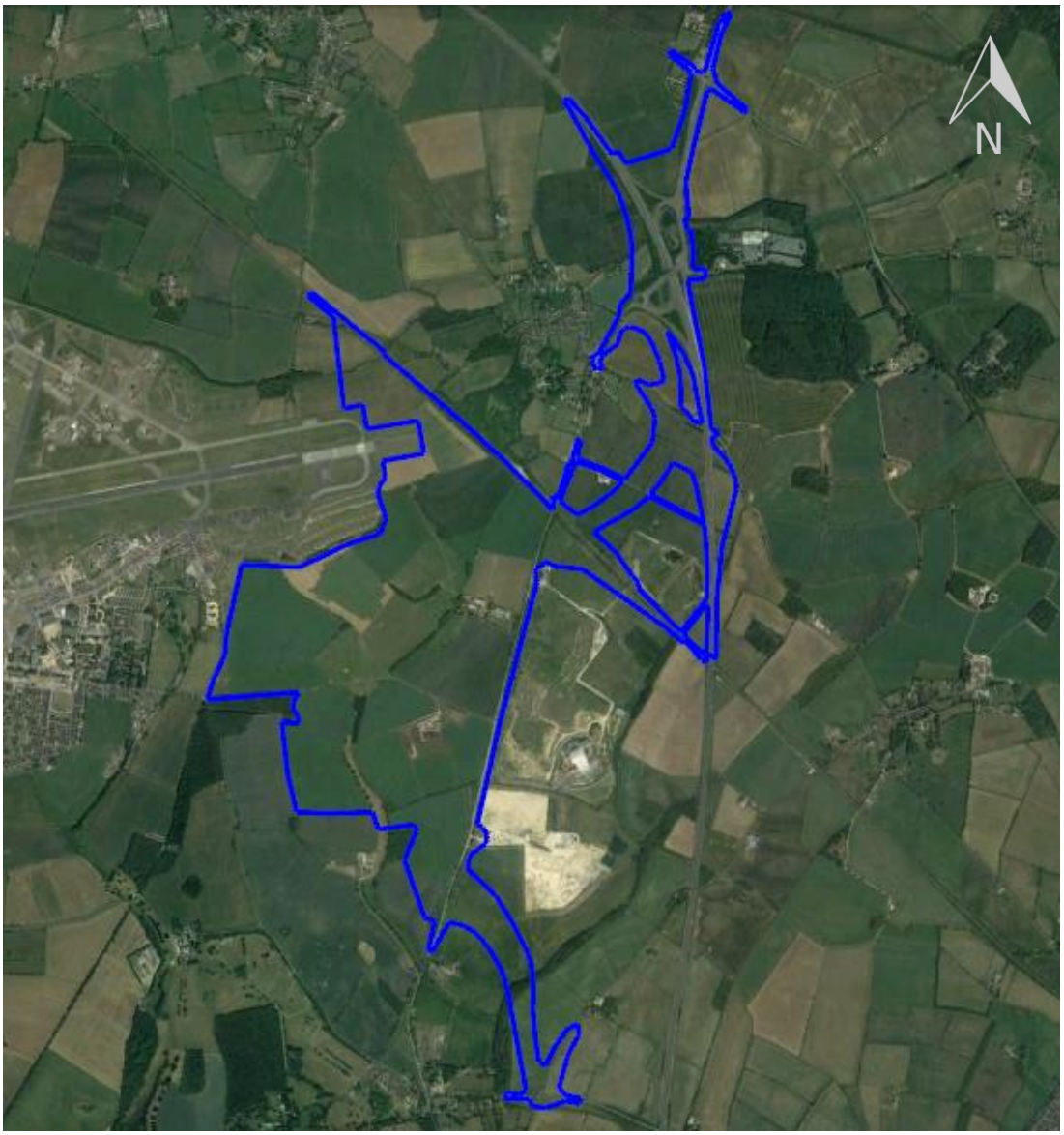
Figure 1	Site location map



Source: OpenStreetMap *Not to Scale*

Legend	Site boundary

Plate 1	Recent aerial photograph of the Site



Source: Google Earth *Not to Scale*

Legend	Site boundary

3 SITE HISTORY

The Site has historically comprised farms and associated open farmland in addition to wooded areas, small roadways, and 1No. railway line.

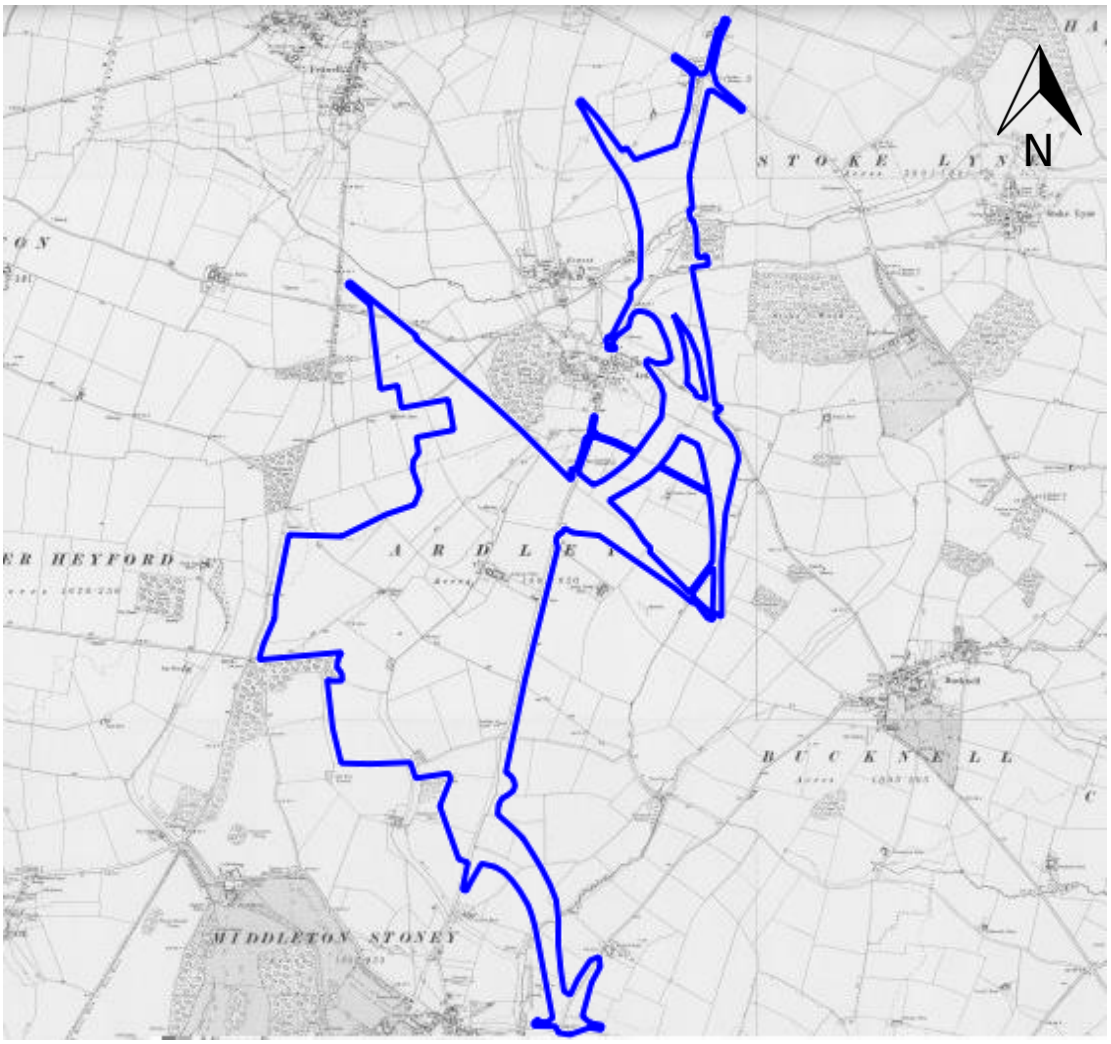
More recent developments include the construction of the M40 motorway across the eastern part of the Site.

A brief history of the military activity in the vicinity of the Site is given in Section 4.

3.1 Historical Map and Aerial Photograph Review

The historical map of 1900 (Figure 2) shows the Site comprised several farm buildings and associated open farmland, and several minor roadways.

Figure 2	Historical map, 1900



Source: © Crown Copyright 2021. Reproduced by permission of Ordnance Survey *Not to Scale*

Legend	Site boundary

During WWI, RAF Upper Heyford was established approximately 0.4km west of the Site (see Section 4.1). The Site remained undeveloped open ground.

By 1922 1No. railway line was established across the central part of the Site.

By 1940 RAF Upper Heyford had expanded onto land adjacent to the western boundary of the Site.

Plates 2 and 3 are aerial photographs dated the 27th November 1940, showing the central part of the Site.

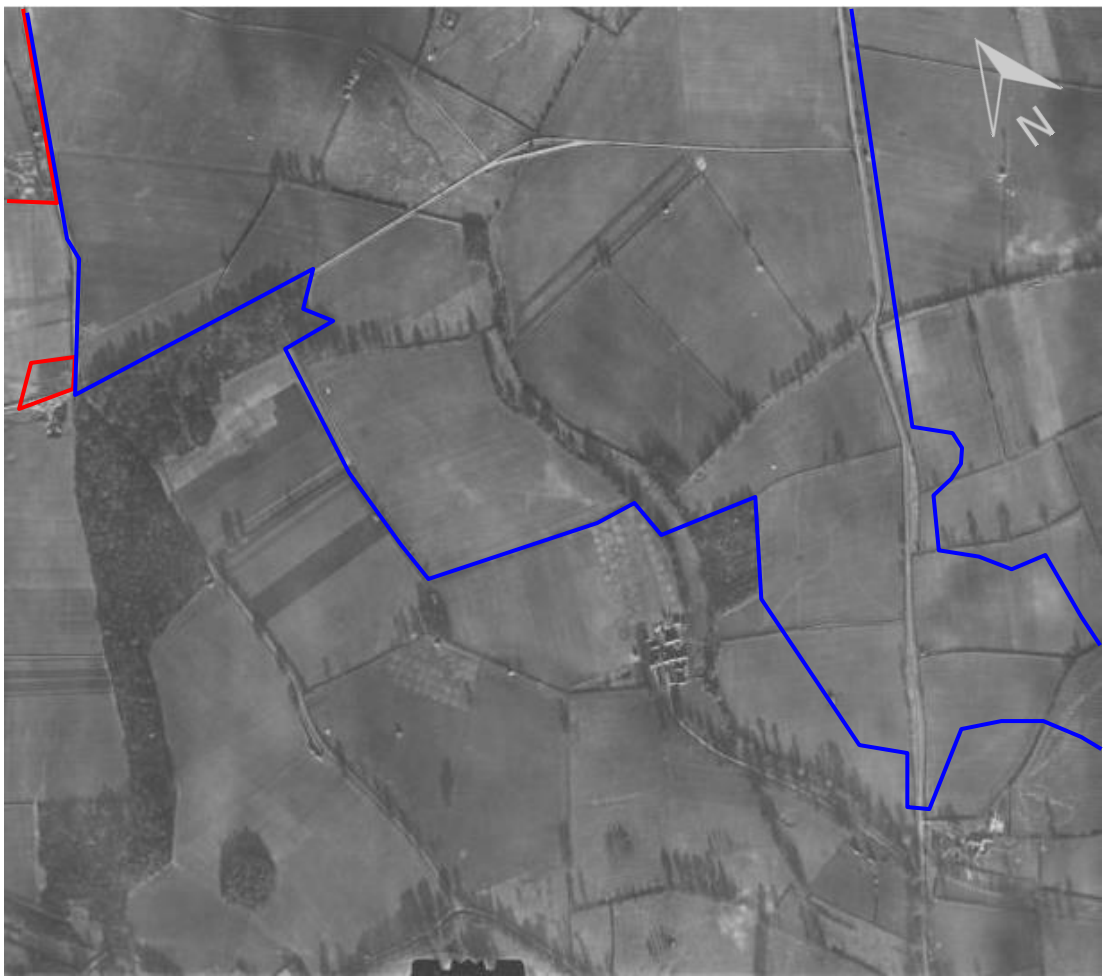
They show that the Site comprised open ground, 1No. railway line and farm buildings. Parts of a dispersal area and recreational facilities associated with RAF Upper Heyford can be seen to the west of the Site.

Plate 2	Aerial photograph, 27th November 1940

Source: NCAP *Not to Scale*

Legend	Site boundary	RAF Upper Heyford

Plate 3	Aerial photograph, 27th November 1940



Source: NCAP *Not to Scale*

Legend	Site boundary	RAF Upper Heyford

Following WWII, the Site remained largely undeveloped.

By the 1970s, a quarry had been established on land encroaching onto the central part of the Site, as shown in Plate 4, an aerial photograph dating from 1981. The nuclear stores associated with RAF Upper Heyford can be seen adjacent to the Site (see Section 4.1).

Plate 4	Aerial photograph, c. 1981

Source: NCAP *Not to Scale*

Legend	Site boundary	RAF Upper Heyford nuclear storage area	Quarry

By 1991 the M40 motorway had been established across the north-eastern part of the Site (see Plate 1).

By 2004 the quarry encroaching onto the Site had been infilled and a new quarry established to the south, adjacent to the eastern boundary of the Site (see Plate 1).

4 MILITARY HISTORY

4.1 RAF Upper Heyford

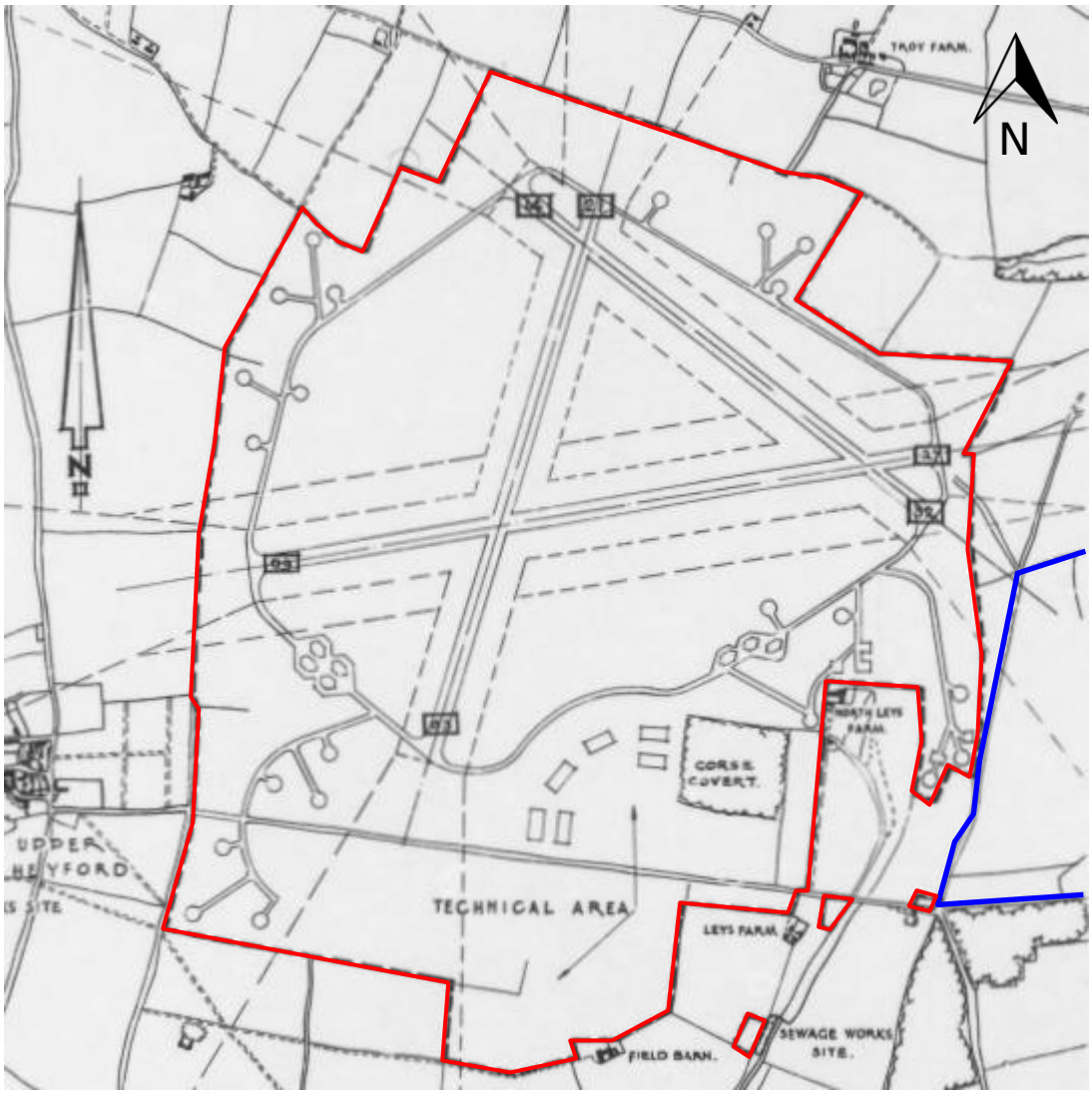
In 1918 RAF Upper Heyford was established within approximately 0.4km west of the Site. It was used as a mobilisation station for RAF and Canadian Air Force (CAF) squadrons.

The airfield briefly closed in 1920, before being reopened in 1927 as a bomber base.

By the outbreak of WWII, the airfield had expanded onto land adjacent to the western boundary of the Site. During WWII RAF Upper Heyford was converted into a training station for Bomber Command and was occupied primarily by No. 16 Operational Training Unit (OTU).

Figure 3 is a site plan of RAF Upper Heyford, dating from 1945. It shows the main airfield site and several dispersed sites adjacent and in close proximity to the Site.

Figure 3 Plan of RAF Upper Heyford, 1945



Source: RAF Museum *Not to Scale*

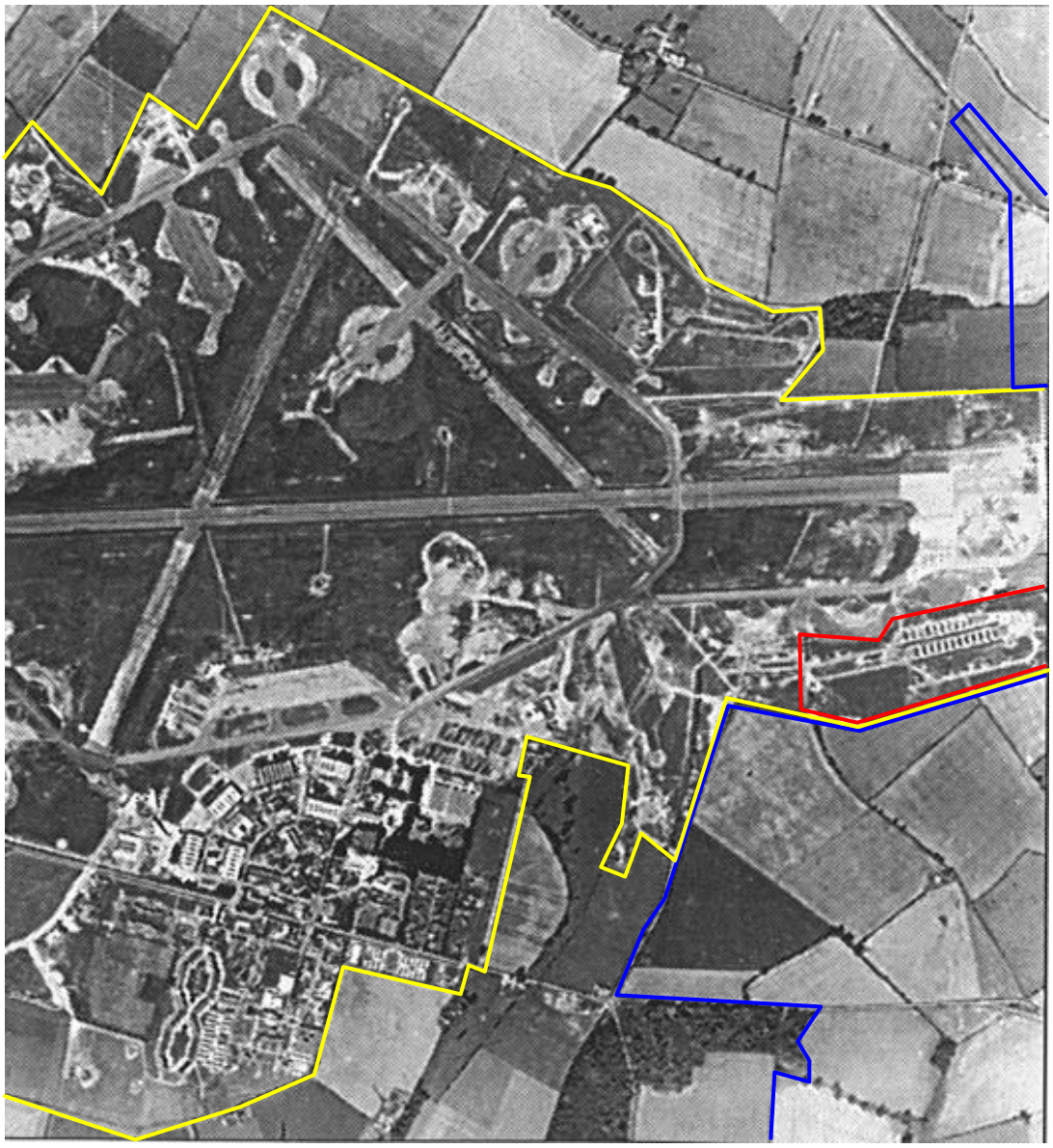
Legend	Site boundary	RAF Upper Heyford

Post-WWII RAF Upper Heyford was used for glider and parachute training, before being requisitioned by the United States Air Force (USAF) Strategic Air Command (SAC) as a heavy bomber airfield. The airfield was expanded and facilities to store nuclear weapons were established adjacent to the western boundary of the Site.

Several types of nuclear-capable aircraft were stationed at the airfield at this time. Between 1952 and 1965 this included the Boeing B-50 Superfortress, Boeing B-47 Stratojet, Convair B-36 Peacemaker, and Boeing B-52 Stratofortress.

Plate 5 is an aerial photograph dated the 31st August 1954. It shows the newly expanded airfield and nuclear stores adjacent to the western boundary of the Site.

Plate 5	Aerial photograph, 31st August 1954



Source: Historic England *Not to Scale*

Legend	Site boundary	RAF Upper Heyford	Nuclear bomb store

In 1978 an additional nuclear bomb store was added to the airfield, approximately 0.8km west of the Site.

In 1994 RAF Upper Heyford was transferred to the Ministry of Defence (MoD) for disposal and the nuclear armaments were removed. It is now a mixed use commercial and residential development.

Details of activities at RAF Upper Heyford that may provide a source of radiological hazard are given in the Sections below.

Aircraft Breaking

No records have been found to indicate that any aircraft breaking took place at RAF Upper Heyford.

Nuclear Weapons Stores

No records have been found indicating that any nuclear weapon storage areas were located on the Site.

2No. nuclear storage areas were established at RAF Upper Heyford between 1951 and 1978.

1No. was located adjacent to the western boundary of the Site. It is located within the boundary of the airfield, which did not encroach onto the Site.

Disposal Areas

No official disposal areas have been identified at RAF Upper Heyford.

Any operational military airfield will have had disposal areas for surplus or faulty aircraft parts. During wartime, this typically took the form of a burning or burial pit. It is considered unlikely that these would have been located on the Site, which was outside of the airfield boundary.

4.2 Aircraft Crashes

No records have been found to indicate that any aircraft crashes took place on the Site. The nearest are detailed below.

4th August 1940

1No. Fairey Battle I (L5113) bomber aircraft crashed at Middleton Stoney, within approximately 0.5km southwest of the Site.

19th June 1941

1No. Handley Page Hampden (AD831) bomber aircraft crashed on a field at Baynards Green, within approximately 0.4km north of the Site.

28th November 1943

2No. Vickers Wellington (K3923 and HE904) collided in mid air over Baynards Green, in close proximity to the Site.

8th February 1954

1No. Boeing B-47E (52-0023) jet aircraft crashed in Stoke Wood, within approximately 0.4km east of the Site.

5 POTENTIAL SOURCES OF RADIOACTIVE CONTAMINATION

5.1 RAF Upper Heyford

Waste from aircraft disposal should be considered hazardous. It contains a range of conventional contaminants and potentially radioactive materials (such as radium from luminescent dials).

No records have been found to indicate that any disposal of aircraft parts took place on the Site.

Given the Site's location outside the airfield boundary, it is considered very unlikely for any aircraft parts (including dials using luminescent paint) to have been buried on the Site.

6 CONCLUSIONS

From the evidence in the documents and the data acquired, the following conclusions have been reached:

- In 1918 RAF Upper Heyford was established on land approximately 0.4km west of the Site. It was used as a mobilisation station and later became a bomber training base.
- By WWII, RAF Upper Heyford had extended onto land adjacent to the western boundary of the Site. During this time the Site comprised farm buildings, open ground and minor roadways.
- Between 1951 and 1994 RAF Upper Heyford came under the control of USAF SAC as a heavy bomber airfield. Facilities to store nuclear weapons were established adjacent to the western boundary of the Site. The Site remained farm buildings, open ground, railway tracks and roadways.
- Facilities to store nuclear weapons were established adjacent to the western boundary of the Site.
- In 1994 RAF Upper Heyford was transferred to the MoD for disposal and all nuclear armaments at the airfield were removed. The former airfield is now a mixed use commercial and residential development.
- The Site comprises open ground, railway tracks, roadway, and wooded areas outside of the airfield boundary. No records have been found to indicate that airfield activities associated with RAF Upper Heyford encroached onto the Site.
- No evidence has been found to indicate the presence of a radiological or other non-conventional contaminant hazard on the Site.

APPENDICES

Appendix 1 Bibliography

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Appendix 2 General Notes

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Appendix 10: 1st Line Defence Detailed UXO Assessment Report

Detailed Unexploded Ordnance (UXO) Risk Assessment

Project Name	RAF Heyford, Oxfordshire
Client	BWB Consulting Limited
Site Address	RAF Upper Heyford, Oxfordshire
Report Reference	DA13850-00
Date	24th August 2021
Originator	LG

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Executive Summary

Site Location and Description

The site is located approximately 4km west to 7.5km north-west of Bicester town centre and approximately 17.5km north of Oxford city centre. The villages of Ardley and Fewcott are located between the northern and western sections of the site, whilst the village of Middleton Stoney is located to the south-west of the site.

The site is bound to the north, east and south by large areas of areas of undeveloped agricultural land, farm access tracks, as well as several minor and some major roadways, including *Ardley Road*, *B4100*, B430, *A43*, *M4*0, to the west by the runway and structures of the former RAF/USAF Upper Heyford aerodrome, areas of agricultural land, woodland, several roadways including *Camp Road*, *Chilgrove Drive*, *Somerton Road*, and a section of the *Chiltern Railway line*.

The site is approximately centred on the OS grid reference: **SP 53884 26661**.

Proposed Works

Information provided by BWB Consulting Limited indicates that the nature of the proposed works will include the construction of a rail freight interchange and large distribution facilities which will include extensive earthworks, building sheds and new roads. Ground investigation work will include 120 exploratory holes across the site, consisting of trial pits, shallow dynamic samples holes and deeper rotary boreholes.

Geology and Bomb Penetration Depth

The British Geological Survey (BGS) map shows the site to be predominantly underlain by White Limestone Formation - Limestone, with no recorded superficial deposits. The site is also interspersed with smaller areas of Rutland Formation – Mudstone, with superficial deposits of Head - Clay, Silt, Sand and Gravel in the north-west section of the site, and areas of Forest Marble Formation – Limestone, with superficial deposits of Alluvium - Clay, Silt, Sand and Gravel throughout the southern and western sections of the site. The entire site area is underlain by Sedimentary Bedrock formed during the Jurassic Period.

Site-specific geotechnical information was not available to 1st Line Defence at the time of the production of this report. An assessment of maximum bomb penetration depth can be made once such data becomes available, or by a UXO specialist during on-site support.

It should be noted that the maximum depth that a bomb could reach may vary across a site and will be largely dependent on the specific underlying geological strata and its density.

UXO Risk Assessment

1st Line Defence has assessed that the risk from items of UXO is not considered to be homogenous across the site. There is an assessed **Medium Risk** from items of German aerial delivered UXO, items of anti-aircraft UXO and items of Allied UXO within the north-western section of the site. Whereas there is an assessed **Low Risk** from items of German aerial delivered UXO, items of anti-aircraft UXO and items of Allied UXO across the remainder of the site. A risk map is presented in **Annex P**.

German Risk:

- During WWII the site was located within the Rural District of Ploughly, which was subject to an overall very low density of bombing according to Home Office bombing statistics, with an average of 3.5 items of ordnance per 1,000 acres. This was mainly due to the lack of strategic bombing targets and the large areas of agricultural land that predominantly occupied much of the rural districts.
- As the site comprised agricultural land during WWII, there is no particular reason to suspect that the site area itself would have been targeted or directly attacked. However, the presence of strategic targets in the surrounding vicinity; notably RAF Upper Heyford airfield immediately adjacent to the west of the site, RAF Weston-on-the-Green which was located approximately 2.5km south, RAF Croughton located approximately 2.5km north and RAF Bicester, located approximately 4.3km south-east of the site. These are known to have been subject to specific bombing raids, and their relative proximity is anticipated to cause a slight elevation of the bomb density across the site area in general. More than 62 HE bomb strikes are recorded to have fallen in the vicinity of Weston-on-the-Green parish to

UXO Risk Assessment

the south of the site, 29 within the parish of Upper Heyford parish immediately to the west, 17 in Fritwell parish to the north-west, one HE bomb strike and several Incendiary bombs within Stoke Lyne parish.

- **Annex L** provides an overlay of bomb strikes with specified and approximate locations derived from local ARP Logbook records obtained from Oxfordshire History Centre and a bomb map obtained from Oxfordshire County Council. Although it should be noted that this map does not provide a comprehensive account of the bombing on site, nor does it denote exact bomb strike locations.
- It is evident that the closest bombing target would have been RAF Upper Heyford – various sources confirm that the airfield was attacked on several occasions, with bombs falling both on and close to the station. No bomb census mapping was available for the area, so it not clear exactly where all of the recorded bombs fell on and around the site. However, it might be argued that the risk of UXB contamination is elevated the closer the proximity to the airfield boundaries.
- Due to the size and largely rural nature of the site, it has not been possible to assess signs of damage across the entire area in detail. Although on the basis of OS mapping structures in the area surrounding the site appear intact post-war.
- As much of the site was occupied by open rural land, it is considered possible that UXBs could have gone undetected, as bomb entry holes may have been obscured or overlooked in vegetated areas or areas under crop. The entry hole for a 50kg UXB can be as small as 20cm in diameter. As such, the possibility that an item of UXO fell on site unnoticed and unrecorded cannot be confidently discounted. Equally, overall, it is not considered likely that any one area of the site would have been frequently accessed or specifically checked for evidence of German air-delivered ordnance, given its open, agricultural nature. It is therefore conceivable that UXBs could have gone unnoticed if they fell within the site boundary.
- In summary, given the various targets in the wider area, and the presence of RAF Upper Heyford to the west of the site, it has not been possible to entirely discount the risk of contamination from German aerial delivered ordnance within the bounds of the site. However, for the most part, the risk of contamination is not considered significantly elevated above the general 'background' level of risk for similar agricultural fields in the wider area. It has however been determined that the risk of contamination is likely to increase with closer proximity to the former airfield, which is known to have been attacked on a number of occasions. Although the site was not within the bounds of the airfield, the risk of contamination in the fields which immediately adjoin the airfield is assessed as elevated as a precaution. A risk map demonstrating this is presented in **Annex P1**.

Allied Risk:

- During WWII RAF Upper Heyford was used as an Operational Training Unit for Bomber Command which were involved in a number of bombing sorties over Germany. As such, bombs, fuses and ordnance of various types will have been stored within the bounds of the airfield in a dedicated bomb store area. This bomb store area has been identified on RAF site plans from 1942, presented within **Annex F1** and was located approximately 800m west of the site.
- After RAF Upper Heyford was leased to the USAF in 1950, the airfield underwent significant development and expansion. This included the construction of two additional bomb store areas; the northern bomb store and southern bomb store, presented on RAF site plans from 1994 within **Annex O**. The western section of the site was located approximately 180m from the northern bomb store area and immediately adjacent to the southern bomb store area.
- Information regarding the use of the bomb stores varies between sources, although as the airfield housed squadrons of Strategic Air Command (SAC) squadrons throughout the 1950's and 1960's, it is likely that one or both of these bomb stores were used to store nuclear weapons during this period, as well as a variety of conventional munitions throughout the USAF's tenure of the airfield.
- A geo-dataset held in-house indicated that the Middleton Stoney Camp was located approximately 250m – 1.2km west of the southern-most section of the site. Middleton Stoney and the surrounding area is known to have been occupied by the Lancashire Fusiliers, housing searchlight batteries and machine guns. The camp is also said to have been used to store equipment for Upper Heyford, included a firing range, stationed US Army troops prior to the D-Day landings and was used as a US military hospital.
- A press article from April 2019 reports that two 'unexploded bombs' were removed from Camp Road – within former RAF Heyford, to the west of the site. It is thought possible they these were practice bombs – possibly of the small 10/11lb variety. This would not be unexpected given the history of the airfield. Such items would usually be 'targeted' at a specific location within the bounds of an airfield. However, it was not unheard of for practice bombing to overshoot and affect the land surrounding an historic airfield.

UXO Risk Assessment

- Consulted record sets indicates that no LAA or HAA batteries are known to have been located within or bordering the bounds of the site; the closest recorded was an LAA battery situated approximately 350m west of the site. Although it is possible that mobile LAA batteries could have come to be temporarily located within the site.
- No specific evidence of training or firing ranges could be found within the site area, although anecdotal evidence indicates the presence of a firing range within the vicinity of Brown's at Park Farm, located approximately 1.1km west of the southern section of the site.
- In summary, whilst the site was located outside the demarcated bounds of the Upper Heyford airfield, and these allied features were not located directly within the bounds of the site, as a precaution, the fields immediately adjoining the airfield have been ascribed a higher level of risk than those further away. It is not unheard of for contamination to have occurred both within and immediately adjacent to airfield perimeters – through burial, burning, improper disposal, exercises etc. As with bombing risk, the risk of contamination from Allied items of ordnance is considered to 'drop-off' with distance from the airfield, and is considered to be 'Low' for the majority of the site (see Risk Map, **Annex P2**.

Post-war development:

- OS mapping indicates that the site area has been subject to very limited development in the post-war era. The site largely retains its open and undeveloped agricultural outlay. The only discernible development took place within the northern and eastern sections of the site during the late-1960's and early 1970's, in which a segment of the M40 motorway and associated slip roads were constructed.
- The risk of UXO remaining is considered to be mitigated at the location of and down to the depth of any post-war redevelopment on site. For example, the risk from deep buried UXO will only have been mitigated within the volumes of any post-war pile foundations or deep excavations for basement levels. The risk will however remain within virgin geology below and amongst these post-war works, down to the maximum bomb penetration depth.

Recommended Risk Mitigation Measures

The following risk mitigation measures are recommended to support the proposed works at RAF Heyford, Oxfordshire – see Risk Map, **Annex P**:

All Works

- UXO Risk Management Plan
- Site Specific UXO Awareness Briefings to all personnel conducting intrusive works.

Medium Risk Areas

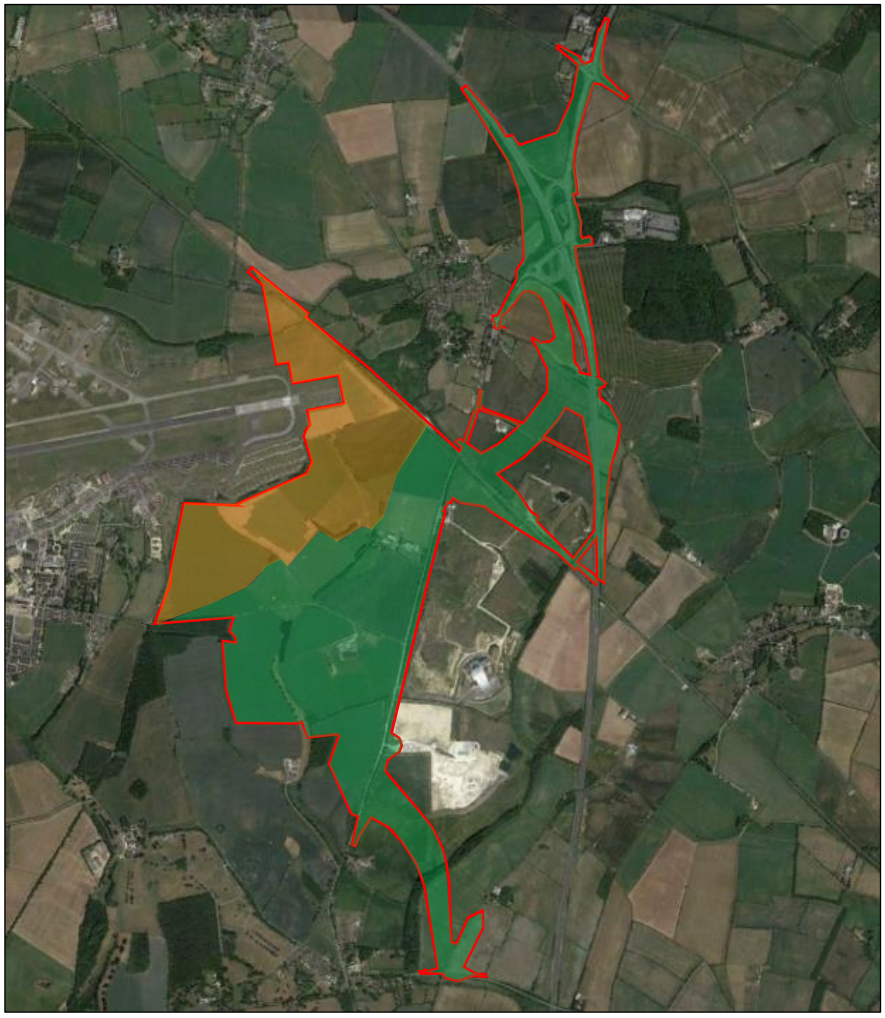
Open Intrusive Works (trial pits, service pits, open excavations, shallow foundations etc.)

- Non-intrusive UXO Magnetometer Survey. If this is not viable/appropriate:
- UXO Specialist On-site Support

Boreholes and Piled Foundations

- Intrusive Magnetometer Survey of all borehole and pile locations/clusters down to maximum bomb penetration depth.

German UXO and Allied UXO Risk Map



For indicative purposes – not to scale.
Please note that this assessed risk map may not take into account all post-war redevelopment/excavations on site.

Low Risk

Medium Risk

<u>1st Line Defence Risk Mitigation Services:</u>

All Areas of the Site:

- Site Specific Unexploded Ordnance Awareness Briefings – a service recommended to all personnel conducting intrusive works.
- UXO Risk Management Plan

Medium Risk Areas of the site:

- Non-Intrusive UXO Magnetometer Survey and Target Investigation (where appropriate.)
- Unexploded Ordnance Specialist - a service to support open intrusive works.
- Intrusive Magnetometer Survey – a service to support any borehole or pile locations/clusters down to an assessed maximum bomb penetration depth.

Glossary

Abbreviation	Definition
AA	Anti-Aircraft
AFS	Auxiliary Fire Service
AP	Anti-Personnel
ARP	Air Raid Precautions
DA	Delay-action
EOC	Explosive Ordnance Clearance
EOD	Explosive Ordnance Disposal
FP	Fire Pot
GM	G Mine (Parachute mine)
HAA	Heavy Anti-Aircraft
HE	High Explosive
IB	Incendiary Bomb
JSEODOC	Joint Services Explosive Ordnance Disposal Operation Centre
LAA	Light Anti-Aircraft
LCC	London County Council
LRRB	Long Range Rocket Bomb (V-2)
LSA	Land Service Ammunition
NFF	National Filling Factory
OB	Oil Bomb
PAC	Pilotless Aircraft (V-1)
PB	Phosphorous Bomb
PM	Parachute Mine
POW	Prisoner Of War
RAF	Royal Air Force
RCAF	Royal Canadian Air Force
RFC	Royal Flying Corps
RNAS	Royal Naval Air Service
ROF	Royal Ordnance Factory
SA	Small Arms
SAA	Small Arms Ammunition
SD2	Anti-personnel “Butterfly Bomb”
SIP	Self-Igniting Phosphorous
U/C	Unclassified bomb
UP	Unrotated Projectile (rocket)
USAAF	United States Army Air Force
UX	Unexploded
UXAA	Unexploded Anti-Aircraft
UXB	Unexploded Bomb
UXO	Unexploded Ordnance
V-1	Flying Bomb (Doodlebug)
V-2	Long Range Rocket
WAAF	Women’s Auxiliary Air Force
X	Exploded

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1st Line Defence Limited
Detailed Unexploded Ordnance (UXO) Risk Assessment

Site: RAF Heyford, Oxfordshire
Client: BWB Consulting Limited

1. Introduction

1.1. Background

1st Line Defence has been commissioned by BWB Consulting Limited to conduct a Detailed Unexploded Ordnance (UXO) Risk Assessment for the works proposed at RAF Heyford, Oxfordshire.

Buried UXO can present a significant risk to construction works and development projects. The discovery of a suspect device during works can cause considerable disruption to operations as well as cause unwanted delays and expense.

UXO in the UK can originate from three principal sources:

1. Munitions resulting from wartime activities including German bombing in WWI and WWII, long range shelling, and defensive activities.
2. Munitions deposited as a result of military training and exercises.
3. Munitions lost, burnt, buried or otherwise discarded either deliberately, accidentally, or ineffectively.

This report will assess the potential factors that may contribute to the risk of UXO contamination. If an elevated risk is identified at the site, this report will recommend appropriate mitigation measures, in order to reduce the risk to as low as is reasonably practicable. Detailed analysis and evidence will be provided to ensure an understanding of the basis for the assessed risk level and any recommendations.

This report complies with the guidelines outlined in *CIRIA C681*, 'Unexploded Ordnance (UXO) A Guide for the Construction Industry.'

2. Method Statement

2.1. Report Objectives

The aim of this report is to conduct a comprehensive assessment of the potential risk from UXO at RAF Heyford, Oxfordshire. The report will also recommend appropriate site and work-specific risk mitigation measures to reduce the risk from explosive ordnance during the envisaged works to a level that is as low as reasonably practicable.

2.2. Risk Assessment Process

1st Line Defence has undertaken a five-step process for assessing the risk of UXO contamination:

1. The likelihood that the site was contaminated with UXO.
2. The likelihood that UXO remains on the site.
3. The likelihood that UXO may be encountered during the proposed works.
4. The likelihood that UXO may be initiated.
5. The consequences of initiating or encountering UXO.

In order to address the above, 1st Line Defence has taken into consideration the following factors:

- Evidence of WWI and WWII German aerial delivered bombing as well as the legacy of Allied occupation.
- The nature and conditions of the site during WWII.
- The extent of post-war development and UXO clearance operations on site.
- The scope and nature of the proposed works and the maximum assessed bomb penetration depth.
- The nature of ordnance that may have contaminated the proposed site area.

2.3. Sources of Information

Every reasonable effort has been made to ensure that relevant evidence has been consulted and presented in order to produce a thorough and comprehensible report for the client. To achieve this the following, which includes military records and archive material held in the public domain, have been accessed:

- The National Archives and Oxfordshire History Centre.
- Historical mapping datasets.
- Historic England National Monuments Record.
- Relevant information supplied by BWB Consulting Limited.
- Available material from 33 Engineer Regiment (EOD) Archive (part of 29 Explosive Ordnance Disposal and Search Group).
- 1st Line Defence's extensive historical archives, library and UXO geo-datasets.
- Open sources such as published books and internet resources.

3. Background to Bombing Records

3.1. General Considerations of Historical Research

This desktop assessment is based largely upon analysis of historical evidence. Every reasonable effort has been made to locate and present significant and pertinent information. 1st Line Defence cannot be held accountable for any changes to the assessed risk level or risk mitigation measures, based on documentation or other data that may come to light at a later date, or which was not available to 1st Line Defence during the production of this report.

It is often problematic and sometimes impossible to verify the completeness and accuracy of WWII-era records. As a consequence, conclusions as to the exact location and nature of a UXO risk can rarely be quantified and are, to a degree, subjective. To counter this, a range of sources have been consulted, presented and analysed. The same methodology is applied to each report during the risk assessment process. 1st Line Defence cannot be held responsible for any inaccuracies or the incompleteness in available historical information.

3.2. German Bombing Records

During WWII, bombing records were generally gathered locally by the police, Air Raid Precaution (ARP) wardens and military personnel. These records typically contained information such as the date, the location, the amount of damage caused and the types of bombs that had fallen during an air raid. This information was made either through direct observation or post-raid surveys. The Ministry of Home Security Bomb Census Organisation would then receive this information, which was plotted onto maps, charts, and tracing sheets by regional technical officers. The collective record set (regional bomb census mapping and locally gathered incidents records) would then be processed and summarised into reports by the Ministry of Home Security Research and Experiments Branch. The latter were tasked with providing the government 'a complete picture of air raid patterns, types of weapons used and damage caused- in particular to strategic services and installations such as railways, shipyards, factories and public utilities.'[1]

The quality, detail and nature of record keeping could vary considerably between provincial towns, boroughs and cities. No two areas identically collated or recorded data. While some local authorities maintained records with a methodical approach, sources in certain areas can be considerably more vague, dispersed, and narrower in scope. In addition, the immediate priority was mostly focused on assisting casualties and minimising damage at the time. As a result, some records can be incomplete and contradictory. Furthermore, many records were even damaged or destroyed in subsequent air raids. Records of raids that took place on sparsely or uninhabited areas were often based upon third party or hearsay information and are therefore not always reliable. Whereas records of attacks on military or strategic targets were often maintained separately and have not always survived.

3.3. Allied Records

During WWII, considerable areas of land were requisitioned by the War Office for the purpose of defence, training, munitions production and the construction of airfields. Records relating to military features vary and some may remain censored. Within urban environments datasets will be consulted detailing the location of munition production as well as wartime air and land defences. In rural locations it may be possible to obtain plans of military establishments, such as airfields, as well as training logs, record books, plans and personal memoirs. As with bombing records, every reasonable effort will be made to access records of, and ascertain any evidence of, military land use. However, there are occasions where such evidence is not available, as records may not be accessible, have been lost/destroyed, or simply were not kept in the first place.

[1] http://www.nationalarchives.gov.uk/help-with-your-research/research-guides/bomb-census-survey-records-1940-1945/.

4. UK Regulatory Environment and Guidelines

4.1. General

There is no formal obligation requiring a UXO risk assessment to be undertaken for construction projects in the UK, nor is there any specific legislation stipulating the management or mitigation of UXO risk. However, it is implicit in the legislation outlined below that those responsible for intrusive works (archaeology, site investigation, drilling, piling, excavation etc.) should undertake a comprehensive and robust assessment of the potential risks to employees and that mitigation measures are implemented to address any identified hazards.

4.2. CDM Regulations 2015

The Construction (Design and Management) Regulations 2015 (CDM 2015) define the responsibilities of parties involved in the construction of temporary or permanent structures.

The CDM 2015 establishes a duty of care extending from clients, principle co-ordinators, designers, and contractors to those working on, or affected by, a project. Those responsible for construction projects may therefore be accountable for the personal or proprietary loss of third parties, if correct health and safety procedure has not been applied.

Although the CDM does not specifically reference UXO, the risk presented by such items is both within the scope and purpose of the legislation. It is therefore implied that there is an obligation for parties to:

- Provide an appropriate assessment of potential UXO risks at the site (or ensure such an assessment is completed by others).
- Put in place appropriate risk mitigation measures if necessary.
- Supply all parties with information relevant to the risks presented by the project.
- Ensure the preparation of a suitably robust emergency response plan.

4.3. The 1974 Health and Safety at Work etc. Act

All employers have a responsibility under the Health and Safety at Work etc. Act 1974 and the Management of Health and Safety at Work Regulations 1999, to ensure the health and safety of their employees and third parties, so far as is reasonably practicable and conduct suitable and sufficient risk assessments.

4.4. CIRIA C681

In 2009, the Construction Industry Research and Information Association (CIRIA) produced a guide to the risk posed by UXO to the UK construction industry (CIRIA C681). CIRIA is a neutral, independent and not-for-profit body, linking organisations with common interests and facilitating a range of collaborative activities that help improve the industry.

The publication provides the UK construction industry with a defined process for the management of risks associated with UXO from WWI and WWII aerial bombardment. It is also broadly applicable to the risks from other forms of UXO that might be encountered. It focuses on construction professionals' needs, particularly if there is a suspected item of UXO on site, and covers issues such as what to expect from a UXO specialist. The guidance also helps clients to fulfil their legal duty under CDM 2015 to provide designers and contractors with project specific health and safety information needed to identify hazards and risks associated with the design and construction work. This report conforms to this CIRIA guidance and to the various recommendations for good practice referenced therein. It is recommended that this document is acquired and studied where possible to allow a better understanding of the background to both the risk assessment process and the UXO issue in the UK in general.

4.5. Additional Legislation

In the event of a casualty resulting from the failure of an employer/client to address the risks relating to UXO, the organisation may be criminally liable under the Corporate Manslaughter and Corporate Homicide Act 2007.

5. The Role of Commercial UXO Contractors and The Authorities

5.1. Commercial UXO Specialists

The role of a UXO Specialist (often referred to as UXO Consultant or UXO Contractor) such as 1st Line Defence, is defined in CIRIA C681 as the provision of expert knowledge and guidance to the client on the most appropriate and cost-effective approach to UXO risk management at a site.

The principal role of UXO Specialists is to provide the client with an appropriate assessment of the risk posed by UXO for a specific project, and identify and carry out suitable methodology for the mitigation of any identified risks to reduce them to an acceptable level.

The requirement for a UXO Specialist should ideally be identified in the initial stages of a project, and it is recommended that this occur prior to the start of any detailed design. This will enable the client to budget for expenditure that may be required to address the risks from UXO, and may enable the project team to identify appropriate techniques to eliminate or reduce potential risks through considered design, without the need for UXO specific mitigation measures. The UXO Specialist should have suitable qualifications, levels of competency and insurances.

Please note 1st Line Defence has the capability to provide a complete range of required UXO risk mitigation services, in order to reduce a risk to as low as reasonably practicable. This can involve the provision of both ground investigation, and where appropriate, UXO clearance services.

5.2. The Authorities

The police have a responsibility to co-ordinate the emergency services in the event of an ordnance-related incident at a construction site. Upon inspection they may impose a safety cordon, order an evacuation, and call the military authorities Joint Services Explosive Ordnance Disposal Operation Centre (JSEODOC) to arrange for investigation and/or disposal. Within the Metropolitan Police Operational Area, SO15 EOD will be tasked to any discovery of suspected UXO. The request for Explosive Officer (Expo) support is well understood and practiced by all Metropolitan Boroughs. The requirement for any additional assets will then be coordinated by the Expo if required.

In the absence of a UXO specialist, police officers will usually employ such precautionary safety measures, thereby causing works to cease, and possibly requiring the evacuation of neighbouring businesses and properties.

The priority given to the police request will depend on the EOD teams' judgement of the nature of the UXO risk, the location, people and assets at risk, as well as the availability of resources. The speed of response varies; authorities may respond immediately or in some cases it may take several days for the item of ordnance to be dealt with. Depending on the on-site risk assessment the item of ordnance may be removed from the site and/or destroyed by a controlled explosion.

Following the removal of an item of UXO, the military authorities will only undertake further investigations or clearances in high-risk situations. If there are regular UXO finds on a site the JSEODOC may not treat each occurrence as an emergency and will recommend the construction company puts in place alternative procedures, such as the appointment of a commercial contractor to manage the situation.

6. The Site

6.1. Site Location

The site is located approximately 4km west to 7.5km north-west of Bicester town centre and approximately 17.5km north of Oxford city centre. The villages of Ardley and Fewcott are located between the northern and western sections of the site, whilst the village of Middleton Stoney is located to the south-west of the site.

The site is bound to the north, east and south by large areas of areas of undeveloped agricultural land, farm access tracks, as well as several minor and some major roadways, including *Ardley Road*, *B4100*, B430, *A43*, *M4*0, to the west by the runway and structures of the former RAF/USAF Upper Heyford aerodrome, areas of agricultural land, woodland, several roadways including *Camp Road*, *Chilgrove Drive*, *Somerton Road*, and a section of the *Chiltern Railway line*.

The site is approximately centred on the OS grid reference: **SP 53884 26661**.

Site location maps are presented in **Annex A**.

6.2. Site Description

Recent aerial imagery dated May 2020 indicates that the site predominantly comprises large areas of undeveloped land, interspersed with areas of vegetation, farm access tracks, a section of the *Chiltern Railway line,* and several sections of roadway throughout; including the Ardley Road, *M40 motorway*, *A43 and B430.*

A recent aerial photograph and site plan are presented in **Annex B** and **Annex C** respectively.

7. Scope of the Proposed Works

7.1. General

Information provided by BWB Consulting Limited indicates that the nature of the proposed works will include the construction of a rail freight interchange and large distribution facilities which will include extensive earthworks, building sheds and new roads. Ground investigation work will include 120 exploratory holes across the site, consisting of trial pits, shallow dynamic samples holes and deeper rotary boreholes.

8. Ground Conditions

8.1. General Geology

The British Geological Survey (BGS) map shows the site to be predominantly underlain by White Limestone Formation - Limestone, with no recorded superficial deposits. The site is also interspersed with smaller areas of Rutland Formation – Mudstone, with superficial deposits of Head - Clay, Silt, Sand and Gravel in the north-west section of the site, and areas of Forest Marble Formation – Limestone, with superficial deposits of Alluvium - Clay, Silt, Sand and Gravel throughout the southern and western sections of the site. The entire site area is underlain by Sedimentary Bedrock formed during the Jurassic Period.

8.2. Site Specific Geology

Site-specific geotechnical data was not provided by the client during the production of this report.

9. Site History

9.1. Introduction

The purpose of this section is to identify the composition of the site pre and post-WWII. It is important to establish the historical use of the site, as this may indicate the site's relation to potential sources of UXO as well as help with determining factors such as the land use, groundcover, likely frequency of access and signs of bomb damage.

9.2. Summary of the Historical Background of the Site

The site was located adjacent to the WWI and WWII-era airfield RAF Upper Heyford which was predominantly used as a training station throughout this period in order to develop the skills of novice aircrews. Upper Heyford was also used to develop and familiarise pilots with new avionics such as long-range navigational equipment.

With the advent of WWII the airfield, RAF Bomber Command squadrons were stationed there and subsequently posted to the continent upon the outbreak of hostilities. Following the retreat from Dunkirk in June 1940, a number of Operational Training Unit (OTU) squadrons were established across the county, and 16 OTU took up residence of Upper Heyford. Equipped with Handley-Page Hampden, Avro Anson and later Wellington bombers, the unit was tasked with training air crews before they were assigned to active Bomber Command units. However, 16 OTU regularly took part in bombing missions over occupied Europe.

In the post-WWII era, the base was leased to the USAF, which used Upper Heyford and other bases in Western England as bases for Strategic Air Command (SAC) until the mid-1960's. SAC was a quick reaction force designated to undertake a retaliatory or pre-emptive nuclear strike against the USSR and Eastern Bloc countries in the event of a nuclear war. In the latter stages of the cold war, the nuclear deterrent role was superseded by Intercontinental Ballistic Missiles (ICBM) launched from static silos and Polaris missiles launched from submarines. As such, the need for an aerial delivered nuclear bomb was diminished and the 20th Tactical Fighter Wing (TFW) took up primary residence of Upper Heyford, which remained until the base closed in 1994. See **Annex D** for details and imagery of the airfield.

9.3. Ordnance Survey Historical Maps

Relevant historical maps were obtained for this report and are presented in **Annex E.** See below for a summary of the site history shown on acquired mapping.

Pre-WWII		
Date	**Scale**	**Description**
1923	1:10,560	This pre-WWII OS mapping edition dated 1923 indicates that the site area predominantly occupies open areas of undeveloped land, as well as numerous roadways. A section of the Great Western Railways can be seen to bisect the north-eastern and south-western sections of the site. The site is shown to be void of structural development however, some small unidentified structures can be seen within the southern area of the site. Several villages can be seen in the surrounding area, Fewcott and Ardley are shown to occupy an area between the north-western section and north-eastern sections of the site, Bucknell to the south-east, Middleton Stoney to the south and south-west, Fritwell to the north and north-west.

Post-WWII		
Date	**Scale**	**Description**
1955	1:10,560	No major discernible changes have occurred within the bounds of the site. One structure previously adjacent to the northern most section of the site is no longer depicted. Some mapping changes have occurred within previously agricultural fields to the west of the site.
1979 – 1993	1:10,560	No major discernible changes have occurred within the bounds of the site. The runway, hardstanding taxiways, aircraft hardstandings and perimeter fence of the *Upper Heyford Airfield* can be seen immediately adjacent to the western section of the site.

9.4. WWII-era RAF Site Plans

WWII-era RAF site plans of RAF Upper Heyford have been obtained from the RAF Museum at Hendon and Airfield Focus: Upper Heyford. This imagery provides a view of the airfield in 1942 and 1945. (see **Annex F**). See below for a description:

Title of Photograph	Comments
Upper Heyford, 1942 (Airfield Focus)	This RAF plan of the site dated 1942 shows the site to comprise a large, mostly unpaved landing ground, surrounded by a hardstanding taxiways. The airfield is shown to comprise 33 aircraft dispersal pans, four of which are shown to be situated outside the bounds of the airfield perimeter fence to the north. Several features are marked on the site plans including the *Flying Control* (tower), *Machine Gun Range*, *Bulk Fuel tanks* and *Bomb dump*. Six hangers and several unidentified structures are also shown to be within the south-eastern section of the airfield. The western most section of the site is shown to be located immediately adjacent to five aircraft dispersal pans and the eastern-most segment of the airfield perimeter fence.
Upper Heyford, June 1945 (RAF Hendon)	This RAF plan of the site date June 1945 indicates that the airfield has been subject to considerable development. An 'A-Frame' consisting of three tarmac airstrips can now be seen to occupy the majority of the airfield, surrounded on all sides by hardstanding taxiways and aircraft dispersal pans. The airfield perimeter has also been expanded to the north and north-east. The western most section of the site is shown to be located immediately adjacent to five aircraft dispersal pans, four 'Gun Pit Huts', the eastern-most segment of the airfield perimeter fence as well as the gymnasium and chapel.

10. Introduction to German Aerial Delivered Ordnance

10.1. General

During WWI and WWII, the UK was subjected to bombing which often resulted in extensive damage to city centres, docks, rail infrastructure and industrial areas. The poor accuracy of WWII targeting technology and the nature of bombing techniques often resulted in neighbouring areas to targets sustaining collateral damage.

In addition to raids which concentrated on specific targets, indiscriminate bombing of large areas also took place. This occurred most prominently in the London 'Blitz', though affected many other towns and cities. As discussed in the following sections, a proportion of the bombs dropped on the UK did not detonate as designed. Although extensive efforts were made to locate and deal with these UXBs at the time, many still remain buried and can present a potential risk to construction projects.

The main focus of research for this section of the report will concern German aerial delivered ordnance dropped during WWII, although WWI bombing will also be considered.

10.2. Generic Types of WWII German Aerial Delivered Ordnance

To provide an informed assessment of the hazards posed by any items of unexploded ordnance that may remain in situ on site, the table below provides information on the types of German aerial delivered ordnance most commonly used by the Luftwaffe during WWII. Images and brief summaries of the characteristics of these items of ordnance are listed in **Appendices i-iii**.

Generic Types of WWII German Aerial Delivered Ordnance		
Type	**Frequency**	**Likelihood of detection**
High Explosive (HE) bombs	In terms of weight of ordnance dropped, HE bombs were the most frequently deployed by the Luftwaffe during WWII.	Although efforts were made to identify the presence of unexploded ordnance following an air raid, often the damage and destruction caused by detonated bombs made observation of UXB entry holes impossible. The entry hole of an unexploded bomb can be as little as 20cm in diameter and was easily overlooked in certain ground conditions (see **Annex G**). Furthermore, ARP documents describe the danger of assuming that damage, actually caused by a large UXB, was due to an exploded smaller bomb. UXBs therefore present the greatest risk to present–day intrusive works.
1kg Incendiary bombs (IB)	In terms of the number of weapons dropped, small IBs were the most numerous. Millions of these were dropped throughout WWII.	IBs had very limited penetration capability and in urban areas would often have been located in post-raid surveys. If they failed to initiate and fell in water, on soft vegetated ground, or bombed rubble, they could easily go unnoticed.
Large Incendiary bombs (IB)	These were not as common as the 1kg IBs, although they were more frequently deployed than PMs and AP bomblets.	If large IBs did penetrate the ground, complete combustion did not always occur and in such cases they could remain a risk to intrusive works.
Aerial or Parachute mines (PM)	These were deployed less frequently than HE and IBs due to size, cost and the difficulty of deployment.	If functioning correctly, PMs would generally have had a slow rate of descent and were very unlikely to have penetrated the ground. Where the parachute failed, mines would have simply shattered on impact if the main charge failed to explode. There have been extreme cases when these items have been found unexploded. However, in these scenarios, the ground was either extremely soft or the munition fell into water.
Anti-personnel (AP) bomblets	These were not commonly used and are generally considered to pose a low risk to most works in the UK.	SD2 bomblets were packed into containers holding between 6 and 108 submunitions. They had little ground penetration ability and should have been located by the post-raid survey unless they fell into water, dense vegetation or bomb rubble.

10.3. Failure Rate of German Aerial Delivered Ordnance

It has been estimated that 10% of WWII German aerial delivered HE bombs failed to explode as designed. Reasons for why such weapons might have failed to function as designed include:

- Malfunction of the fuze or gain mechanism (manufacturing fault, sabotage by forced labour or faulty installation).
- Many were fitted with a clockwork mechanism that could become immobilised on impact.
- Failure of the bomber aircraft to arm the bombs due to human error or an equipment defect.
- Jettisoning the bomb before it was armed or from a very low altitude. This most likely occurred if the bomber aircraft was under attack or crashing.

From 1940 to 1945, bomb disposal teams reportedly dealt with a total of 50,000 explosive items of 50kg, over 7,000 anti-aircraft projectiles and 300,000 beach mines. Unexploded ordnance is still regularly encountered across the UK, see press articles in **Annex H**.

10.4. UXB Ground Penetration

An important consideration when assessing the risk from a UXB is the likely maximum depth of burial. There are several factors which determine the depth that an unexploded bomb will penetrate:

- Mass and shape of bomb.
- Height of release.
- Velocity and angle of bomb.
- Nature of the ground cover.
- Underlying geology.

Geology is perhaps the most important variable. If the ground is soft, there is a greater potential of deeper penetration. For example, peat and alluvium are easier to penetrate than gravel and sand, whereas layers of hard strata will significantly retard and may stop the trajectory of a UXB.

10.4.1. The J-Curve Effect Principle

J-curve is the term used to describe the characteristic curve commonly followed by an aerial delivered bomb dropped from height after it penetrates the ground. Typically, as the bomb is slowed by its passage through underlying soils, its trajectory curves towards the surface. Many UXBs are found with their nose cone pointing upwards as a result of this effect. More importantly, however, is the resulting horizontal offset from the point of entry. This is typically a distance of about one third of the bomb's penetration depth, but can be higher in certain conditions (see **Annex G**).

10.4.2. WWII UXB Ground Penetration Studies

During WWII the Ministry of Home Security undertook a major study on actual bomb penetration depths, carrying out statistical analysis on the measured depths of 1,328 bombs as reported by bomb disposal (BD) teams. Conclusions were drawn predicting the likely average and maximum depths of penetration of different sized bombs in different geological strata.

For example, the largest common German bomb (500kg) had a likely concluded penetration depth of 6m in sand or gravel but 11m in clay. The maximum observed depth for a 500kg bomb was 11.4m and for a 1,000kg bomb 12.8m. Theoretical calculations suggested that significantly greater penetration depths were probable.

10.4.3. Site Specific Bomb Penetration Considerations

When considering an assessment of the bomb penetration at the site of proposed works the following parameters have been used:

- WWII geology – White Limestone Formation – Limestone, smaller areas of Rutland Formation – Mudstone, areas of Forest Marble Formation – Limestone. Sedimentary bedrock. Superficial deposits include Head - Clay, Silt, Sand and Gravel and Alluvium – Clay, Silt, Sand and Gravel.
- Impact angle and velocity – 10-15° from vertical and 270 metres per second.
- Bomb mass and configuration – The 500kg SC HE bomb, without retarder units or armour piercing nose (this was the largest of the common bombs used against Britain).

It has not been possible to determine maximum bomb penetration capabilities at this stage due to the lack of site-specific geotechnical information provided for the purpose of this report. An assessment can be made once further information becomes available or by an UXO Specialist on-site.

10.5. V-Weapons

Hitler's 'V-weapon' campaign began from mid-1944. It used newly developed unmanned cruise missiles and rockets. The V-1, known as the *flying bomb* or *pilotless aircraft*, and the V-2, a long range rocket, were launched from bases in Germany and occupied Europe. A total of 9,251 V-1s and 1,115 V-2s were recorded in the United Kingdom.

Although these weapons caused considerable damage, their range was limited by their position of deployment across Europe and as a result the vast majority of V-weapon strikes were directed against targets in the south-east of England, predominantly in the London Boroughs and Home Counties. This limitation of capability meant targets within the Rural District of Ploughly were generally too far to be considered for V-weapon strikes by the Luftwaffe.

The risk from V-weapons is therefore considered negligible and will not be further addressed in this report.

11. The Likelihood of Contamination from German Aerial Delivered UXBs

11.1. World War I

During WWI Britain was targeted and bombed by Zeppelin Airships as well as Gotha and Giant fixed-wing aircraft. The objective of these raids was to unnerve the British public, to destroy strategic targets and to ultimately attempt to coerce Britain's capitulation from the war. A WWI map of air raids and naval bombardments across the UK was consulted, see **Annex I**. This source does not record any WWI bombing incidents to have affected the site area or the town of Bicester.

WWI bombs were generally smaller and dropped from a lower altitude than those used in WWII. This resulted in limited UXB penetration depths. Aerial bombing was often such a novelty at the time that it attracted public interest and even spectators to watch the raids in progress. For these reasons there is a limited risk that UXBs passed undiscovered in the urban environment. When combined with the relative infrequency of attacks and an overall low bombing density, the risk from WWI UXBs is considered low and will not be further addressed in this report.

11.2. World War II Bombing of the Rural District of Ploughly

The Luftwaffe's main objective for the attacks on Britain was to inhibit the country's economic and military capability. To achieve this they targeted airfields, depots, docks, warehouses, wharves, railway lines, factories, and power stations. As the war progressed the Luftwaffe bombing campaign expanded to include the indiscriminate bombing of civilian areas in an attempt to subvert public morale.

During WWII the site was located within the Rural District of Ploughly, which sustained an overall very low density of bombing, as represented by bomb density data figures presented in **Section 11.3.** This was mainly due to the composition of the area in which the site was located; within a large rural area, away from the main industrial targets and residential areas. As such, the Rural District of Ploughly did not offer the same number of strategic targets as other more densely populated areas of Britain. Despite this, the Oxfordshire are was subject to numerous Luftwaffe bombing raids owing to the large number of airfields situated within the county.

RAF Upper Heyford, which was located adjacent to the west of the site, was operational during WWI, the inter-war period and WWII. Prior to the outbreak of WWII, German intelligence had identified the RAF as one of the greatest obstacles to an invasion of Britain, and so plans were made to cripple the RAF by means of cratering runways, destroying aircraft and airfield facilities. As RAF Upper Heyford, was occupied by units of RAF Bomber Command at the outbreak of hostilities, the airfield presented a key strategic Luftwaffe bombing target that was subject specific raids on several occasions.

Other RAF aerodromes and satellite airfields were also situated within the wider vicinity; notably RAF Croughton, RAF Weston-on-the-green and RAF Bicester located approximately 2.2km north-east 2.6km south and 3.8km south-east of the site respectively.

Records of bombing incidents in the civilian areas of the Rural District of Ploughly were typically collected by Air Raid Precautions wardens and collated by Civil Defence personnel. Some other organisations, such as port and railway authorities, maintained separate records. Records would be in the form of typed or hand written incident notes, maps and statistics. Bombing data was carefully analysed, not only due to the requirement to identify those parts of the country most needing assistance, but also in an attempt to find patterns in the Germans' bombing strategy in order to predict where future raids might take place.

Records of bombing incidents are presented in the following sections.

11.3. WWII Home Office Bombing Statistics

The following table summarises the quantity of German aerial delivered bombs (excluding 1kg incendiaries and anti-personnel bombs) dropped on the Rural District of Ploughly between 1940 and 1945.

Record of German Ordnance Dropped on the Rural District of Ploughly		
Area Acreage		**79,910**
Weapons	High Explosive bombs (all types)	275
	Parachute mines	0
	Oil bombs	3
	Phosphorus bombs	0
	Fire pots	0
	Pilotless aircraft (V-1)	0
	Long range rocket bombs (V-2)	0
Total		**278**
Number of Items per 1,000 acres		**3.5**

Source: Home Office Statistics
This table does not include UXO found during or after WWII.

Detailed records of the quantity and locations of the 1kg incendiary and anti-personnel bombs were not routinely maintained by the authorities as they were frequently too numerous to record. Although the risk relating to IBs is lesser than that relating to larger HE bombs, they were similarly designed to inflict damage and injury. Anti-personnel bombs were used in much smaller quantities and are rarely found today but are potentially more dangerous. Although Home Office statistics did not record these types of ordnance, both should not be overlooked when assessing the general risk to personnel and equipment.

11.4. Oxfordshire Bomb Map

A local bomb map compiled by the Centre for Oxfordshire Studies showing HE bomb, incendiary bomb and aerial delivered strikes on the county was obtained from Oxfordshire County Council.

The section showing the area of the site is described in the table below and presented in **Annex J**. Although it should be noted that this bomb map only records the date, number and types of bombs that fell within the vicinity of a civil parish, and does not plot the exact locations of each strike.

Oxfordshire Bomb Map	
Date Range	**Comments**
26th June 1940 – 1945	27 HE bomb strikes and two HE UXB strikes were recorded within the vicinity of Upper Heyford. 16 HE bomb strikes and one HE UXB strike was recorded within the vicinity of Fritwell. One HE bomb strike and several Incendiary bomb strikes were recorded within the vicinity of Stoke Lyne. Three HE bomb strikes and one HE UXB was recorded within the vicinity of Bigwell Park.
27th July 1940	Fritwell. 14 HE bomb strikes and one HE UXB strike.
26th – 27th August 1940	Bignell Park. Three HE bomb strikes and one HE UXB strike.
21st October 1940	Upper Heyford. 10 HE bomb strikes.
13th November 1940	Upper Heyford. Two HE bomb strikes.
15th – 16th November 1940	Stoke Lyne. One HE bomb strike.
16th – 17th November 1940	Fritwell. Two HE bomb strikes.
20th – 21st November 1940	Upper Heyford. 13 HE bomb strikes.
27th March 1941	Upper Heyford. Two HE bomb strikes and two HE UXB strikes.
10th – 11th April 1941	Stoke Lyne. Several Incendiary bomb strikes.

11.5. Oxfordshire ARP Logbook

Written bomb incident records for the county of Oxfordshire were obtained from Oxfordshire History Centre. This record was compiled by local Air Raid Precaution (ARP) personnel and volunteers during the war and records the location, date and time of bombing raids, as well as the types of bomb used and the damage caused.

A transcript of the associated written records of bomb incidents in the site locality are presented in the table below. Only those recorded incidents on or in close proximity to the site have been highlighted. An example of this record is presented in **Annex K**.

Oxfordshire ARP Logbook		
Date	**Type of bomb**	**Comments**
26th June 1940	Unknown Number of HE	Bombs dropped in the vicinity of the emergency landing ground at Weston-on-the-Green. Ground lights were reported to have been in evidence during the raid. The majority of bombs dropped were of small calibre.
9th August 1940	16 x HE	5 bombs dropped on aerodrome emergency landing ground and 11 in a straight line between Weston-on-the-Green and Chesterton. All bombs were of small calibre forming small craters. Explosions were heard at a considerable distance. Bicester A.R.P. personnel mobilised on hearing bombs dropped.
25th/26th August 1940	5 x HE	Weston-on-the-Green (5 H.E.) According to Mr Stenning, it is estimated that a large number (100) of Incendiary Bombs were dropped over the Bicester Area, but the correct number cannot be ascertained. A great number of these Incendiary Bombs were dropped in the Weston-on-the-Green district. Whilst they were still flaring on the ground another plane dropped H.E. Bombs amongst them.
26th/27th August 1940	10 x HE	At Weston-on-the-Green the bombs dropped in a field, the target in this instance presumably being the Weston-on-the-green R.A.F. landing ground. The bombs dropped at Chesterton also fell in a field.
29th/30th August 1940	5 x HE	4 HE bombs at Weston-on-the-Green landing ground and 1 HE bomb in a field.
4th/5th September 1940	Unknown Number of UXB's	East side of Weston-on-the-Green landing ground as these bombs fell on R.A.F. property they were exploded by them.
3rd/4th October 1940	3 x HE 1 x HE DAB 100 I.B.	3 HE were dropped on the right hand side of Akemen Street in Kirklingotn Parish, two exploded on impact, the other being a (DAB) which exploded at 7:45am on 4th October 1940. The fourth HE fell on the left hand side of Akeman Street in Weston-on-the-Green Parish, and exploded on impact. All bombs fell on open ground. The 100 I.B. fell between Weston Village and Weston Park Farm, and hedge fires were quickly extinguished.
21st October 1940	**10 x HE**	**Heyford Aerodrome. 8 HE were dropped on the flying ground and 2 in a field adjoining. The line of bombs was from north to south.**

6th/7th November 1940	11 HE	Islip and Lower Heyford. These bombs dropped in a direct line between Islip and Lower Heyford in ploughed and grass fields. One of these was a camouflet.
13th November 1940	**Unknown Number of Bombs**	**Heyford. These bombs were dropped on the R.A.F. Station, Upper Heyford, near the bomb dump. Flying debris caused slight damage to two Hampden Bombers and a concrete mixer.**
16th/17th November 1940	2 x HE	Fritwell. 1 HE fell in an allotment between Fritwell Course and Fritwell Cross Roads, the other 300 yards north-east of Fritwell School. 3 plate glass windows of Mr. Dew's shop were smashed and windows in Fritwell School.
20th/21st November 1940	**12 x HE** **1 x HE DAB** **Large Number of I.B.s**	**Upper Heyford. These bombs were dropped in two lines running from north to south, separated by about half a mile of open country. The last bomb made a direct hit on a house, but the occupant had a miraculous escape, crawling from under debris uninjured. Three of the I.B.s fell on the thatched roof of a barn setting fire to the thatch, but this was soon extinguished by local people. The DAB later exploded.** **Cottage demolished and next door cottage badly cracked.**
27th February 1941	**2 x HE** **2 x HE UXB**	**Heyford, These bombs fell on the R.A.F. landing ground at Upper Heyford, one causing a crater 15' wide and the other causing gorund eruption. The 2 UXB's were also dropped at the same time.** **Considerable number of windows broken in Aerodrome buildings.** **Wellington aircraft destroyed.**
23rd/24th May 1941	4 x HE	These four bombs were dropped on the R.A.F. landing ground half-a-mile east of Brackley-Oxford Main road.

11.6. Online/Anecdotal References to the Bombing of RAF Upper Heyford

Anecdotal references referring to the Bristol Whitchurch Airport and Luftwaffe bombing raids in the vicinity of the site and RAF Upper Heyford were obtained from a variety of online sources including official documentation, first hand anecdotal accounts from people who worked at the airport and locals who lived in the surrounding environs. Some examples of the references relating to the vicinity are transcribed below and those believed to be located in proximity to the site are highlighted in boldface.

Online/Anecdotal References to the Bombing of RAF Upper Heyford	
Extracts from Bicester Local History Society[2]	
Date Range	**Comments**
13th October 1940	"Although few bombs fell on the area, Weston-on-the-Green airfield became the most heavily bombed location in Oxfordshire as a number of German aircraft dropped their deadly cargo on the airfield when returning from raids on other targets. Bicester airfield was attacked by an enemy aircraft on 13th October 1940. Anti-aircraft defences damaged the attacking aircraft which eventually crashed in the south of the county." Weston-on-the-Green was located approximately 2.5km south of the site.
14th November 1940	"Local residents living in the town at the time still recall the vivid memory of the drone of enemy bombers flying towards Coventry on 14 November 1940."

[2] *https://www.blhs.org.uk/index.php/head_military/world-war-ii*

11.7. Published Literature Referring to the Bombing of RAF Upper Heyford

Published literature referring to the Bristol Whitchurch Airport and Luftwaffe bombing raids in the vicinity of the site and RAF Upper Heyford were obtained. These include compiled information from official accounts and records, as well as first-hand anecdotal accounts from people who worked at the Bristol Whitchurch Airport. Some examples of the references relating to the site are transcribed below.

Published Literature Referring to the Bombing of RAF Upper Heyford	
Extracts from Airfield Focus: Upper Heyford[3]	
Date Range	**Comments**
25th August 1940	"11 bombs on 'Q' decoy site Otmoor." 'Q' decoy site in Otmoor was located approximately 10km south of the site.
13th November 1940	**"Two bombs on Upper Heyford."** **"Damaged a Hampden and blew open a steel door on a bomb store."** **Located immediately west of the site or up to approximately 2km west of the site.**
20th November 1940	**"Some bombs fell near the airfield boundary."** **Located immediately on site or up to approximately 2km west of the site.**
27th February 1941	**"Four bombs dropped by JU88, two of which did not explode damaging five aircraft and injuring two airmen."** **Located immediately west of the site or up to approximately 2km west of the site.**

[3] *Davis, P., Airfield Focus: Upper Heyford., GMS Enterprises., 2001*

11.8. Post-WWII Era Aerial Photography

Post-WWII era aerial photography for the site area was obtained from the National Monuments Record Office (Historic England). This photography provides a record of the potential composition of the site during the war, as well as its condition immediately following the war. (**See Annex M & N**).

WWII-Era Aerial Photography	
Date	**Description**
16th April 1947 (Historic England)	This post-WWII era aerial image date 1947 gives a good account of the RAF Upper Heyford airfield in the immediate post-war era. Presenting the composition and structural outlay of the airfield as it would have been during the latter stages of WWII. Six hangers, an aircraft technical area and several administrative structures can be seen within the south-east. The remainder of the airfield is comprised of an 'A-Frame' set of three tarmac runways, surrounded on all sides by a hardstanding taxiway interspersed with several aircraft dispersal pans. Some remaining sections of old perimeter track can be seen within the northern areas of the airfield, giving an idea as to the extent of the expansion which occurred in 1943.
31st August 1954 (Historic England)	This post-WWII era aerial image dated 1954 gives a good account of Upper Heyford after its lease to the USAF and expansion to support large bombers of Strategic Air Command (SAC). The airfield runway is shown to be in the process of expansion at the time this photograph was taken, as well as other facilities across the airbase, including new aircraft hardstandings and new bomb store areas. See **Annex N2** for an overlay of the aerial image.

11.9. Introduction to WWII-era Bombing Decoy Sites

The decoy principal – drawing German bombers away from their designated targets onto dummy sites five or six miles away – began in WWI to protect RAF stations. In 1939, a new department was set up to investigate and coordinate the concept of defence by deception. A whole range of decoy sites were developed – some of them became very elaborate and covered large areas.

Common WWII Decoy Site Variants	
Decoy Type	**Description**
K-site	Daytime dummy airfield. Dummy aircraft and infrastructure.
Q-site	Night time dummy airfield. Intended to represent the working lights of an airfield after dark.
QL	Night time dummy infrastructure. Replicating the lights and workings of marshalling yards, naval installations, armament factories etc.
QF	Fire based decoy. Initially for aircraft factories, RAF maintenance units and ordnance works to simulate them on fire following bombing.
Oil QF	Simulation of burning oil tanks.
Starfish	Replicating a city under incendiary attack.

By June 1944, decoy sites had been attacked on 730 occasions. Attacks ranged from a single night-time bomber dropping its load onto a "Q" site, to the mass attacks on Starfish sites. In misleading air attacks away from intended targets, they were responsible for protecting cities, key Allied installations and saved the lives of thousands of people.

As WWII decoys were specifically designed to be bombed, proposed works planned in the vicinity of such installations can be at an elevated risk from German aerial delivered UXBs. It was not uncommon for evidence of UXBs at a decoy site to be overlooked following an air raid. Given that such installations were on open ground, sometimes agricultural fields, UXB entry holes were not always evident.

The closest recorded decoy site was located approximately 10.2km south-east of the site, in the vicinity of Otmoor. This was an RAF Airfield Decoy site of Q and K type, which was specifically intended to draw Luftwaffe attention away from RAF Upper Heyford and the other satellite airfields within the locality.

11.10. Abandoned Bombs

A post air-raid survey of buildings, facilities, and installations would have included a search for evidence of bomb entry holes. If evidence of an entry hole was encountered, Bomb Disposal Officer Teams would normally have been requested to attempt to locate, render safe, and dispose of the bomb. Occasionally, evidence of UXBs was discovered but due to a relatively benign position, access problems, or a shortage of resources the UXB could not be exposed and rendered safe. Such an incident may have been recorded and noted as an 'abandoned bomb'.

Given the inaccuracy of WWII records, and the fact that these bombs were 'abandoned', their locations cannot be considered definitive or the lists exhaustive. The MoD states that 'action to make the devices safe would be taken only if it was thought they were unstable'. It should be noted that other than the 'officially' abandoned bombs, there will inevitably be UXBs that were never recorded.

1st Line Defence holds no records of officially registered abandoned bombs at or near the site of the proposed works.

11.11. Bomb Disposal Tasks

The information service from the Explosive Ordnance Disposal (EOD) Archive Information Office at 33 Engineer Regiment (now part of 29 EOD & Search Group) is currently facing considerable delay. It has therefore not been possible to include any updated official information regarding bomb disposal/clearance tasks with regards to this site. A database of known disposal/clearance tasks has been referred to which does not make reference to such instances occurring within the site of proposed works. If any relevant information is received at a later date, BWB Consulting Limited will be advised.

11.12. Evaluation of German Aerial Delivered UXO Records

Factors	Conclusion
Density of Bombing *It is important to consider the bombing density when assessing the possibility that UXBs remain in an area. High bombing density could allow for error in record keeping due to extreme damage caused to the area.*	During WWII the site was located within the Rural District of Ploughly, which was subject to an overall very low density of bombing according to Home Office bombing statistics, with an average of 3.5 items of ordnance per 1,000 acres. This was mainly due to the lack of strategic bombing targets and the large areas of agricultural land that predominantly occupied much of the rural districts. As the site comprised agricultural land during WWII, there is no particular reason to suspect that the site area itself would have been targeted or directly attacked. However, the presence of strategic targets in the wider vicinity; notably RAF Upper Heyford airfield immediately adjacent to the west of the site, RAF Weston-on-the-Green which was located approximately 2.5km south, RAF Croughton located approximately 2.5km north and RAF Bicester, located approximately 4.3km south-east of the site. These are known to have been subject to specific bombing raids, and their relative proximity is anticipated to cause a slight elevation of the bomb density across the site area. More than 62 HE bomb strikes are recorded to have fallen in the vicinity of Weston-on-the-Green parish to the south of the site, 29 within the parish of Upper Heyford parish immediately to the west, 17 in Fritwell parish to the north-west, one HE bomb strike and several Incendiary bombs within Stoke Lyne parish. **Annex L** provides an overlay of bomb strikes with specified and approximate locations derived from local ARP Logbook records obtained from Oxfordshire History Centre and a bomb map obtained from Oxfordshire County Council. Although it should be noted that this map does not provide a comprehensive account of the bombing on site, nor does it denote exact bomb strike locations.
Damage *If buildings or structures on a site sustained bomb or fire damage, any resulting rubble and debris could have obscured the entry holes of unexploded bombs dropped during the same or later raids. Similarly, a high explosive bomb strike in an area of open agricultural land will have caused soil disturbance, increasing the risk that a UXB entry hole would be overlooked.*	Due to the size and largely rural nature of the site, it has not been possible to assess signs of damage across the entire area in detail. Although on the basis of OS mapping structures in the area surrounding the site appear intact in the post-war era. It may be noted that evidence of damage at the locations of the site which consist of open ground would likely be difficult to discern. The absence of visible damage throughout the site is therefore not necessarily indicative of a lack of bombing on site.
Ground Cover *The nature of the ground cover present during WWII would have a substantial influence on any visual indication that may indicate UXO being present.*	As much of the site was occupied by open rural land, it is considered possible that UXBs could have gone undetected, as bomb entry holes may have been obscured or overlooked. For example, the entry hole for a 50kg UXB can be as small as 20cm in diameter. As such, the possibility that an item of UXO fell on site unnoticed and unrecorded cannot be confidently discounted. Areas that were occupied by structures, roadways and other infrastructure are considered to have been more conducive to observation of evidence of UXO.

Access Frequency *UXO in locations where access was irregular would have a greater chance of passing unnoticed than at those that were regularly occupied. The importance of a site to the war effort is also an important consideration as such sites are likely to have been both frequently visited and subject to post- raid checks for evidence of UXO.*	Access and general monitor within sections of the site which were located in a close proximity to structures and roadways is considered to have been broadly frequent. As such, any incidents in such areas are likely to have been noticed and recorded, although this cannot be completely guaranteed. Large sections of the site were occupied by open agricultural land which was likely to have been subject to only seasonal access by farmers, and therefore the possibility that items of UXO may have gone missing in such areas is considered more likely.
Bomb Failure Rate	There is no evidence to suggest that the bomb failure rate in the locality of the site would have been dissimilar to the 10% normally used.
Abandoned Bombs	1st Line Defence holds no records of abandoned bombs at or within the site vicinity.
Bombing Decoy sites	1st Line Defence could find no evidence of bombing decoy sites within the site vicinity. A geo-dataset held in-house indicates that the closest recorded decoy site was located approximately 10.2km south-east of the site, intended to draw Luftwaffe attention away from RAF Upper Heyford.
Bomb Disposal Tasks	1st Line Defence could find no evidence of bomb disposal tasks within the site boundary and immediate area.

12. Introduction to Allied Ordnance

12.1. General

Many areas across the UK may be at risk from Allied UXO because of both wartime and peacetime military use. Typical military activities and uses that may have led to a legacy of military UXO at a site include former minefields, home guard positions, anti-aircraft emplacements, training and firing ranges, military camps, as well as weapons manufacture and storage areas.

Although land formerly used by the military was usually subject to clearance before returned to civilian use, items of UXO are sometimes discovered and can present a potential risk to construction projects.

This section of the report discusses the generic types of Allied ordnance typically encountered on areas associated with former military activity.

12.2. Nuclear Weaponry

The western section of the site is known to have been located immediately adjacent to a bomb store area associated with USAF Upper Heyford. This feature has been identified as the South Nuclear Bomb Store, as presented within **Annex O**. The consideration of risk from any nuclear weaponry or associated components is beyond the remit of this report and should be separately assessed, if deemed necessary.

12.3. Land Service Ammunition

Owing to the sites location adjacent to RAF/USAF Upper Heyford, its associated bomb storage area, the sites close proximity to the Middleton Stoney Camp, in which US Army troops are known to have been stationed prior to the invasion of Europe, as well as anecdotal accounts of training exercises in the surrounding countryside; the risk from items of Land Service Ammunition (LSA) must be considered.

The term LSA covers items of ordnance that are propelled, placed, or thrown during land warfare. These items may be filled or charged with explosives, smoke, incendiary, or pyrotechnics and can be divided into five main groups:

In the UK unexploded or partially exploded mortars and grenades are the most common items of LSA encountered, as they could be transported and utilised anywhere. They are mostly encountered in areas used for military training and are often found discarded on or near historical military bases. Images of the most commonly found items of LSA are presented in **Appendices iv - vi.**

12.4. Small Arms Ammunition

Owing to the above mentioned reasons presented within **Section 12.2**, notably the presence of US Army Troops in the site locality and anecdotal accounts of military training exercises in the vicinity, the risk from items of Small Arms ammunition (SAA) must be considered.

The most common type of ordnance encountered on land used by the military are items of Small Arms Ammunition (SAA). SAA refers to the complete round or cartridge designed to be discharged from varying sized hand-held weapons such as rifles, machine guns and pistols. SAA can include bullets, cartridge cases and primers/caps. Example images of the most SAA are presented in **Appendix vii.**

12.5. Defending the UK From Aerial Attack

During WWII the War Office employed a number of defence tactics against the Luftwaffe from bombing major towns, cities, manufacturing areas, ports and airfields. These can be divided into passive and active defences (examples are provided in the table below).

Active Defences	Passive Defences
• Anti-aircraft gun emplacements to engage enemy aircraft. • Fighter aircraft to act as interceptors. • Rockets and missiles were used later during WWII.	• Blackouts and camouflaging to hinder the identification of Luftwaffe targets. • Decoy sites were located away from targets and used dummy buildings and lighting to replicate urban, military, or industrial areas. • Barrage balloons forced enemy aircraft to greater altitudes. • Searchlights were often used to track and divert adversary bomber crews during night raids.

Active defences such as anti-aircraft artillery present a greater risk of UXO contamination than passive defences. Unexploded ordnance resulting from dogfights and fighter interceptors is rarely encountered and difficult to accurately qualify.

12.5.1. Anti-Aircraft Artillery (AAA)

During WWII three main types of gun sites existed: heavy anti-aircraft (HAA), light anti-aircraft (LAA) and 'Z' batteries (ZAA). If the projectiles and rockets fired from these guns failed to explode or strike an aircraft they would descend back to land. The table below provides further information on the operation and ordnance associated with these type of weapons.

Anti-Aircraft Artillery				
Item	**Description**			
HAA	These large calibre guns such as the 3.7" QF (Quick Firing) were used to engage high flying enemy bombers. They often fired large HE projectiles, which were usually initiated by integral fuzes, triggered by impact, area, time delay or a combination of aforementioned mechanisms.			
LAA	These mobile guns were intended to engage fast, low flying aircraft. They were typically rotated between locations on the perimeters of towns and strategically important industrial works. As they could be moved to new positions with relative ease when required, records of their locations are limited. The most numerous of these were the 40mm Bofors gun which could fire up to 120 x 40mm HE projectiles per minute to over 1,800m.			
Variations in HAA and LSA Ammunition	**Gun type**	**Calibre**	**Shell Weight**	**Shell Dimensions**
	3.0 Inch	76mm	7.3kg	76mm x 356mm
	3.7 Inch	94mm	12.7kg	94mm x 438mm
	4.5 Inch	114mm	24.7kg	114mm x 578mm
	40mm	40mm	0.9kg	40mm x 311mm
Z-AA	The three inch unrotated rocket/projectile known as the UP-3 had initially been developed for the Royal Navy. The UP-3 was also used in ground-based single and 128-round launchers known as ''Z'' batteries. The rocket, containing a high explosive warhead was often propelled by cordite.			

The conditions in which anti-aircraft projectiles may have fallen unnoticed within a site area are analogous to those regarding aerial delivered ordnance. Unexploded anti-aircraft projectiles could essentially have fallen indiscriminately anywhere within range of the guns. The chance of such items being observed, reported and removed during the war depends on factors such as land use, ground cover, damage and frequency of access – the same factors that govern whether evidence of a UXB is likely to have been noted. More information about these factors with regards to this particular site can be found in the German Aerial Delivered Ordnance section of this report.

Illustrations of Anti-Aircraft artillery, projectiles and rockets are presented at **Appendix viii**.

13. The Likelihood of Contamination from Allied Ordnance

13.1. Introduction

When undertaking construction work within or immediately adjacent to a site with previous and/or current military use, it is often considered likely to contain an elevated risk of contamination from Allied UXO. This assumption of risk is based on the following reasoning:

- The clearance of ordnance from military camps, depots, storage facilities, ranges and training areas were not always effectively managed, or undertaken to equivalent degrees of certainty. In addition, search and detection equipment used over seventy years ago following WWII has proved ineffective both for certain types of UXO and at depths beyond capability.
- In the vast majority of cases, explosive ordnance would have been stored and available for use at military installations. Ordnance ranged from small arms and land service ammunition to weapons components and larger, aerial delivered items. During periods of heightened activity, ordnance was also frequently lost in transit, particularly between stores and assigned training locations.
- The military generally did not anticipate that their land would be later sold for civilian development, and consequently appropriate ordnance disposal procedure was not always adhered to. It was not uncommon for excess or unwanted ordnance to be buried or burnt within the perimeters of a military establishment as a means of disposal. Records of such practice were rarely kept.

There are several factors that may serve to either affirm, increase, or decrease the level of risk within a site with a history of military usage. Such factors are typically dependent upon the proximity of the proposed area of works to training activities, munition productions and storage, as well as its function across the years.

This section will examine the history of the proposed site and assess to what degree, if any, the site could have become contaminated as a result of the military use of the surrounding area.

13.2. Military History of the Site of Proposed Works

13.2.1. WWI-era

RAF Upper Heyford was conceived during the days of the Royal Flying Corps in World War I. In 1916, Canadian engineers began laying out a landing field on the plateau above the Cherwell valley, west of Bicester, where airmen could train before going to the front. The 257 acre airfield opened in 1918, comprising six hangars, a tarmac apron, as well as a technical area within the south-east corner of the airfield. Upper Heyford was home to three squadrons of the new Royal Air Force and their Sopwith Dolphins and Salamander aircraft. From August 1918, the first two squadrons of the infant Canadian Royal Air Force were also established on the base, though the war ended before they became active.[4]

13.2.2. Interwar Period

During the interwar period RAF Upper Heyford was redeveloped into a bomber station, and in 1927 was occupied by Hyderabads of 10 and 99 Squadrons. In 1936 and with the advent of the rearmament programme, Upper Heyford became part of Number 1 Bomber Group of the new Bomber Command. Its Long Range Development flight of Vickers Wellesleys helped develop the navigation and endurance skills that made long-range bombing missions possible. The station also played a role in research into radar, when one of its planes became the first one ever to be tracked by radio waves, via the BBC transmitter at Daventry in Northamptonshire.

13.2.3. WWII-era

With war imminent 70 Bomber Wing was reformed at Upper Heyford on 1st September 1939. This was an aerial component for the British Expeditionary force which undertook strategic aerial reconnaissance for the army in France. After their departure to the continent, Upper Heyford was placed under 6 group in a pilot training role with use of Handley Page Hampdens and Avro Anson medium bombers. The need for skilled bomber crews increased exponentially as many were lost during the first year of the war. As such 16 Operational Training Unit (OTU), one of 22 such units that were formed to train crews for their operational role in mid-1940. The Hampdens of OTU 16 saw their first action in July – October 1940 tasked with dropping leaflets over occupied territory in France, in which they were also armed with 2 x 250lb bombs.

As the Battle of Britain approached a 'Q' site decoy airfield was set up near Otmoor in anticipation of German aerial attacks on RAF airfields. Both the decoy site and airfield received several bomb strikes throughout the main period of bombing.

During mid-1941, 16 OTU at Upper Heyford started to be reequipped with Vickers Wellington bombers and they were involved in their first 1,000 bomber raid against Cologne on 30th/31st May 1941, also the first in which 16 OTU were used to bomb targets within Germany. The unit subsequently took part in large scale bomb raids on Essen on 1st/2nd June 1941 and Bremen on 25th/26th June 1941. Subsequent attacks on Dusseldorf, Bremen and Essen were undertaken in September.

During March to September 1944, Upper Heyford's grass and wire-mesh runways were replaced by three new tarmac runways, complete with concrete taxiways, 22 aircraft dispersal pans and seven loop hardstandings. At this late stage in the war, bomber squadrons were well equipped with trained crews and bomber Operational Training Units (OTU), including 16 OTU at Upper Heyford, were disbanded. 1655 Training Unit then took up residence at the airfield, tasked with training crews on De Havilland Mosquitos, a twin-engine multirole fighter bomber. This remained until the end of WWII.[5]

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[4] *http://www.bbc.co.uk/oxford/content/articles/2009/02/16/raf_upper_heyford.shtml*

[5] *Davis, P., Airfield Focus: Upper Heyford., GMS Enterprises., 2001*

During WWII, the Middleton Stoney Camp, which was located approximately 250m – 1.2km west of the southern-most section of the site, is known to have been occupied by the Lancashire Fusiliers, housing searchlight batteries and machine guns. Part of the camp was used to station Italian and German prisoners of war, organising them into work parties for use on farms and quarries in the surrounding area.[6] Middleton Stoney is also reported to have been used to store equipment for Upper Heyford, included a firing range, stationed US Army troops prior to the D-Day landings and comprised a US military hospital.

13.2.4. Post-WWI era

As WWII ended and the Cold war began, the USAF leased the airfield from the Ministry of Defence as part of the NATO (North Atlantic Treaty Organization) alliance in 1952, as well as three other airfields in the west of England; Brize Norton, Fairford and Greenham Common. Upper Heyford was given new runways, aprons and hard standings, as well as 170 new buildings such as the innovative nose-docking sheds that allowed maintenance of the new generation of US bombers, high off the ground.

The USAF's Strategic Air Command (SAC) stationed B-47 bombers at Upper Heyford, which remained until 1965. Upper Heyford was also used by reconnaissance aircraft that gathered intelligence on Soviet radar and communications, and helped monitor Soviet nuclear tests. Air sampling was undertaken at very high altitudes over test sites to see what could be learned about the latest Soviet weapons. [7]

The 66th Tactical Reconnaissance Wing (TRW) took up residence with the RF-101C "Voodoo" until 1969. By the mid-1970's, the F-100's of the 20th Tactical Fighter Wing (TFW) arrived, but were replaced soon after by the F-111E, "Aardvark". Subsequent squadrons of EF-111A “Raven” were stationed at Upper Heyford and used in conjunction with their strike aircraft counterparts on bombing raids on Libya in 1986 and Iraq in 1991 as part of Operation Desert Storm.[8]

The collapse of the USSR led to a US demobilisation of several airbases within the UK, and brought US occupancy and operations at Upper Heyford to a close in 1994.

[6] *http://smhccg.org/village-history/prisoner-of-war-camp/*
[7] *https://www.forces-war-records.co.uk/units/712/raf-upper-heyford*
[8] *https://military.wikia.org/wiki/RAF_Upper_Heyford*

13.3. Online/Anecdotal References to the Allied/Military Activity Within the Site Locality

Anecdotal references referring to the RAF/USAF Upper Heyford and Allied/military related activity that took place throughout WWII in site locality were obtained from a variety of online sources including official documentation, first hand anecdotal accounts from people who worked at the airbase and locals who lived in the surrounding environs. Some examples of the references relating to the vicinity are transcribed below and those believed to be located in proximity to the site are highlighted in boldface.

Online/Anecdotal References to the Allied/Military Activity Within the Site Locality	
Extracts from Browns at Park Farm[9]	
Date Range	**Comments**
1939 – 1945	In the Second World War the farms park land was used as a base, for storing aeroplanes, as a firing range and there was also a camp hospital for treating injured soldiers.
Extracts from Stoney Middleton Heritage[10]	
1939 – 1945	The camp was originally established as a military encampment at the beginning of the war, manned, by the Lancashire Fusiliers. The camp housed powerful searchlights and machine guns, placed to protect the production of essential materials from the quarries, searching out and shooting down any attempted German bomb attack. The camp was built on land between Middleton Hall and Calver, now the Meadow Close development.
Extracts from Bicester Local History Society[11]	
1939 – 1945	As the war progressed military forces built up in the area and training exercises became a regular feature in the surrounding countryside. Army camps were built on the outskirts of the town off the Bucknell Road and at Ambrosden. American troops were based at Middleton Stoney and Kirtlington Park prior to the invasion of Europe.
Extracts from Ex Utopia RAF Upper Heyford[12]	
1950 – 1994	'There had been two main bomb storage areas at Upper Heyford. One in the south, I was told, where the conventional weapons had been stored. The northern area meanwhile was designated 'other weapons.'
1991	'Later, the fighter wing at Upper Heyford participated in Operation Desert Storm. Commencing in January 1991, the F-111Es of the 20th TFW joined the conflict in Iraq. They launched combat missions from Turkey and Saudi Arabia, evading Iraqi anti-aircraft artillery to target power plants, electronics sites, oil refineries and nuclear-biological-chemical processing facilities.' 'By the end of Desert Storm the wing had flown 1,798 sorties without a loss, dropping more than 4,700 tons of ordnance on its targets.'

[9] *https://brownsatparkfarm.co.uk/our-history/*
[10] *http://smhccg.org/village-history/prisoner-of-war-camp/*
[11] *https://www.blhs.org.uk/index.php/head_military/world-war-ii*
[12] *https://www.exutopia.com/usaf-upper-heyford-chasing-cold-war-ghosts-in-rural-oxfordshire/*

13.4. Evaluation of Contamination Risk from Allied UXO

1st Line Defence has considered the following potential sources of Allied ordnance contamination:

Sources of Allied UXO Contamination	Conclusion
Military Camps *Military camps present an elevated risk from ordnance simply due to the large military presence and likelihood of associated live ordnance training.*	1st Line Defence could find no evidence of a military camp within the site. A geo-dataset held in-house indicated that the Middleton Stoney Camp was located approximately 250m – 1.2km west of the southern-most section of the site. Middleton Stoney and the surrounding area is known to have been occupied by the Lancashire Fusiliers, housing searchlight batteries and machine guns. Part of the camp was used to station Italian and later, German prisoners of war, organising them into work parties for use on farms and quarries in the surrounding area.[13] Also during WWII, Middleton Stoney is said to have been used to store equipment for Upper Heyford, included a firing range, stationed US Army troops prior to the D-Day landings and was used as a US military hospital. [14][15]
Anti-Aircraft Defences *Anti-Aircraft defences were employed across the country. Proximity to anti-aircraft defences increases the chance of encountering AA projectiles.*	1st Line Defence could find no evidence of Anti-Aircraft defences such as a HAA or LAA gun emplacement occupying or bordering the site. The closest HAA was located approximately 7.7km north of the site, to the west of RAF Hinton-in-the-Hedges airfield. Despite this distance the maximum effective range of an AA projectile can be up to 15km. A geo-dataset held in-house indicates that several LAA batteries are known to have been located within the bounds of the RAF Upper Heyford airfield to the west of the site, the closest being located approximately 350m west of the western-most extent of the site. Although it is possible that additional mobile LAA batteries could have come to be located within or close to the site area for periods. The conditions in which HAA or LAA projectiles may have fallen unnoticed within a site footprint are analogous to those regarding German aerial delivered ordnance.
Home Guard Activity *The Home Guard regularly undertook training and ordnance practice in open areas, as well as burying ordnance as part of anti-invasion defences.*	Evidence of Home Guard activity is often difficult to locate, owing to the ad-hoc nature of Home Guard activity within each local area. Such training was often conducted on a small scale at the discretion of individual commanders and as such was seldom recorded officially. As such, no positive evidence could be found to confirm the presence of HG units within proximity to the site.
Defensive Positions *Defensive positions suggest the presence of military activity, which is often indicative of ordnance storage, usage or disposal.*	There is no evidence of any pillbox, emplacement or other defensive features formerly located on or bordering the site footprint.

[13] *http://smhccg.org/village-history/prisoner-of-war-camp/*
[14] *https://brownsatparkfarm.co.uk/our-history/*
[15] *https://www.blhs.org.uk/index.php/head_military/world-war-ii*

Training or firing ranges *Areas of ordnance training saw historical ordnance usage in large numbers, often with inadequate disposal of expended and live items. The presence of these ranges significantly impact on the risk of encountering items of ordnance in their vicinity.*	No evidence of training or firing ranges could be found within the site area, although anecdotal evidence indicates the presence of a firing range within the vicinity of Brown's at Park Farm, located approximately 1.1km west of the southern section of the site. RAF site plans obtained from the RAF Museum at Hendon indicates that and Machine Gun (MG) range was located within the bounds of RAF Upper Heyford approximately 615m west of the site.
Defensive Minefields *Minefields were placed in strategic areas to defend the country in the event of a German invasion. Minefields were not always cleared with an appropriate level of vigilance.*	There is no evidence of defensive minefields affecting the site.
Ordnance Manufacture/Storage *Ordnance manufacture indicates an increased chance that items of ordnance were stored, or disposed of, within a location.*	During WWII RAF Upper Heyford was used as an Operation Training Unit for Bomber Command which were involved in a number of bombing sorties over Germany. As such, bombs, fuses and ordnance of various types will have been stored within the bounds of the airfield in a dedicated bomb store area. This bomb store area has been identified on RAF site plans from 1942, presented within **Annex F1** and was located approximately 800m west of the site. After RAF Upper Heyford was leased to the USAF in 1950, the airfield underwent significant development and expansion. This included the construction of two additional bomb store areas; the northern bomb store and southern bomb store, presented within **Annex O**. the western section of the site was located approximately 180m from the northern bomb store area and immediately adjacent to the southern bomb store area. Information regarding the use of the bomb stores varies between sources, although as the airfield housed squadrons of Strategic Air Command (SAC) squadrons throughout the 1950's and 1960's, it is likely that one or both of these bomb stores were used to store nuclear weapons during this period, as well as a variety of conventional munitions throughout the USAF's tenure of the airfield.
Military Related Airfields *Military airfields present an elevated risk from ordnance simply due to the large military presence and likelihood of associated live ordnance training or bombing practice.*	The site was situated immediately bordering the perimeter boundary of RAF Upper Heyford which later became USAF Upper Heyford; a military airfield active during WWI, WWII and the cold war, from 1918 until 1993.

14. The Likelihood of UXO Contamination Summary

The following table assesses the likelihood that the site was contaminated by items of German aerial delivered and Allied ordnance. Factors such as the risk of UXO initiation, remaining, and encountering will be discussed later in the report.

UXO Contamination Summary	
Quality of the Historical Record	The research has evaluated pre- and post-WWII Ordnance Survey maps, Home Office bombing statistics, WWII-era site plans of RAF Upper Heyford, a local bomb map obtained from Oxfordshire County Council, local ARP Logbook records obtained from Oxfordshire History Centre, post-WWII era aerial imagery of the site, a geo-dataset held in-house, as well as anecdotal, published and online record sets. The record set is of generally satisfactory quality. WWII-era RAF site plans and published literature regarding RAF Upper Heyford gave a good insight into the composition and use of the airfield throughout its operational history. However, whilst the date, number and type of bombs resulting from bombing raids within the site locality and surrounding environs were able to be corroborated between a local bomb map and local written records, the exact locations of these incidents were unable to be ascertained. As such only approximate locations of these strikes were able to be derived from the available record sets. Furthermore, owing to the development of the airfield during and in the post-war era, damage and potential ground disturbances as a result of bombing was not able to be distinguished within post-war aerial imagery.
German Aerial Delivered Ordnance	• During WWII the site was located within the Rural District of Ploughly, which was subject to an overall very low density of bombing according to Home Office bombing statistics, with an average of 3.5 items of ordnance per 1,000 acres. This was mainly due to the lack of strategic bombing targets and the large areas of agricultural land that predominantly occupied much of the rural districts. • As the site comprised agricultural land during WWII, there is no particular reason to suspect that the site area itself would have been targeted or directly attacked. However, the presence of strategic targets in the surrounding vicinity; notably RAF Upper Heyford airfield immediately adjacent to the west of the site, RAF Weston-on-the-Green which was located approximately 2.5km south, RAF Croughton located approximately 2.5km north and RAF Bicester, located approximately 4.3km south-east of the site. These are known to have been subject to specific bombing raids, and their relative proximity is anticipated to cause a slight elevation of the bomb density across the site area in general. More than 62 HE bomb strikes are recorded to have fallen in the vicinity of Weston-on-the-Green parish to the south of the site, 29 within the parish of Upper Heyford parish immediately to the west, 17 in Fritwell parish to the north-west, one HE bomb strike and several Incendiary bombs within Stoke Lyne parish. • **Annex L** provides an overlay of bomb strikes with specified and approximate locations derived from local ARP Logbook records obtained from Oxfordshire History Centre and a bomb map obtained from Oxfordshire County Council. Although it should be noted that this map does not provide a comprehensive account of the bombing on site, nor does it denote exact bomb strike locations. • It is evident that the closest bombing target would have been RAF Upper Heyford – various sources confirm that the airfield was attacked on several occasions, with bombs falling both on and close to the station. No bomb census mapping was available for the area, so it not clear exactly where all of the recorded bombs fell on and around the site. However, it might be argued that the risk of UXB contamination is elevated the closer the proximity to the airfield boundaries. • Due to the size and largely rural nature of the site, it has not been possible to assess signs of damage across the entire area in detail. Although on the basis of OS mapping structures in the area surrounding the site appear intact post-war.

	• As much of the site was occupied by open rural land, it is considered possible that UXBs could have gone undetected, as bomb entry holes may have been obscured or overlooked in vegetated areas or areas under crop. The entry hole for a 50kg UXB can be as small as 20cm in diameter. As such, the possibility that an item of UXO fell on site unnoticed and unrecorded cannot be confidently discounted. Equally, overall, it is not considered likely that any one area of the site would have been frequently accessed or specifically checked for evidence of German air-delivered ordnance, given its open, agricultural nature. It is therefore conceivable that UXBs could have gone unnoticed if they fell within the site boundary. • In summary, given the various targets in the wider area, and the presence of RAF Upper Heyford to the west of the site, it has not been possible to entirely discount the risk of contamination from German aerial delivered ordnance within the bounds of the site. However, for the most part, the risk of contamination is not considered significantly elevated above the general 'background' level of risk for similar agricultural fields in the wider area. It has however been determined that the risk of contamination is likely to increase with closer proximity to the former airfield, which is known to have been attacked on a number of occasions. Although the site was not within the bounds of the airfield, the risk of contamination in the fields which immediately adjoin the airfield is assessed as elevated as a precaution. A risk map demonstrating this is presented in **Annex P1**.
Allied Ordnance	• During WWII RAF Upper Heyford was used as an Operational Training Unit for Bomber Command which were involved in a number of bombing sorties over Germany. As such, bombs, fuses and ordnance of various types will have been stored within the bounds of the airfield in a dedicated bomb store area. This bomb store area has been identified on RAF site plans from 1942, presented within **Annex F1** and was located approximately 800m west of the site. • After RAF Upper Heyford was leased to the USAF in 1950, the airfield underwent significant development and expansion. This included the construction of two additional bomb store areas; the northern bomb store and southern bomb store, presented on RAF site plans from 1994 within **Annex O**. The western section of the site was located approximately 180m from the northern bomb store area and immediately adjacent to the southern bomb store area. • Information regarding the use of the bomb stores varies between sources, although as the airfield housed squadrons of Strategic Air Command (SAC) squadrons throughout the 1950's and 1960's, it is likely that one or both of these bomb stores were used to store nuclear weapons during this period, as well as a variety of conventional munitions throughout the USAF's tenure of the airfield. • A geo-dataset held in-house indicated that the Middleton Stoney Camp was located approximately 250m – 1.2km west of the southern-most section of the site. Middleton Stoney and the surrounding area is known to have been occupied by the Lancashire Fusiliers, housing searchlight batteries and machine guns. The camp is also said to have been used to store equipment for Upper Heyford, included a firing range, stationed US Army troops prior to the D-Day landings and was used as a US military hospital. • A press article from April 2019 reports that two 'unexploded bombs' were removed from Camp Road – within former RAF Heyford, to the west of the site. It is thought possible they these were practice bombs – possibly of the small 10/11lb variety. This would not be unexpected given the history of the airfield. Such items would usually be 'targeted' at a specific location within the bounds of an airfield. However, it was not unheard of for practice bombing to overshoot and affect the land surrounding an historic airfield. • Consulted record sets indicates that no LAA or HAA batteries are known to have been located within or bordering the bounds of the site; the closest recorded was an LAA battery situated approximately 350m west of the site. Although it is possible that mobile LAA batteries could have come to be temporarily located within the site.

	• No specific evidence of training or firing ranges could be found within the site area, although anecdotal evidence indicates the presence of a firing range within the vicinity of Brown's at Park Farm, located approximately 1.1km west of the southern section of the site. • In summary, whilst the site was located outside the demarcated bounds of the Upper Heyford airfield, and these allied features were not located directly within the bounds of the site, as a precaution, the fields immediately adjoining the airfield have been ascribed a higher level of risk than those further away. It is not unheard of for contamination to have occurred both within and immediately adjacent to airfield perimeters – through burial, burning, improper disposal, exercises etc. As with bombing risk, the risk of contamination from Allied items of ordnance is considered to 'drop-off' with distance from the airfield, and is considered to be 'Low' for the majority of the site (see Risk Map, **Annex P2**.

15. The Likelihood that UXO Remains

15.1. Introduction

It is important to consider the extent to which any explosive ordnance clearance (EOC) activities or extensive ground works have occurred on site. This may indicate previous ordnance contamination or reduce the risk that ordnance remains undiscovered.

15.2. UXO Clearance

Former military sites (or at least certain areas within their footprint) are often subject to clearance before they are returned to civilian use by the MoD. If a site is retained by the military, it is possible that no clearance operations have ever been undertaken. However, UXO is sometimes still discovered even on sites where clearance operations are known to have been undertaken. The detail and level of survey and targeted investigation undertaken by the military will depend on the former use of the site and purpose of the clearance (i.e. disposal, redevelopment, return to agriculture, etc.).[16] The level of clearance will also depend on the available technology, resources and practices of the day.

It therefore cannot be assumed that the risk of UXO remaining has been completely mitigated, even though EOC tasks have been undertaken at a former military site.

15.3. Post-War Redevelopment

OS mapping indicates that the site area has been subject to very limited development in the post-war era. The site largely retains its open and undeveloped agricultural outlay. The only discernible development took place within the northern and eastern sections of the site during the late-1960's and early 1970's, in which a segment of the M40 motorway and associated slip roads were constructed.

The risk of UXO remaining is considered to be mitigated at the location of and down to the depth of any post-war redevelopment on site. For example, the risk from deep buried UXO will only have been mitigated within the volumes of any post-war pile foundations or deep excavations for basement levels. The risk will however remain within virgin geology below and amongst these post-war works, down to the maximum bomb penetration depth.

[16] *CIRIA C681*

16. The Likelihood of UXO Encounter

16.1. Introduction

For UXO to pose a risk at a site, there should be a means by which any potential UXO might be encountered on that site.

The likelihood of encountering UXO on the site of proposed works would depend on various factors, such as the type of UXO that might be present and the intrusive works planned on site. In most cases, UXO is more likely to be present below surface (buried) than on surface.

In general, the greater the extent and depth of intrusive works, the greater the risk of encountering. The most likely scenarios under which items of UXO could be encountered during construction works is during piling, drilling operations or bulk excavations for basement levels. The overall risk will depend on the extent of the works, such as the numbers of boreholes/piles (if required) and the volume of the excavations.

Generally speaking, the risk of encountering any type of UXO will be minimal for any works planned within the footprint and down to the depth of post-war foundations and excavations.

16.2. Encountering Aerial Delivered Ordnance

Since an aerial delivered bomb may come to rest at any depth between just below ground level and its maximum penetration depth, there is a chance that such an item (if present) could be encountered during shallow excavations (for services or site investigations) into the original WWII ground level as well as at depth.

16.3. Land Service/Small Arms Ammunition Encounter

Items of LSA and SAA are mostly encountered in areas previously used for military training. Such items could have been lost, burnt, buried or discarded during being in use by the military. Due to this, LSA are most likely to be encountered at relatively shallow depths – generally in the top 1m below ground level. Therefore, such items are most likely to be encountered during open excavation works. In some cases, there is the potential that LSA or SAA may be present on the surface of the ground – especially in areas with active military use or were recently in use by the MoD.

17. The Likelihood of UXO Initiation

17.1. Introduction

UXO does not spontaneously explode. Older UXO devices will require an external event/energy to create the conditions for detonation to occur. The likelihood that a device will function can depend on a number of factors including the type of weaponry, its age and the amount of energy it is struck with.

17.2. Initiating Aerial Delivered Ordnance

Unexploded bombs do not spontaneously explode. All high explosive filling requires significant energy to create the conditions for detonation to occur.

In recent decades, there have been a number of incidents in Europe where Allied UXBs have detonated, and incidents where fatalities have resulted. There have been several hypotheses as to the reason why the issue is more prevalent in mainland Europe – reasons could include the significantly greater number of bombs dropped by the Allied forces on occupied Europe, the preferred use by the Allies of mechanical rather than electrical fuzes, and perhaps just good fortune. The risk from UXO in the UK is also being treated very seriously in many sectors of the construction industry, and proactive risk mitigation efforts will also have affected the lack of detonations in the UK.

There are certain construction activities which make initiation more likely, and several potential initiation mechanisms must be considered:

UXB Initiation	
Direct Impact	Unless the fuze or fuze pocket is struck, there needs to be a significant impact e.g. from piling or large and violent mechanical excavation, onto the main body of the weapon to initiate a buried iron bomb. Such violent action can cause the bomb to detonate.
Re- starting the Clock	A small proportion of German WWII bombs employed clockwork fuzes. It is probable that significant corrosion would have taken place within the fuze mechanism over the last 70+ years that would prevent clockwork mechanisms from functioning. Nevertheless, it was reported that the clockwork fuze in a UXB dealt with by 33 EOD Regiment in Surrey in 2002 did re-start.
Friction Impact	The most likely scenario resulting in the detonation of a UXB is friction impact initiating the shock-sensitive fuze explosive. The combined effects of seasonal changes in temperature and general degradation over time can cause explosive compounds to crystallise and extrude out from the main body of the bomb. It may only require a limited amount of energy to initiate the extruded explosive which could detonate the main charge.

17.3. Land Service /Small Arms Ammunition Initiation

Items of LSA generally do not become inert or lose their effectiveness with age. Time can cause items to become more sensitive and less stable. This applies equally to items submerged in water or embedded in silts, clays, or similar materials. The greatest risk occurs when an item of ordnance is struck or interfered with. This is likely to occur when mechanical equipment is used or when unqualified personnel pick up munitions.

If left alone, an item of LSA will pose little/no risk of initiation. Therefore, if it is not planned to undertake construction/intrusive works at the site, the risk of initiation of any LSA that may be present would be negligible. Similarly, those accessing a contaminated area would be at minimal risk if they do not interfere with any UXO present on the ground. Clearly for many end uses, however, the presence of UXO anywhere on a site would not be acceptable as it could not be guaranteed that the items will not be handled, struck or otherwise affected, increasing the likelihood of initiation.

Items of SAA are much less likely to detonate than LSA or UXBs, but can be accidentally initiated by striking the casing, coming into contact with fire, or being tampered with/dismantled. It is likely that the detonation of an item of SAA would result in a small explosion, as the pressure would not be contained within a barrel. Detonation would only result in local overpressure and very minor fragmentation from the cartridge case.

18. Consequences of Initiation/Encounter

18.1. Introduction

The repercussions of the inadvertent detonation of UXO during intrusive ground works, or if an item or ordnance is interfered with or disturbed, are potentially profound, both in terms of human and financial cost. A serious risk to life and limb, damage to plant and total site shutdown during follow-up investigations are potential outcomes. However, if appropriate risk mitigation measures are put in place, the chances of initiating an item of UXO during ground works is comparatively low.

The consequences of encountering UXO can be particularly notable in the case of high-profile sites (such as airports and train stations) where it is necessary to evacuate the public from the surrounding area. A site may be closed for anything from a few hours to a week with potentially significant cost in lost time. It should be noted that even the discovery of suspected or possible item of UXO during intrusive works (if handled solely through the authorities), may also involve significant loss of production.

18.2. Consequences of Detonation

When considering the potential consequences of a detonation, it is necessary to identify the significant receptors that may be affected. The receptors that may potentially be at risk from a UXO detonation on a construction site will vary depending on the site specific conditions but can be summarised as follows:

- People – site workers, local residents and general public.
- Plant and equipment – construction plant on site.
- Services – subsurface gas, electricity, telecommunications.
- Structures – not only visible damage to above ground buildings, but potentially damage to foundations and the weakening of support structures.
- Environment – introduction of potentially contaminating materials.

19. 1st Line Defence Risk Assessment

19.1. Risk Assessment Stages

Taking into account the quality of the historical evidence, the assessment of the overall risk from unexploded ordnance is based on the following five considerations:

1. That the site was contaminated with unexploded ordnance.
2. That unexploded ordnance remains on site.
3. That such items will be encountered during the proposed works.
4. That ordnance may be initiated by the works operations.
5. The consequences of encountering or initiating ordnance.

19.2. Assessed Risk Level Within the North-Western Section of the Site

1st Line Defence has assessed that there is a **Medium Risk** from German and anti-aircraft unexploded ordnance, as well as a **Medium Risk** from Allied unexploded ordnance within the north-western section of the site. See a risk map of the site area presented within **Annex P3.**

Ordnance Type	Risk Level			
	Negligible	Low	Medium	High
German Unexploded HE Bombs			✓	
German 1kg Incendiary Bombs			✓	
Anti-Aircraft Artillery Projectiles			✓	
Allied Land Service and Small Arms Ammunition			✓	
Allied Practice Bombs			✓	

19.3. Assessed Risk Level Within the Remainder of the Site

1st Line Defence has assessed that there is a **Low Risk** from German and anti-aircraft unexploded ordnance as well as a **Low Risk** from Allied unexploded ordnance within the remainder of the site proposed works. See a risk map of the site area presented within **Annex P3.**

Ordnance Type	Risk Level			
	Negligible	Low	Medium	High
German Unexploded HE Bombs		✓		
German 1kg Incendiary Bombs		✓		
Anti-Aircraft Artillery Projectiles		✓		
Allied Land Service and Small Arms Ammunition		✓		
Allied Practice Bombs		✓		

Please note – although the risk from unexploded ordnance within certain areas of the site has been assessed as 'Low', this does not mean there is 'no' risk of encountering UXO. This report has been undertaken with due diligence, and all reasonable care has been taken to access and analyse relevant historical information. By necessity, when dealing historical evidence, and when making assessments of UXO risk, various assumptions have to be made which we have discussed and justified throughout this report. Our reports take a common-sense and practical approach to the assessment of risk, and we strive to be reasonable and pragmatic in our conclusions.

It should however be stressed that if any suspect items are encountered during the proposed works, 1st Line Defence should be contacted for advice/assistance, and to re-assess the risk where necessary. The mitigation measures outlined in the next section are recommended as a minimum precaution to alert ground personnel to the history of the site, what to look out for, and what measures to take in the event that a suspect item is encountered. It should also be noted that the conclusions of this report are based on the scope of works outlined in the 'Proposed Works' section of this report. Should the scope of works change or additional works be proposed, 1st Line Defence should be contacted to re-evaluate the risk.

20. Proposed Risk Mitigation Methodology

20.1. General

The following risk mitigation measures are recommended to support the proposed works at RAF Heyford, Oxfordshire:

Type of Work	Recommended Mitigation Measure
All Works	• **UXO Risk Management Plan** It is recommended that a site-specific plan for the management of UXO risk be written for this site. This plan should be kept on site and be referred to in the event that a suspect item of UXO is encountered at any stage of the project. It should detail the steps to be taken in the event of such a discovery, considering elements such as communication, raising the alarm, nominated responsible persons etc. Contact 1st Line Defence for help/more information. • **Site Specific UXO Awareness Briefings to all personnel conducting intrusive works.** As a minimum precaution, all personnel working on the site should be briefed on the basic identification of UXO and what to do in the event of encountering a suspect item. This should in the first instance be undertaken by a UXO Specialist. Posters and information on the risk of UXO can be held in the site office for reference.
Shallow Intrusive Works/Open Excavations in Medium Risk Areas	• **A Non-Intrusive UXO Magnetometer Survey** A Non-Intrusive survey is undertaken using a man-portable magnetometer. Data is recorded and then interpreted to map magnetic fields and model discrete magnetic anomalies which may show the characteristics of UXO. The anomalies can then be investigated by a target investigation team. Where this type of survey is not practical (due to for example terrain or ground conditions), on-site UXO specialist support is recommended. • **Unexploded Ordnance (UXO) Specialist Presence on Site to support shallow intrusive works** When on site the role of the UXO Specialist would include: • Monitoring works using visual recognition and instrumentation, including immediate response to reports of suspicious objects or suspected items of ordnance that have been recovered by the ground workers on site. • Providing UXO awareness briefings to any uninformed staff and advise staff of the need to modify working practices to take account of the ordnance risk. • To aid incident management which would involve liaison with the local authorities and police should ordnance be identified and present an explosive hazard.
Borehole/Piles in Medium Risk Areas	• **Intrusive Magnetometer Survey of all borehole and pile locations down to a maximum bomb penetration depth:** 1st Line Defence can deploy a range of intrusive magnetometer techniques to clear pile locations. The appropriate technique is influenced by a number of factors, but most importantly the site's ground conditions. The appropriate survey methodology would be confirmed once the enabling works have been completed.

In making this assessment and recommending these risk mitigation measures, if known, the works outlined in the 'Scope of the Proposed Works' section were considered. Should the planned works be modified or additional intrusive engineering works be considered, 1st Line Defence should be consulted to see if a re-assessment of the risk or mitigation recommendations is necessary.

1st Line Defence Limited **24/08/2021**

This Report has been produced in compliance with the Construction Industry Research and Information Association (CIRIA) C681 guidelines for the writing of Detailed UXO Risk Assessments.

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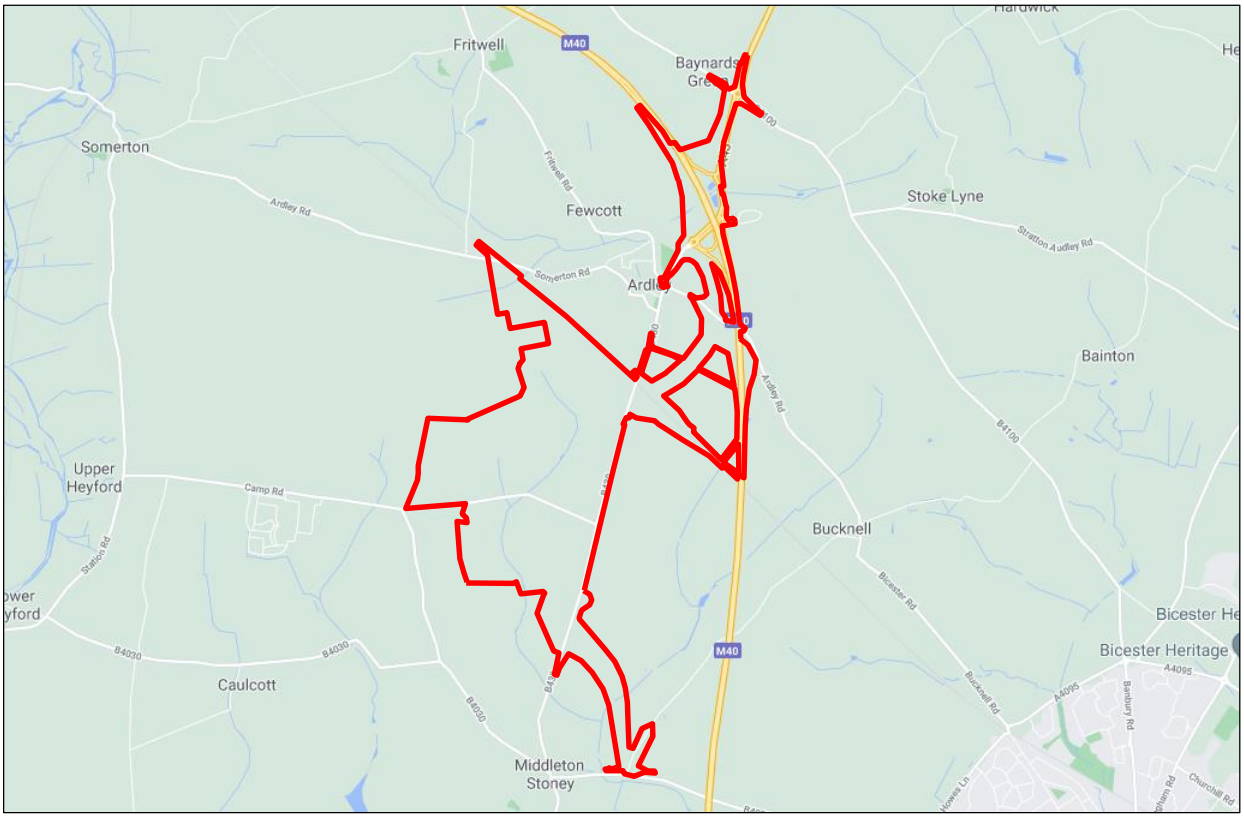
This report has been prepared by 1st Line Defence Limited with all reasonable care and skill. The report contains historical data and information from third party sources. 1st Line Defence Limited has sought to verify the accuracy and comprehensiveness of this information where possible but cannot be held accountable for any inherent errors. Furthermore, whilst every reasonable effort has been made to locate and access all relevant historical information, 1st Line Defence cannot be held responsible for any changes to risk level or mitigation recommendations resulting from documentation or other information which may come to light at a later date.

Site Location Maps

Annex: **A**



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Client: **BWB Consulting Limited**

Project: **RAF Heyford**

Ref: **DA13850-00**

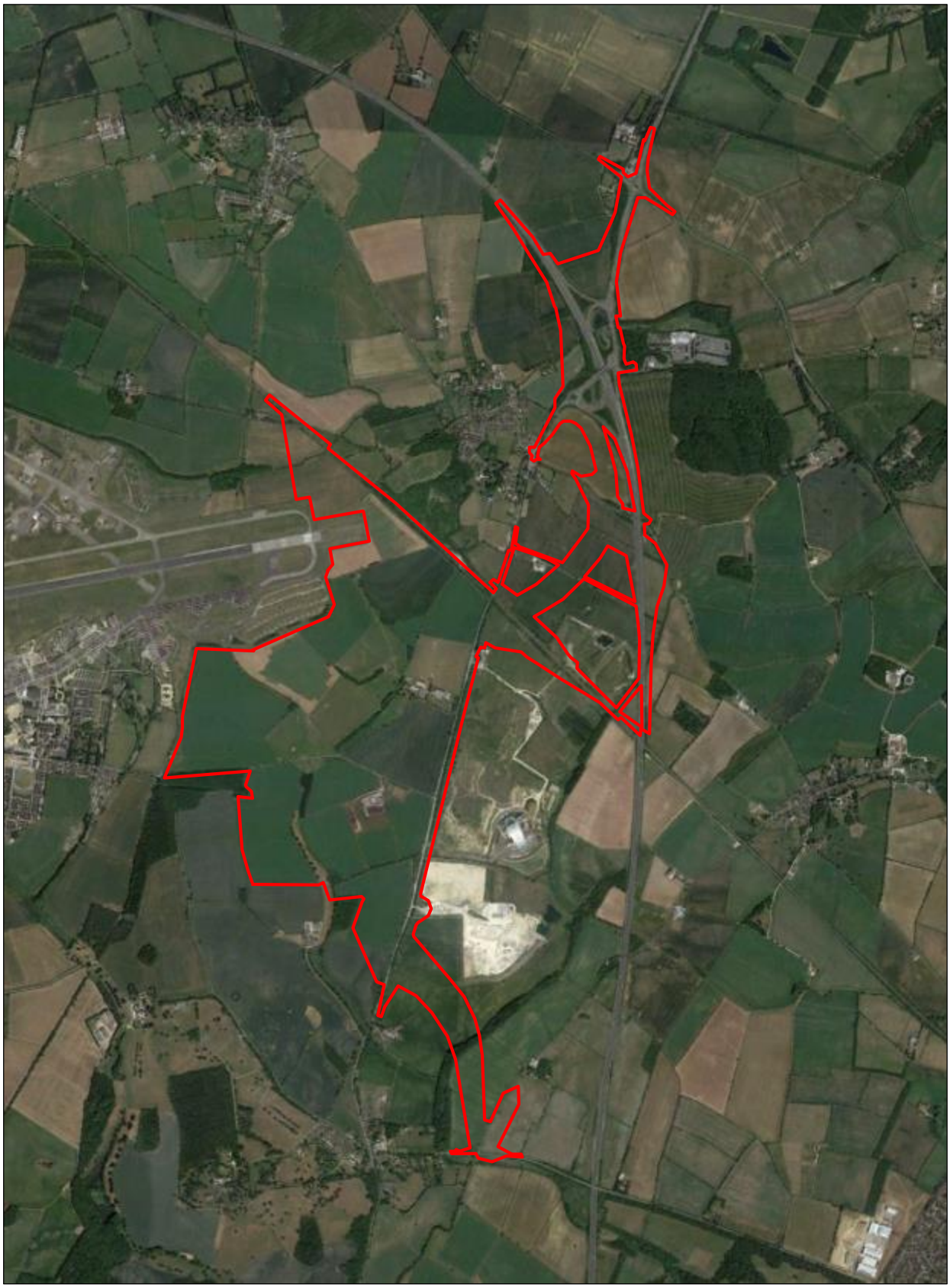
Source: Google Maps

Approximate site boundary

N

Recent Aerial Photography

Annex: **B**



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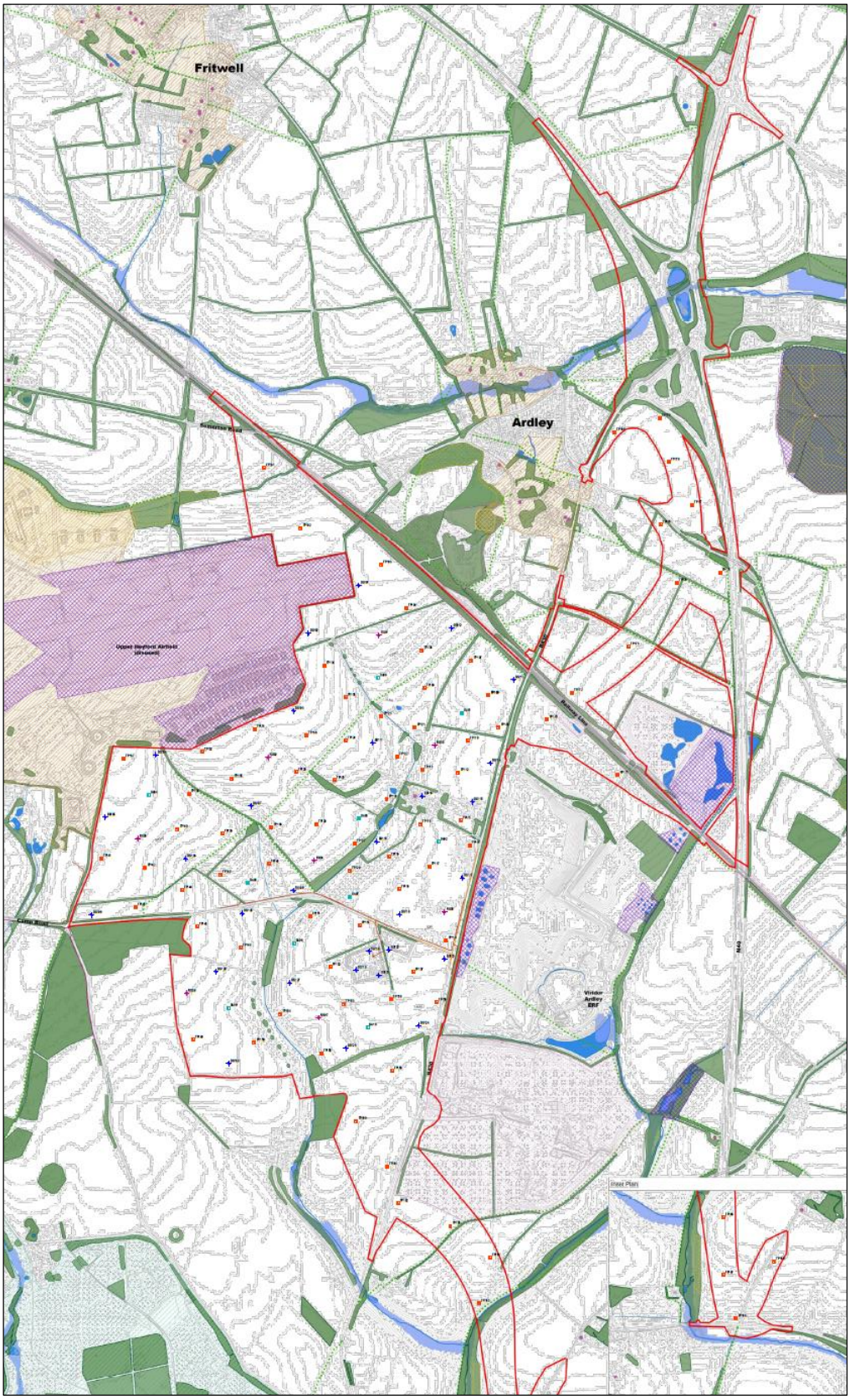
Project: **RAF Heyford**

Ref: **DA13850-00**

Source: Google Earth ™ Mapping Services

Client Provided Site Plan

Annex: **C**



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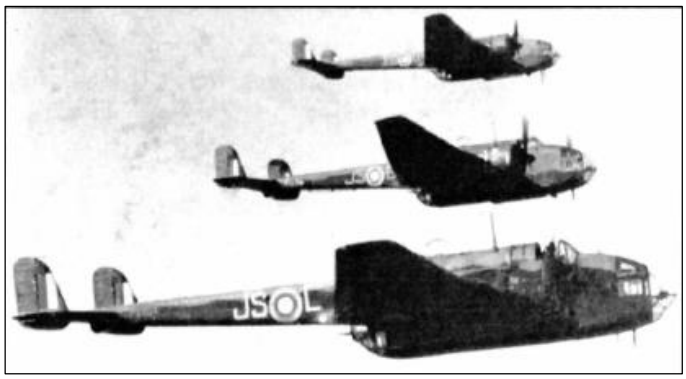
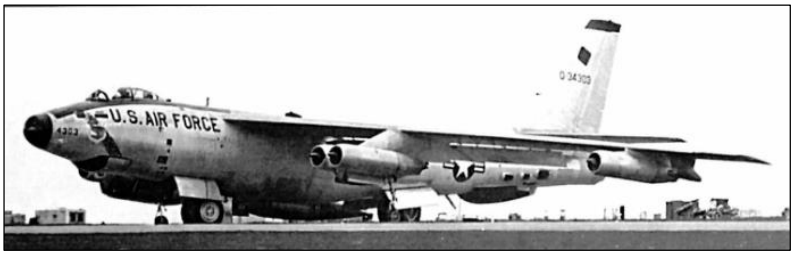


(Above) Handley-Page Hampden Mk.1's of 16 OTU Squadron, the nearest aircraft P5304 was later converted to a torpedo bomber.

RAF Upper Heyford was conceived during WWI and used as a base to train bomber crews before being assigned to their respective units. The airfield was also used throughout the inter-war period to develop new long-range navigational equipment for aircraft, and its aircraft were used to test the effectiveness of the new radar stations.

With the outbreak of WWII the 70 Bomber Wing was formed at the airfield being equipped with Handley-Page Hampdens, Avro Ansons and later Vickers Wellingtons. Upper Heyford was mostly used as an Operational Training Unit of Bomber Command, which was tasked with training bomber crews whilst also participating in major raids over occupied Europe.

As WWII ended and the Cold war began, the USAF leased the airfield from the Ministry of Defence as part of the NATO (North Atlantic Treaty Organization) alliance in 1952, as well as three other airfields in the west of England; Brize Norton, Fairford and Greenham Common. Upper Heyford was given new runways, aprons and hard standings, as well as 170 new buildings such as the innovative nose-docking sheds that allowed maintenance of the new generation of US bombers, high off the ground.



(Above) A USAF B47 bomber 0-34303 of USAF Strategic Air Command based at Upper Heyford.

(Above) A USAF RF-101C interceptor of the 20th Tactical Fighter Wing being refuelled at Upper Heyford.

The USAF's Strategic Air Command (SAC) stationed B-47 bombers at Upper Heyford, which remained until 1965. Upper Heyford was also used by reconnaissance aircraft that gathered intelligence on Soviet radar and communications, and helped monitor Soviet nuclear tests. Air sampling was undertaken at very high altitudes over test sites to see what could be learned about the latest Soviet weapons.

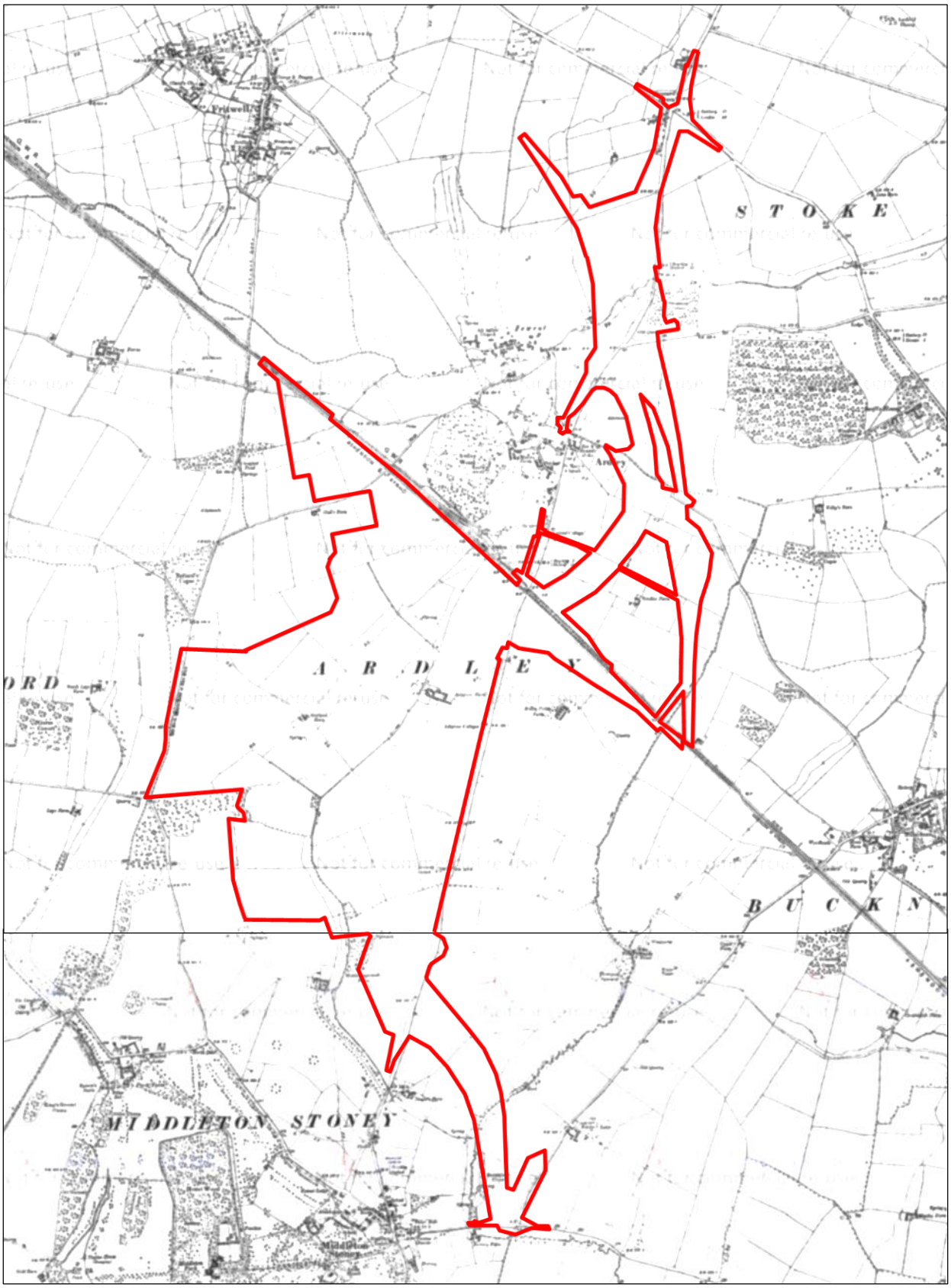
The 66th Tactical Reconnaissance Wing (TRW) took up residence with the RF-101C "Voodoo" until 1969. By the mid-1970's, the F-100's of the 20th Tactical Fighter Wing (TFW) arrived, but were replaced soon after by the F-111E, "Aardvark". Subsequent squadrons of EF-111A "Raven" were stationed at Upper Heyford and used in conjunction with their strike aircraft counterparts on bombing raids on Libya in 1986 and Iraq in 1991 as part of Operation Desert Storm.

(Above) A line of USAF F-111E 'Aardvark' multirole strike aircraft of the 20th Tactical Fighter Wing carrying the UH tail code for Upper Heyford.

The collapse of the USSR led to a US demobilisation of several airbases within the UK, and brought US occupancy and operations at Upper Heyford to a close in 1994.

Pre-WWII Historical Map 1923

Annex: **E1**



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Approximate site boundary

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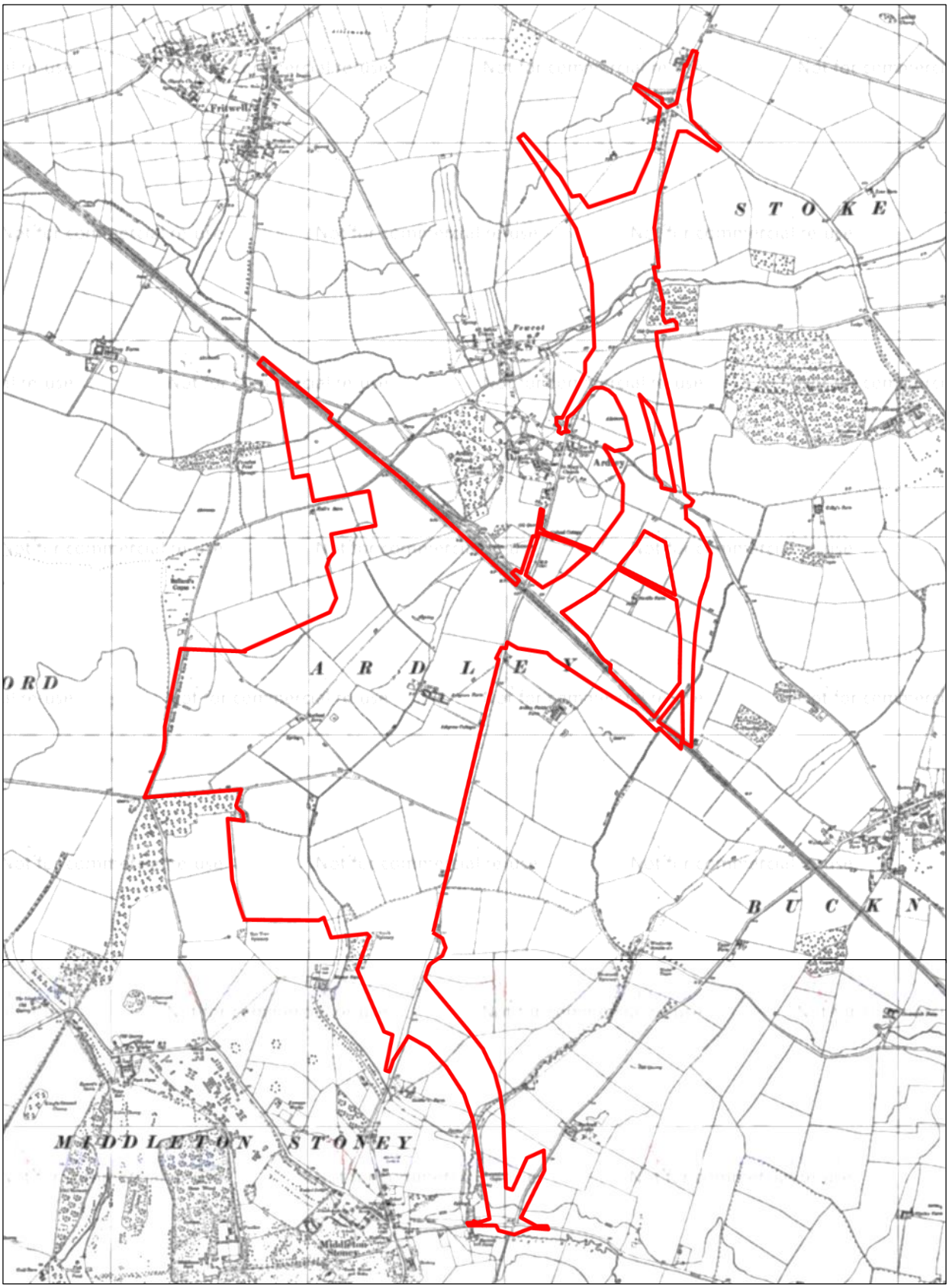
Project: **RAF Heyford**

Ref: **DA13850-00**

Source: Landmark Maps

Post-WWII Historical Map 1955

Annex: **E2**



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Client: **BWB Consulting Limited**

Approximate site boundary

Project: **RAF Heyford**

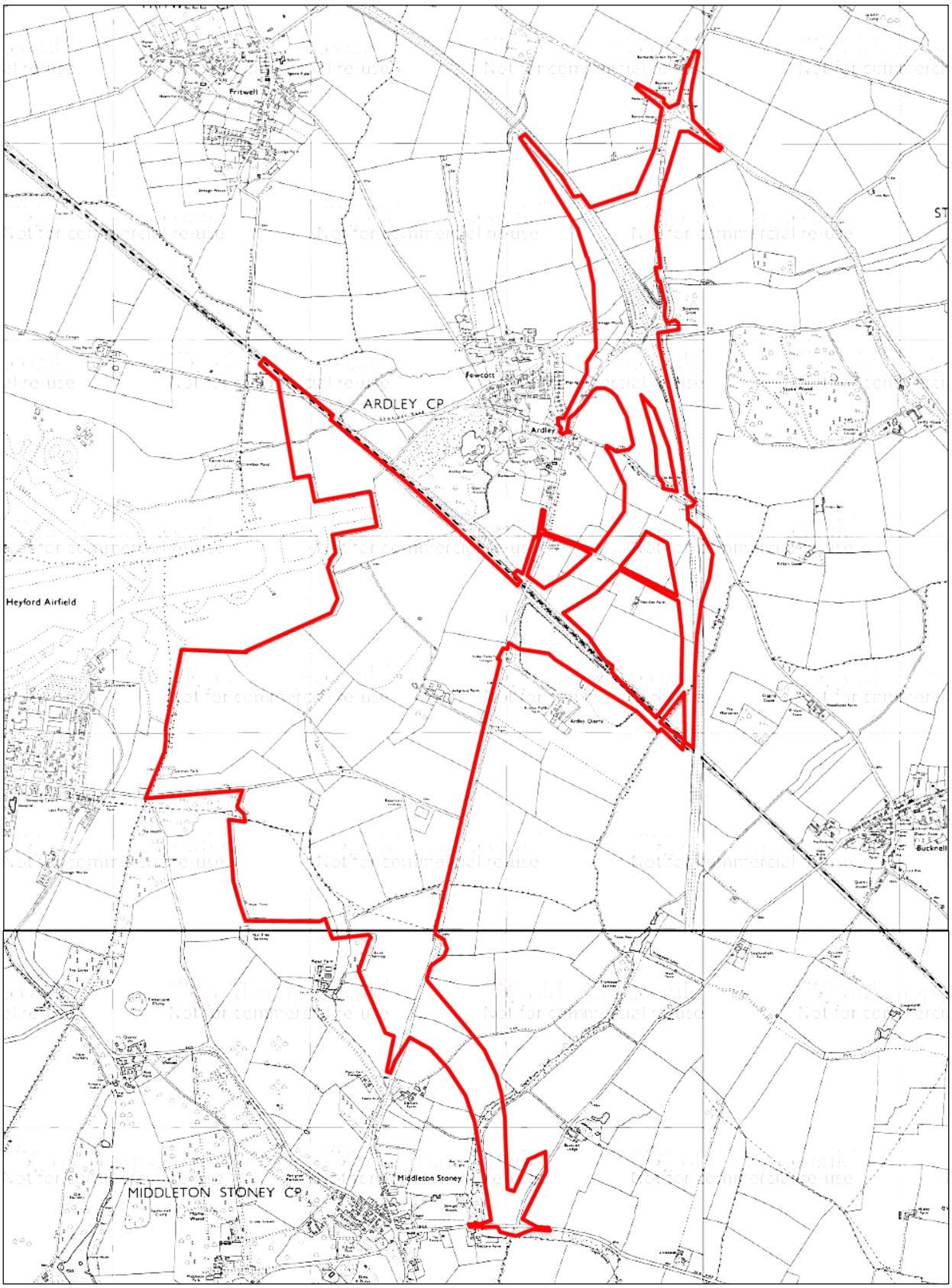
N

Ref: **DA13850-00**

Source: Landmark Maps

Post-WWII Historical Map 1979 - 1993

Annex: **E3**



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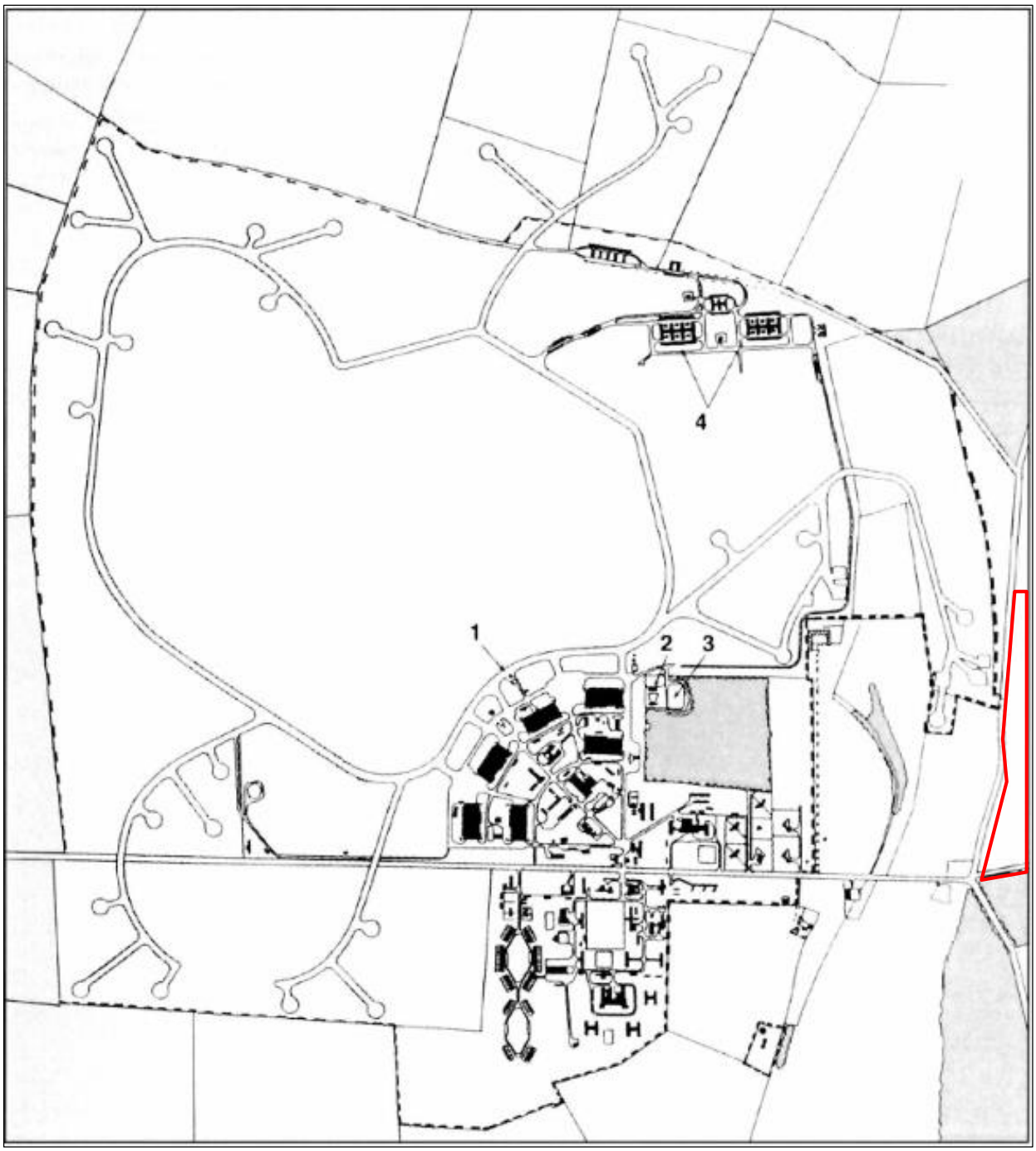
Approximate site boundary

N

Project: **RAF Heyford**

Ref: **DA13850-00**

Source: Landmark Maps



Upper Heyford 1942 – Showing the perimeter track and early 'frying pan' dispersals.

1. Flying Control
2. Machine Gun Range
3. Bulk Fuel Tanks
4. Bomb Dump

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Approximate site boundary

N

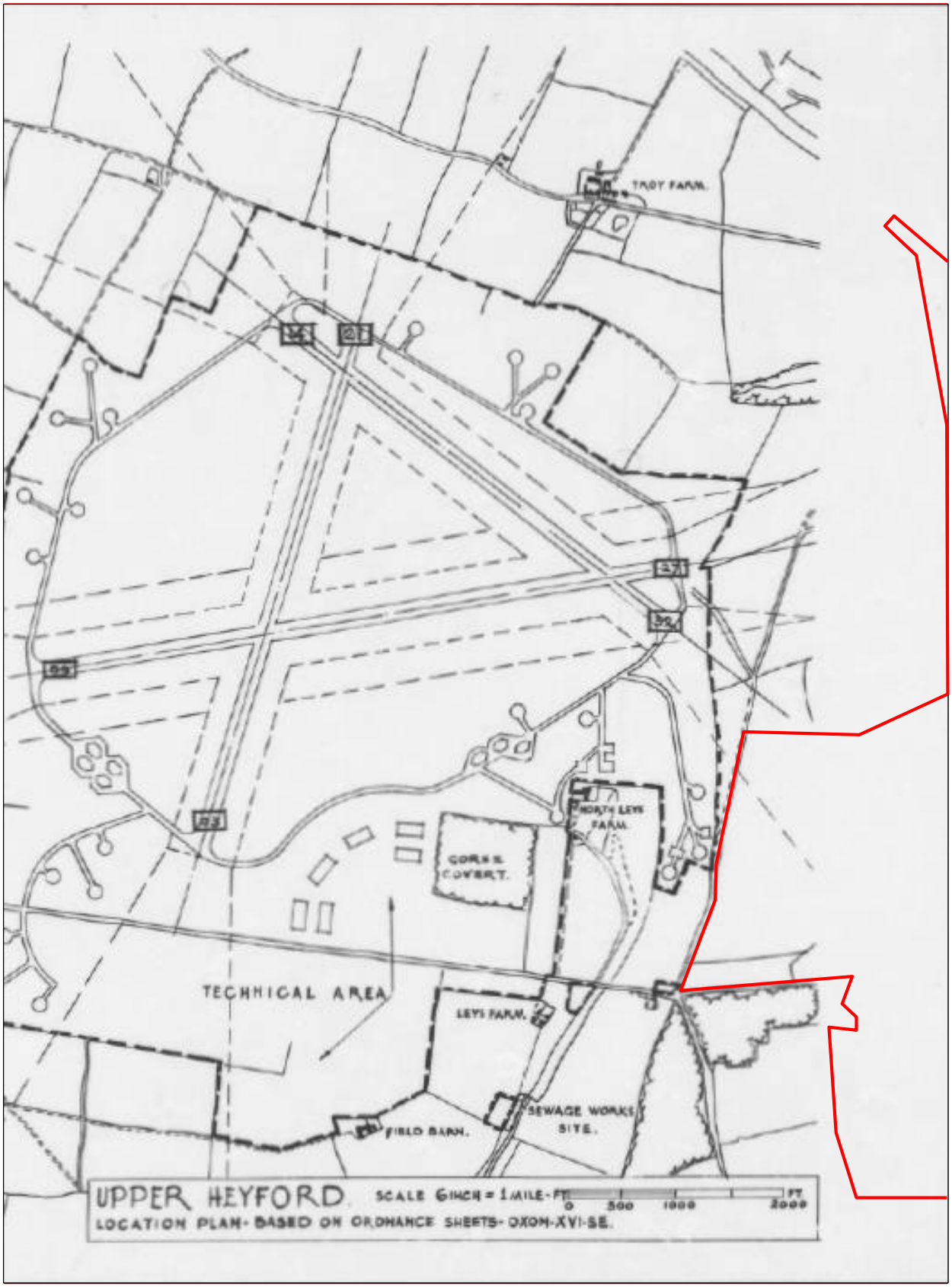
Project: **RAF Heyford**

Ref: **DA13850-00**

Source: Airfield Focus: Upper Heyford

WWII-era RAF Site Plans 1945

Annex: **F2**



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Approximate site boundary

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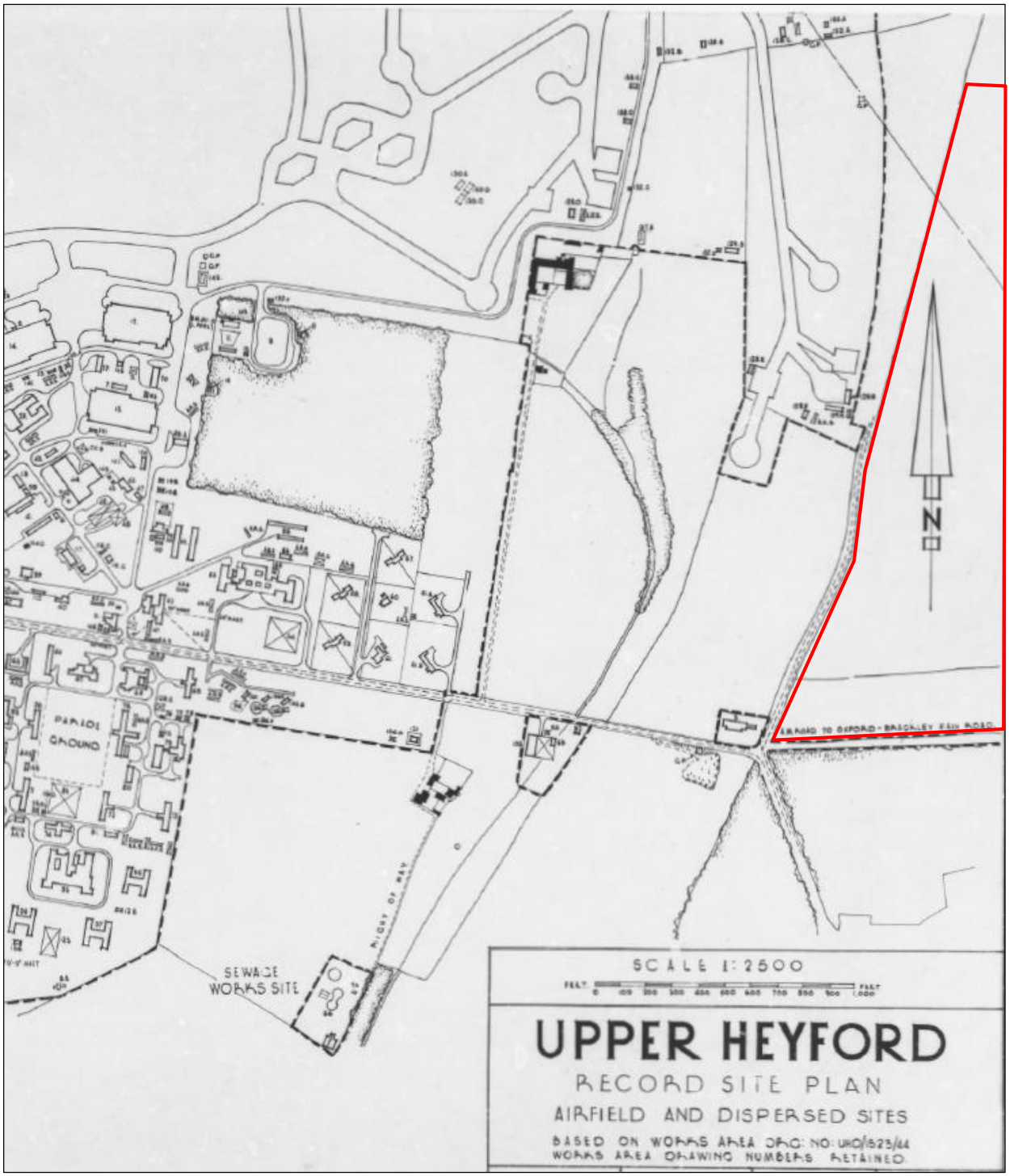
Project: **RAF Heyford**

Ref: **DA13850-00**

Source: RAF Hendon



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N

Ref: **DA13850-00**

Source: RAF Hendon

NUMBER	BUILDING	TYPE	CONSTRN.	A.M. DRG. NO.
	AIRFIELD SITE			
1.	FLAGSTAFF.			
2.	RADAR WORKSHOP		S.E.C.O.	6211/45
3.	GYMNASIUM & CHAPEL	—	T.B.	14006-16428/40
4.	NIGHT FLYING CANTEEN.	60 X 18. HUT	WOOD	LOCAL DESIGN.
5.	HIGH BEACON CONTROL ROOM	—	T.B.	880/478/51
6.	WAAF REST ROOM.		HISSEN	HEY/74/42
7.	LECTURE HUT.	60 X 18.	WOOD	HEY/30/1
8.	GAS CHAMBER.		CORRUGN.	1426/32
9.	AVIATION PETROL INSTALLATION.	72000 gells:	—	201/37
10.	PRACTICE BOMB STORE.	—	CORR. IRON	T.P./643/32
11.	N.C. RANGE.	—	—	98/26-1157/25
12.	AIRCRAFT SHED & ANNEXES.	"A"	—	15565-1566-1567/36 [illegible]
13.	AIRCRAFT SHED & ANNEXES.	"A"		420/25
14.	DO. DO. DO.	DO.	—	DO.
15.	DO. DO. DO.	DO.	—	[illegible]
16.	DO. DO. DO.	DO	—	DO. DO.
17.	DO. DO. DO.	DO	—	420/25.
18.	AMMO: STORE. GROUP XII.	—	BRICK	362/31.
19.	PETROL TANKER SHED.	6 BAYS	P.B.	2773/34.
20.	DO. DO. DO.	DO.	DO.	DO.
20.A	DO. DO. DO.	4 BAYS.		2890/35.
21.	R.U. PYRO STORE.	—	P.B.	1023/30.
22.	ENGINE TEST HOUSE.	—	P.B.	702/26 [illegible]
23.	TECHNICAL LATRINE	—	P.B.	732/25
24.	DO. DO.	—	DO.	DO.
25.	N.C. TEST BUTT.	—	CONCRETE	664/25-230-634/26
26.	OLD WATCH OFFICE & FLARE TROLLEY SHELTER.	—	BRICK	2072/26 [illegible]
27.	FIRE TENDER SHELTER.	—	T.B.	79/3850/40
28.	WORKSHOPS & CINEMA.	—	P.B.	[illegible] HEY/76/42
29.	R.U. PYRO STORE.	—	P.B.	1023/30
30	DO. DO.	—	DO.	DO
31.	ARMOURY & LECTURE ROOM.	60 X 18	WOOD	[illegible]
32.	LINK TRAINER HUT (USED AS CAMERA ROOM)	—	WOOD	[illegible]/3238/37.
33.	A.M.L. TEACHER & LATRINE.	—	P.B.	5127/40
34.	M.T. OFFICE. (DISUSED)	—	WOOD	226/28.
35.	DO ENCLOSURE.	—	—	DO.
36.	CRUDE OIL INSTALLATION.	4,000 galls:	—	1505/24
37	DOWZE HOUSE.	—	P.B.	1380/24-755/25
38.	40' H.L. WATER TOWER.	30,000 galls:	CONCRETE	1175/25-2260/25
39.	RESERVOIR.	100,000 galls:	P.B.	7031/4/23-1003/25
40.	FIRE PARTY HOUSE. (WOOD REST HUT ADDED)	—	P.B.	2545/26
41.	M.T. SHEDS.	—	P.B.	1929/26-4018/37
42.	M.T. PETROL. 2 PUMPS.	6,000 galls:	—	349/27-643/27
43.	PARACHUTE STORE.	—	P.B.	2355/25
44.	MAIN STORES & CHURCH.	—	P.B.	[illegible]
45.	SUB. OIL INSTALLATION.	4,000 galls:	—	753/31-752/28-178/32
46.	LUBRICANT STORE.	—	P.B.	329/26-48/26
47.	INFLAMMABLES STORE.	—	P.B.	" "
48.	FUEL STORES.	—	—	551/25-UHD/910/A/30
49.	WORKS SERVICES BUILDING.	—	—	1183/27-1184/27.
50.	M.T. DETROL PUMP. (P.S.I.)	500 galls:	—	—
51.	GUARD HOUSE & POST OFFICE.	—	P.B.	1309/24-2607/37
52.	STATION OFFICES & OPERATIONS BLOCK.	—	P.B.	[illegible]
53.	OFFICERS MESS & SINGLE QUARTERS.	—	P.B.	[illegible]
54	DO TENNIS COURTS.	—	—	447/27.
55.	SQUASH COURT.	—	P.B.	2/30.
56.	OFFICERS GARAGES. (P.S.I.)	—	WOOD	—
57.	MARRIED OFFICERS' QUARTERS. GROUP VI.	—	P.B.	[illegible]
58	DO. DO. DO. DO.	—	DO.	DO. DO.
59	DO. DO. DO. DO.	—	DO.	DO DO.
60	MARRIED OFFICERS' QUARTERS. GROUP III	—	P.B.	1775/24-1434/25
61	DO. DO. DO. GROUP II	—	P.B.	[illegible]
61.A	DO. DO. DO. GROUP IV	—	P.B.	360/39
61.B	DO. DO. DO. DO.	—	P.B.	DO.
122.	CENTRAL HEATING STATION.	—	P.B.	6217/39
123.	W.A.A.F. ABLUTIONS & LATRINE. (3 NO)	—	T.B.	15047/41
123.A.	DO. BATH HOUSE.	—	T.B.	12861/41
124	SERGEANTS TENNIS COURT.	—	T.B.	—
125	A/M. DO	—	—	—
126	BOILER HOUSE. (DISUSED)	—	CORR. IRON	—
127.A	W.A.A.F. BARRACKS.	—	NISSEN.	—
127.B.		—		
127.C.		—		
127.D.		—		
127.E.		—		
127.F.		—		
127.G.		—		
127.H.	DO.	—	DO.	—
127.I.		—		
127.J.		—		
127.K.		—		
127.L.		—		
127.M.	DO.	—	DO.	—
127.N	DO.	—	DO.	—
127.O.	DO.	—	DO.	—
127.P.	DO.	—	DO.	—
128.A.	G.P. HUTS.	—	NISSEN.	—
128.B.	DO.	—	DO.	—
128.C.	DO.	—	DO.	—
128.D.	DO.	—	DO.	—
128.E.	DO.	—	DO.	—
128.F.	DO.	—	DO.	—
128.G.	DO.	—	DO.	—
128.H.	DO.	—	DO.	—
128.I.	DO.	—	DO.	—
128.J.	DO.	—	DO.	—
128.K.	DO.	—	DO.	—
129.A.	G.P. HUTS.	—	LAING.	—
129.B.	DO.	—	DO.	—
130.A.	[illegible]TING OF G.P. HUT.	—	NISSEN.	—
130.B.	DO.	—	DO.	—
130.C.	DO	—	DO.	—
130.D.	DO.	—	DO.	—
130.E.	DO.	—	DO.	—
131.A.	G.P. HUT (TO BE REMOVED)	—	NISSEN.	—
131.B.	DO.	—	DO.	—
131.C.	DO.	—	DO.	—
131.D.	DO.	—	DO.	—
132.A.	LATRINES TO G.P. HUTS.	—	—	—
132.B.	DO.	—	—	—
132.C.	DO.	—	—	—
132.D.	DO.	—	—	—
132.E.	DO.	—	—	—
132.F.	DO.	—	—	—
132.G.	DO.	—	—	—
132.H.	DO.	—	—	—
133.A.	GAS CLOTHING HUT.	—	STEEL.	UHD/1130/44
133.B	DO.	—	DO.	DO.
134.A.	M.E.E. PLINTHS.	—	—	—
134.B.	DO.	—	—	—
134.C.	DO.	—	—	—
134.D.	DO.	—	—	—
134.E.	DO.	—	—	—
134.F.	DO.	—	—	—
135.	BLIND APPROACH BEACON (TO BE REMOVED)	—	WOOD	—
136	C.H.T. BUILDING (2 NO)	—	ASBESTOS	11508-7/42: 360/43
137.A.	OIL TRAPS.	—	—	UHD/1130/44.
137.B.	DO.	—	—	DO
138.A.	S.A.A. STORES.	—	T.B.	—
138.B.	DO.	—	T.B.	—
138.C.	DO.	—	T.B.	—
138.D.	DO.	—	T.B.	—
139.A.	R.E. & SURVEYOR'S OFFICES & LATRINES.	—	2ND. LAINGS.	—

NUMBER	BUILDING	TYPE	CONSTRN.	A.M. DRG. NO.
62.	INCINERATOR.	—	BRICK.	1430/27.
63.	PUMP HOUSE WELL.	—	BRICK.	1008/26.
64.	SEWAGE WORKS & TOOL SHED.	—	—	48/25-UHD/3942/31
65.	AIRMEN'S GARAGES (P.S.I.)	—	—	—
66.	SERGEANTS SINGLE QUARTERS. (FOR 50)	—	P.B.	1551/25-1258/27
67.	DO. DO. DO. (FOR 26)	—	P.B.	151/24-CE/350/30
68.	DO. MESS. (FOR 119)	—	P.B.	1376/37
69.	BARRACK BLOCK. 3 K.C.O. 64 A/M.	"C"	P.B.	640/22-466/25 104/23-150/25.
70.	DO. DO. DO.	"C"	P.B.	DO. DO.
71.	DO. DO. DO.	"C"	P.B.	DO. DO.
72.	DO. DO. DO.	"C"	P.B.	DO. DO.
73.	DO. DO. DO.	"C"	P.B.	DO. DO.
74.	DO. DO. 3.K.C.O. - 56 A/M.	"B"	P.B.	5826-3/37
75.	DO DO. 2/48. (OLD DINING ROOMS)	—	P.B.	1161/37.
76.	E.T. ROOM.	—	P.B.	1400/27.
77.	DISINFECTOR HOUSE.	—	P.B.	1067/29.
78.	MORTUARY	—	P.B.	581/25.
79.	SICK QUARTERS & DECONTAM:	—	P.B.	7503/27-27/29-106/23.
80.	RATION STORE & SHOPS.	—	P.B.	2151/25
81.	AIRMEN'S GARAGE. (P.S.I.)	—	WOOD.	—
82.	DO. DO.	—	DO.	—
83.	DO. TENNIS COURTS.			
84.	W/T & R/T STATION.	—	P.B.	1327/25-556/27 1548/25.
85.	SPORTS PAVILION	—	WOOD	441/28.
86.	MARRIED A/M QUARTERS. (44 NO) 6 BLOCKS A-F.	—	P.B.	[illegible]
87.	W.O.'S QUARTERS (4 NO) 2 BLOCKS - A-B.	—	P.B.	670/26-442-3/22.
88.	ENGINEERS QUARTERS.	—	P.B.	648/30.
89.	COMPASS PLATFORM.	50'-0" dia:	—	2182/29.
90.	HUT & LATRINES (ERECTED BY MIDLAND GRASS DRYING COMPANY)		CORR. IRON	—
91.	AVIATION PETROL INSTALLATION.	72,000 galls	—	1175/26-200/27.
92.	P.P.M.T. SHED.	—	CORR. IRON	2503/38-7005/39. 1859/40
93.	DECONTAMINATION BLOCK	—	P.B.	6224/37.
94	C.H.T. BUILDING. (SITE FOR)	—	—	—
95.	DINING ROOM & INSTITUTE.	800.	P.B.	5088/38-2522/39 [illegible]
96.	BARRACK BLOCKS 5/84.	—	P.B.	DO.
97.	DO. DO	—	P.B.	DO.
98.	DO. DO.	—	P.B.	DO.
99.	REST HUT.	40' X 18'	WOOD	LOCAL DESIGN.
100.	GAS DEFENCE CENTRE.	—	P.B.	5132/37.
101.	LATRINE.	—	—	175/35.
101.A	DO.	—	—	DO.
102.	LINK TRAINERS (2 NO:)	—	P.B.	7790/40.
103.	PROTECTED LONG BAY.	—	P.B.	6225/37
104.	WATCH OFFICE.	—	P.B.	518/40.
106.	R.F.E. STORE.	—	P.B.	5235/39.
106.	CAMOUFLAGE STORE ECT:	—	CORR. IRON	—
107.	MARRIED A/M QUARTERS (24 NO:) 4 BLOCKS A-D.	—	P.B.	2728-9/38.
108.	H.L. WATER TANK 40'-0" HIGH.	60,000 galls:	PRESSED STEEL	5000/41.
109.	STORE (PETROL)	—	T.B.	LOCAL DESIGN.
110.	WORKS SQUADS BLOCKS 2 TO STORES & 2 NISSEN	—	T.B. & NISSEN.	—
111.	TEMPORARY OFFICERS' QUARTERS.	—	W. HUTS.	4563/38.
112.	ARTICULATED TRAILER SHED.	—	P.B.	6879/37.
113.	AMBULANCE GARAGE.	—	P.B.	—
114.	GROCERY STORE. (NOW ANCILLARY S.Q.)	—	P.B.	14553/39.
115.	UNDERGROUND FIRE TANKS (4 NO:) A.D.	15,000 galls	—	7625/39.
116.	FIRE FIGHTING EQUIPMENT HUTS (3 NO:) A/C.D.	—	T.B.	4164/41.
117.	POWER HOUSE. 100 K.W. (2 GENERATORS)	—	P.B.	11507/38.
118.	LINK TRAINERS. DOUBLE.	—	P.B.	1762/39.
119.	PIGEON LOFT (P.S.I.)	—	—	—
120.A	STATIC WATER TANK.	25,000 galls	—	—
120.B.	DO. DO.	DO.	—	—
120.C.	DO. DO.	DO.	—	—
120.D.	DO. DO.	DO.	—	—
120.E.	DO. DO.	DO.	—	—
121.	SUB: STATION.		P.B.	7187/38.
140	WIND SOCK	—	—	—
141.	SUB. OIL INSTALLATION.	2500 galls.	—	8327/38
142.	PYRO STORE.	—	P.B.	1022/30
143	DETONATOR STORE.	—	CORR. IRON.	UHD/232/39
144	COOLING POND	—	—	1304/24
145	M.T. PETROL. (UNLOADED)	3,000 galls	—	—
146	D.R. LETTER SERVICE.	—	NISSEN.	LOCAL DESIGN.
147	CREW BRIEFING	60' X 18'	WOOD.	—
148	GAMES ROOM.	40' X 18'	WOOD.	—
149	BATTLE HEADQUARTERS.	—	P.B.	11006/41
150	OFFICE & STORE.	—	HANDCRAFT	—
151				
152				
153	PIG. STYS. (P.S.I.)	—	—	—
154	CONTRACTORS STORE.	—	NISSEN.	—
155	R.A.F. HUT.	—	WOOD	—
156	HANDCRAFT INSTRUCTION HUT.	—	NISSEN.	—
	WATER WORKS.			
	LAYOUT OF WORKS - SEE 6" TO 1 MILE. LOCATION.			5346/41

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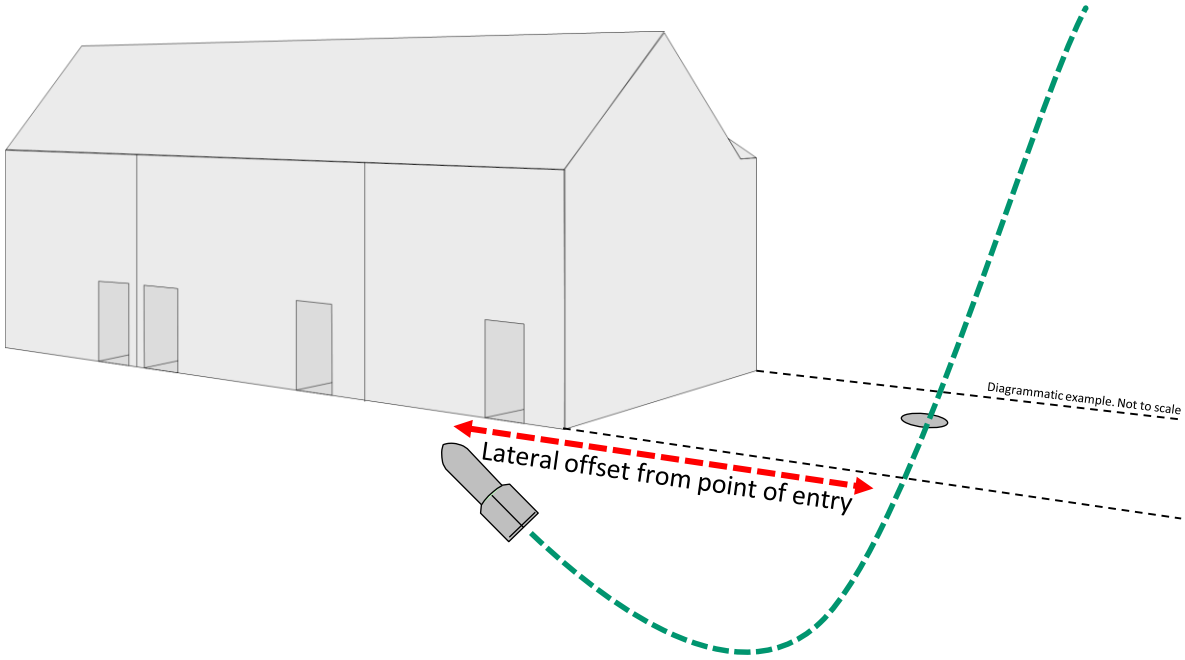
Ref: **DA13850-00**

Source: RAF Hendon

Example of UXO Entry Hole / The 'J-curve' Effect Principle

Annex: **G**



Top: J-curve Effect - Due to angle of entry, unexploded bombs would often end their trajectory at a lateral offset from point of entry, often ending up beneath adjacent extant structures/sites. The photograph above shows 250kg bomb found in Bermondsey pointing upwards, demonstrating 'J-curve'

One of the most common scenarios for UXO going unnoticed was when a UXB fell into a 'bomb site' (such as the area shown **Top Left**), the entry hole of the bomb obscured by any debris and rubble present. Note that the entry hole of a 50kg UXB could be as little as 20cm in diameter (**Left**).

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Source: Various sources

Recent Unexploded Bomb Finds, UK

Annex: **H1**

BBC NEWS

Bermondsey bomb: World War Two device safely removed

An unexploded World War Two bomb found in south London has been driven away safely under police and Army escort.

The 500lb (250kg) device was found on a building site in Grange Walk, Bermondsey on Monday.

March 2015

BBC NEWS

Bethnal Green WW2 bomb: Experts remove unexploded device

An unexploded World War Two bomb that prompted the evacuation of 700 people in east London has been made safe and removed by the military.

Families spent the night in a school hall after the 500lb bomb was found in the basement of a building site on Temple Street, in Bethnal Green, on Monday afternoon.

A 200m (650ft) exclusion zone was set up around the device.

August 2016

BBC NEWS

Bath WW2 bomb scare: Device defused, police say

A 500lb World War Two bomb found on the site of a former school in Bath has been defused and made safe.

The discovery of the bomb on Thursday **led to the evacuation of hundreds of homes** and many road closures in the Lansdown area of the city.

A cordon around the site was lifted on Friday evening, more than 24 hours after residents were asked to leave their homes.

May 2016

BBC NEWS

London City Airport reopens after WW2 bomb moved

London City Airport has reopened after an unexploded 500kg World War Two bomb was safely moved from the area.

The device was discovered at the King George V Dock on Sunday during planned work at the east London airport.

All flights were cancelled on Monday after an exclusion zone was put in place, **with the closure affecting up to 16,000 passengers and nearby residents being evacuated from their homes.**

May 2015

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Ref:	**DA13850-00**
Source:	BBC News

Examples of Unexpected Detonation of WWII Bombs

Annex: **H2**

BASF has confirmed that an explosive device, most likely a World War II-era bomb, caused the blast that left one person injured Tuesday at a plant construction site in Germany.

The explosion was reported at BASF's Ludwigshafen toluene diisocyanate (TDI) plant, which recently broke ground for a 300,000 metric tons per year TDI production plant and other construction to expand its facilities.

BASF Provides Some Details

Responding to a request from *PaintSquare News* for more information on Wednesday (Feb. 27), BASF's manager of media relations and corporate communications Europe, Ursula von Stetten, wrote in an email, "So here [are] the facts: The detonation took place at 10:00 a.m. One person was injured; the injury is not serious. He will be kept in the hospital for some days.

"Cause of the detonation was an explosive device, presumably a bomb deriving from the Second World War. The device detonated when grounding work was done. No details on [a] delay [are] available. At the moment, the exact circumstances of the incident are [being] evaluated."

1st March 2013

WWII bomb injures 17 at Hattingen construction site

Seventeen people were injured on Friday when a construction crew unwittingly detonated a buried World War II-era bomb in Hattingen.

An excavator apparently drove over a 250-kilogramme (550 pound) American bomb, damaging surrounding buildings. Most of the injured suffered auditory trauma from the blast, and the excavator operator suffered injuries to his hands, police in the German state of North Rhine-Westphalia said.

"The hole was astoundingly small for such a large bomb full of so many explosives," Armin Gebhard, head of the Arnsberg department for military ordnance removal, told The Local. "But of course it damaged all the surrounding buildings too. We are really happy it wasn't worse."

19th September 2013

SPIEGEL ONLINE

Blast Kills One

World War II Bomb Explodes on German Motorway

A highway construction worker in Germany accidentally struck an unexploded World War II bomb, causing an explosion which killed him and wrecked several passing cars.

A World War II bomb has exploded during construction work on a German highway, killing one worker and injuring several motorists who were driving past, police said.

The worker had been cutting through the road surface near the south-western town of Aschaffenburg when his machine struck the bomb and triggered it. Police said they weren't sure yet what type of bomb it was. "The explosion seems to have been too small for it to have been an aircraft bomb," a police spokesman said.

23rd October 2006

BBC NEWS

World War II bomb kills three in Germany

A special commission is investigating the causes of the explosion, while prosecutors are considering whether the team leader should face charges of manslaughter through culpable negligence, the BBC's Oana Lungescu reports from Berlin.

The blast happened an hour before the defusing operation was due to start.

Officials said the three men who died were experienced sappers, or combat engineers, who over 20 years had defused up to 700 bombs.

More than 7,000 people were immediately evacuated when the 500kg bomb was found. Several schools, a kindergarten and local companies remain closed.

2nd June 2010

June 2006

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Project: **RAF Heyford**

Ref: **DA13850-00**

Source: Various news sources

Examples of Land Service Ammunition finds in the UK

Annex: **H3**

Unexploded Second World War bomb discovered under Somerset footpath

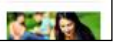
By Western Daily Press | Posted: January 21, 2014

The unexploded bomb was found in Somerset

Comments (0)

Report this article

An unexploded bomb dropped in Britain during the Second World War has finally been discovered – underneath a popular footpath in Somerset.



Unexploded WW2 bomb found at Kenfig Pool, Bridgend

23 August 2014 Last updated at 15:01

Share

Dean Smith believes the shell was made in Germany

Bomb experts have been called to a south Wales nature reserve after an unexploded World War Two shell was discovered by a walker in Bridgend.

Dean Smith, 38, of Pyle, was walking near Kenfig Pool on Saturday when he saw a fin sticking out of the sand.

He reached down to pick it up, but ending up falling and landed with the 2ft-long (0.6m) bomb on top of him.

The site has been cordoned off by police and the Royal Logistics Corps will carry out a controlled explosion.

Related Stories

'Panic' as dog nearly thrown grenade

WW2 bomb found at wind farm exploded

WWII bomb found in kitchen cupboard

Mortar thought to be from WWII found on Oshawa's Camp-X grounds

August 24, 2016 | 5:42 am

What is believed to be a World War II mortar has been discovered in south Oshawa. A man out in Intrepid Park, the site of the Camp-X Second World War training grounds, discovered the round with his metal detector on Tuesday evening. Durham police are held the scene overnight awaiting military officials from Trenton to come and properly detonate the mortar.

Holiday beach cordoned off after landslip sends more than a THOUSAND Second World War bombs and rockets tumbling onto the sands

- Bad weather led to ground movement which exposed the huge arsenal at Mappleton, East Riding
- A dog walker stumbled across the deadly find on Saturday and 15 controlled explosions were carried out
- Rockets, mortar bombs and 25-pounder bombs were recovered after they were fired into the cliffs by RAF aircraft during the war
- Most of the devices were dummy rounds used for bombing practice but contain enough explosives to cause terrible injuries

© Jonathan Pow

Bomb Beach Alley: Rockets were found after a landslide on Mappleton beach in 2012

Unexploded bomb found in farmer's field

17 May 2010

A live Second World War mortar shell was blown up by Army experts after a farmer found it in his field.

The discovery was made in the field alongside the A20 between Folkestone and Dover.

The mortar shell, which was around a foot long and 3in in diameter, was around 50ft from the main road.

The farmer alerted police and PC Trevor Moody and PCSO Michelle Brady went to the field.

PC Moody contacted the Army who sent in a bomb disposal unit.

An Army officer confirmed the live shell was from the Second World War and was packed with high explosives.

They moved it a safe distance away from the A20 and carried out a controlled explosion.

PC Moody said, "Given that we live in an area that saw much action during the Second World War, it is not uncommon for us to be alerted about unexploded bombs."

The incident was on Thursday.

Click here for more news from Kent.

Royal Navy bomb disposal experts remove a World War Two shell discovered in a nature reserve

- A World War Two bomb was discovered in a Plymouth nature reserve
- Amateur metal detector found the shell and partially dug it up
- Royal Navy experts carried the explosive away before disposing of it

By VALERIE EDWARDS FOR MAILONLINE
PUBLISHED: 01:29, 13 January 2016 | **UPDATED:** 09:51, 13 January 2016

Share 338 shares 10 View comments

A World War Two bomb was reportedly found at Efford Nature Reserve in Plymouth after a member of the public was metal detecting and partially dug it up.

The Royal Navy Bomb Disposal team was called in to remove the bomb and police have closed off Military Lane, with the possibility of Military Road also being closed.

Police were called at around 1.30pm yesterday after what appeared to be a shell was discovered and partially dug up near Military Lane, Efford.

Army bomb disposal team called to Blacksole Bridge in Herne Bay

by Aidan Barlow abarlow@thekmgroup.co.uk 08 July 2015

It was like a scene from Dad's Army when Army bomb disposal experts found wartime explosives made by the Home Guard in makeshift bottles.

A team was called to the Blacksole Bridge in Herne Bay after the wartime bombs were found.

The team from the Royal Logistics Corps set up a 30 metre exclusion zone for pedestrians around the railway embankment after the suspected homemade phosphorous bombs were found.

The scene at Blacksole Bridge after wartime explosives were found in the railway cutting

Tweet

Published by How Oxburgh

Unexploded bomb found in Axminster

Update: The bomb disposal unit has made the device safe and the road has re-opened.

Six homes have been evacuated today after the discovery of an unexploded device in Axminster.

A Royal Navy bomb disposal team have been called to the scene after a 'historic German device' was discovered in a garden.

Police have set up a 20m cordon around the garden in Alexandra Road and evacuated homes in the surrounding area as a precaution.

Storms and floods unearth unexploded wartime bombs

By Claire Marshall
BBC environment correspondent

There has been a dramatic increase in the number of wartime bombs unearthed because of the winter storms and flooding.

Bomb disposal teams in the South West have dealt with double the number of unexploded ordnance than in the same period last year.

Since mid December, the Royal Navy's Southern Dive Unit has recovered or disposed of 244 items of ordnance.

During the same period last year, they dealt with just 108 items.

The storms have uncovered a lethal past

Almost 70 years after the end of WWII, one legacy of that conflict continues to turn up on beaches and harbours around Britain.

Unexploded shells, bombs and mines continue to be discovered every year, and the Royal Navy's Southern Dive Unit is tasked with making these devices safe.

Its area of responsibility stretches for some 2,250km (1,400 miles). It begins from the highwater mark in Hull and proceeds seaward to the territorial limit, and then runs clockwise around the British Isles - including the Isle of Wight, Channel Islands, and Isles of Scilly - to finish in Liverpool.

Related Stories

Ancient trees revealed by storms

Land Service Ammunition (LSA) resulting from historic military activity is commonly encountered across the UK by the public and construction industry alike. Such finds are much more common in rural areas than in urban environments, and can often be anticipated in areas such as former RAF stations or ranges. However, many such items are encountered entirely by surprise where the landowner or developer has no knowledge of any previous military use of the land.

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Project:	**RAF Heyford**
Ref:	**DA13850-00**
Source:	Various news sources

Oxford Mail

News

3rd April 2019

'Unexploded bomb' Upper Heyford: Cordon lifted

POLICE have lifted a cordon in a village near Bicester after safely removing two unexploded bombs.

Both devices have been safely removed and all police units have now left the scene.

The local school, Heyford Park Free School, was not evacuated, but the public were being urged to avoid the Upper Heyford area earlier.

The Explosive Ordance Disposal team arrived at a building site on the former RAF Upper Heyford earlier today, with Camp Road cordoned off.

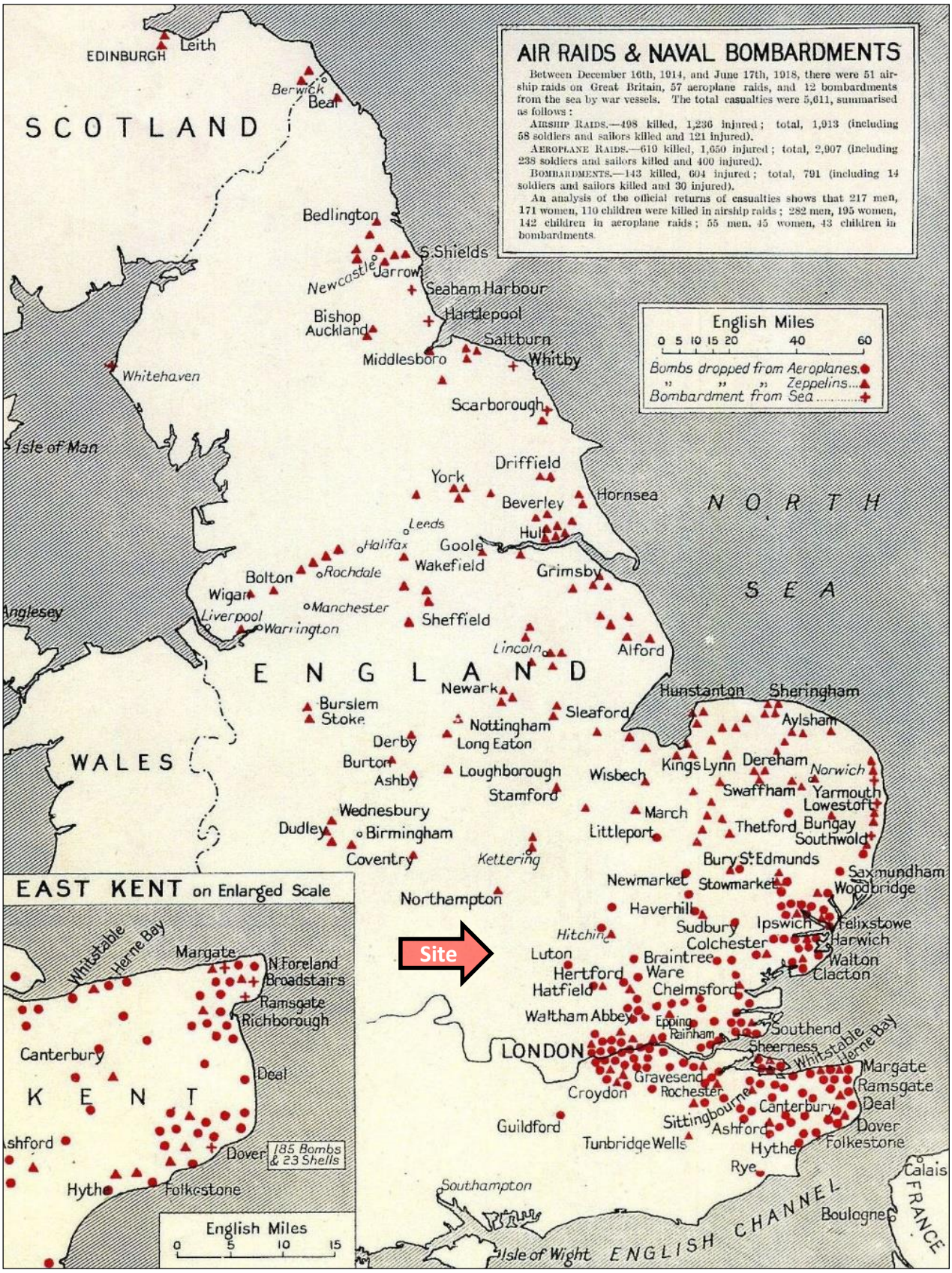
The area has now reopened and police say there is 'no danger' to the public.

One device was safely disposed of yesterday, before a second bomb was discovered.

Thames Travel said last night that Camp Road had been closed, with witnesses suggesting a bomb disposal unit was on the scene.

WWI Map of Air Raids and Naval Bombardments

Annex: I



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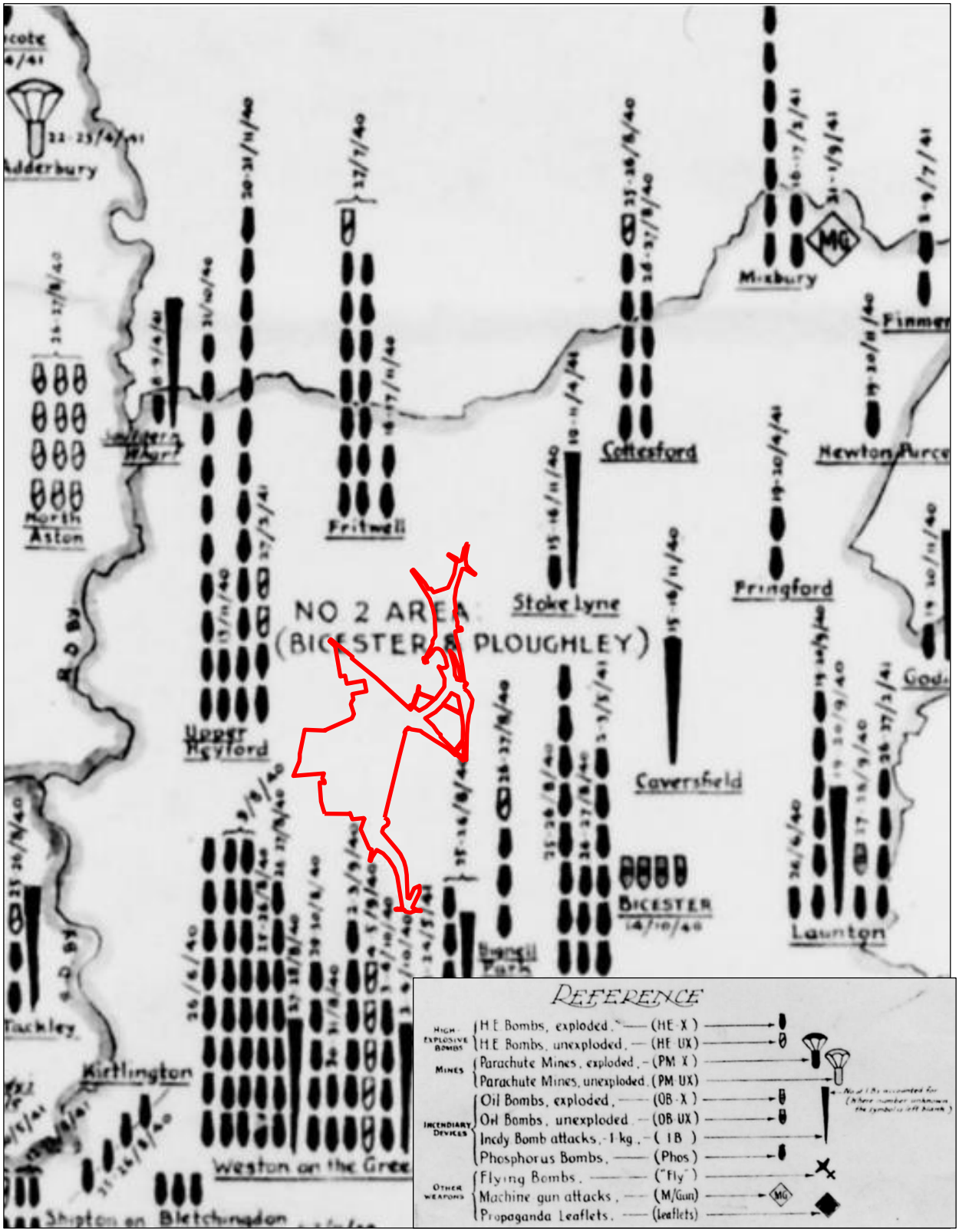
Source: J. Morris, *German Air Raids on Britain*

N

Oxfordshire Bomb Map

Annex: J



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Approximate site boundary

Project: **RAF Heyford**

Ref: **DA13850-00**

Source: Centre for Oxfordshire Studies

N

21st October 1940

Where dropped HEYFORD AERODROME.

Remarks. 8 H.E. were dropped on the flying ground and 2 in a field adjoining. The line of bombs was from north to south.

13th November 1940

Where dropped HEYFORD.

Remarks. These bombs dropped on the R.A.F. Station, Upper Heyford, near the bomb dump. Flying debris caused slight damage to two Hampden Bombers and a concrete mixer. This 'plane later crashed at Upton, near Didcot, the three occupants being arrested and detained at Didcot Police Station.

20th/21st November 1940

UPPER HEYFORD (12 H.E. 1 DAB and large number of I.B. at 2100/20)

Remarks. Upper Heyford. These bombs were dropped in two lines running from north to south, separated by about half a mile of open country. The last bomb made a direct hit on a house, but the occupant had a miraculous escape, crawling from under debris uninjured. Three of the I.B.'s fell on the aerodrome landing ground, but caused no damage. One fell on the thatched roof of a barn setting fire to the thatch, but this was soon extinguished by local people. The DAB later exploded.

Upper Heyford. Cottage demolished and next door cottage badly cracked.

27 February 1941

HEYFORD (2 H.E. and 2 UXB at 1052/27).

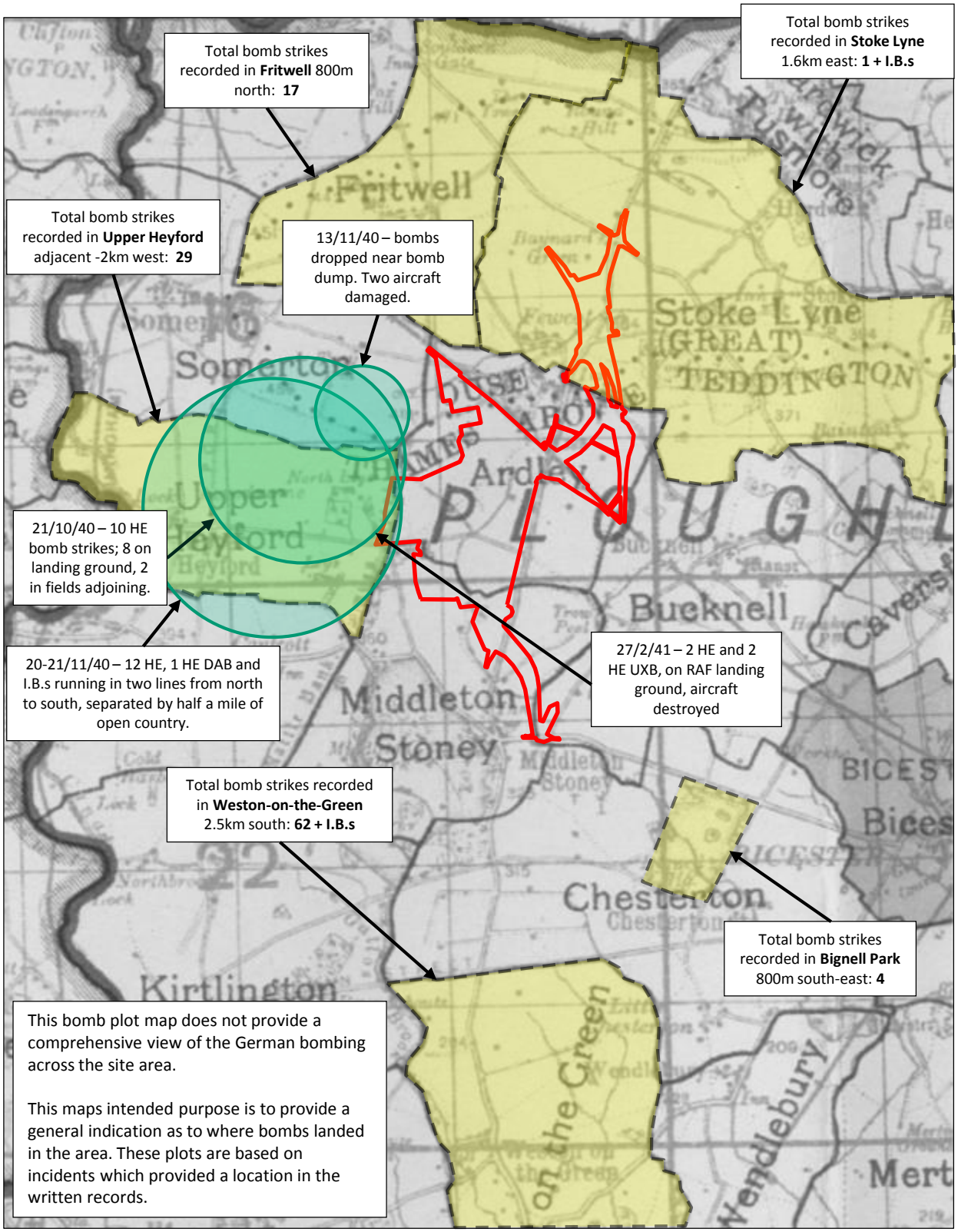
Remarks. Heyford. These bombs fell on the R.A.F. Landing Ground at Upper Heyford, one causing a crater 15' wide and the other causing ground eruption. The 2 UXB's were also dropped at the same time.

Considerable number of windows broken in Aerodrome buildings.

Wellington aircraft destroyed.

Vision of Britain Map - Oxfordshire Bomb Map Overlay

Annex: **L**



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Approximate site boundary

N

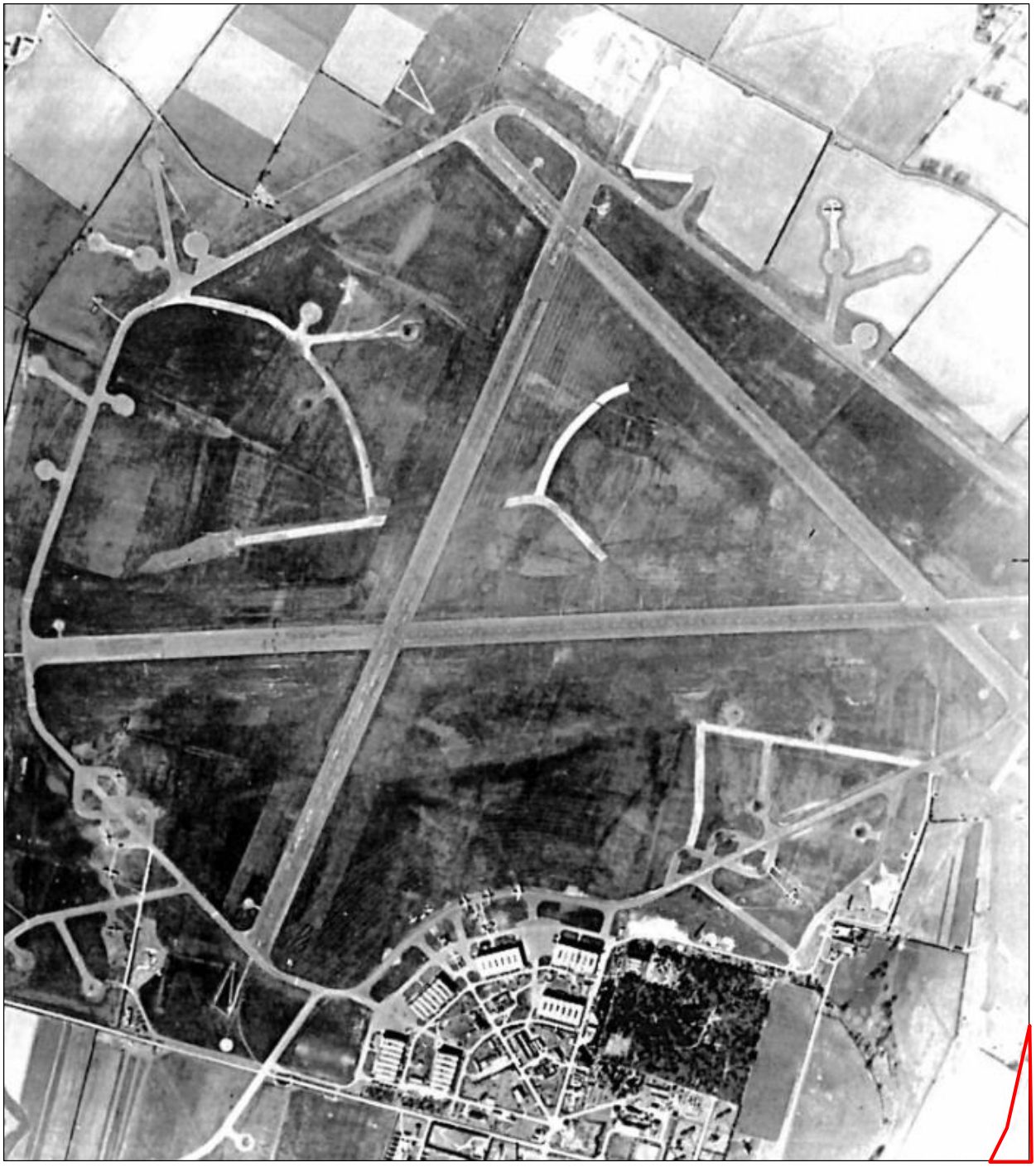
Project: **RAF Heyford**

Ref: **DA13850-00**

Source: Various Sources

RAF Aerial Photography 16th April 1947

Annex: **M**



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N

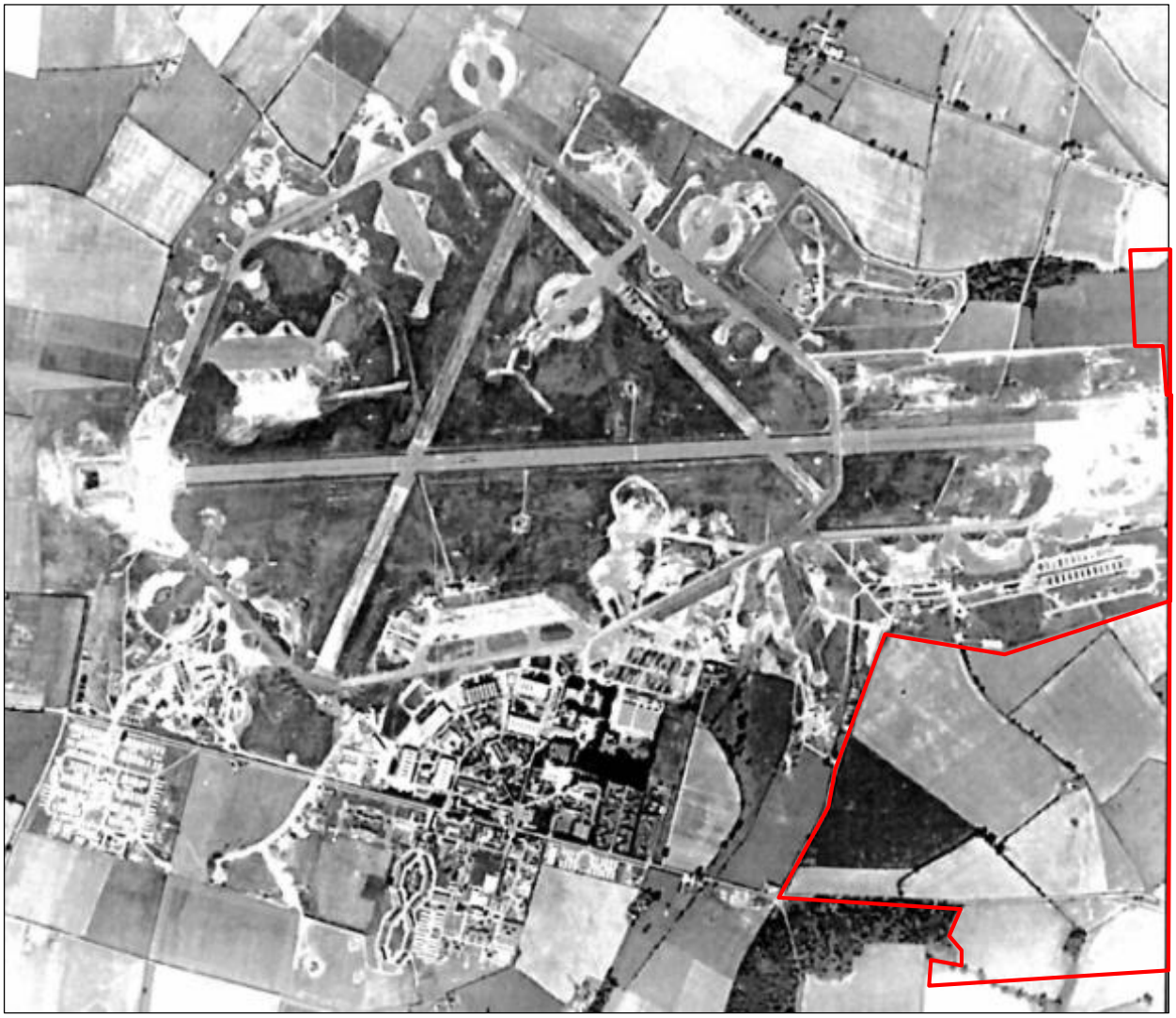
Project: **RAF Heyford**

Ref: **DA13850-00**

Source: National Monuments Record Office (Historic England)

RAF Aerial Photography 31st August 1954

Annex: **N1**



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Project: **RAF Heyford**

Ref: **DA13850-00**

Source: National Monuments Record Office (Historic England)

RAF Aerial Photography 31st August 1954

Annex: **N2**

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Client: **BWB Consulting Limited**

Approximate site boundary

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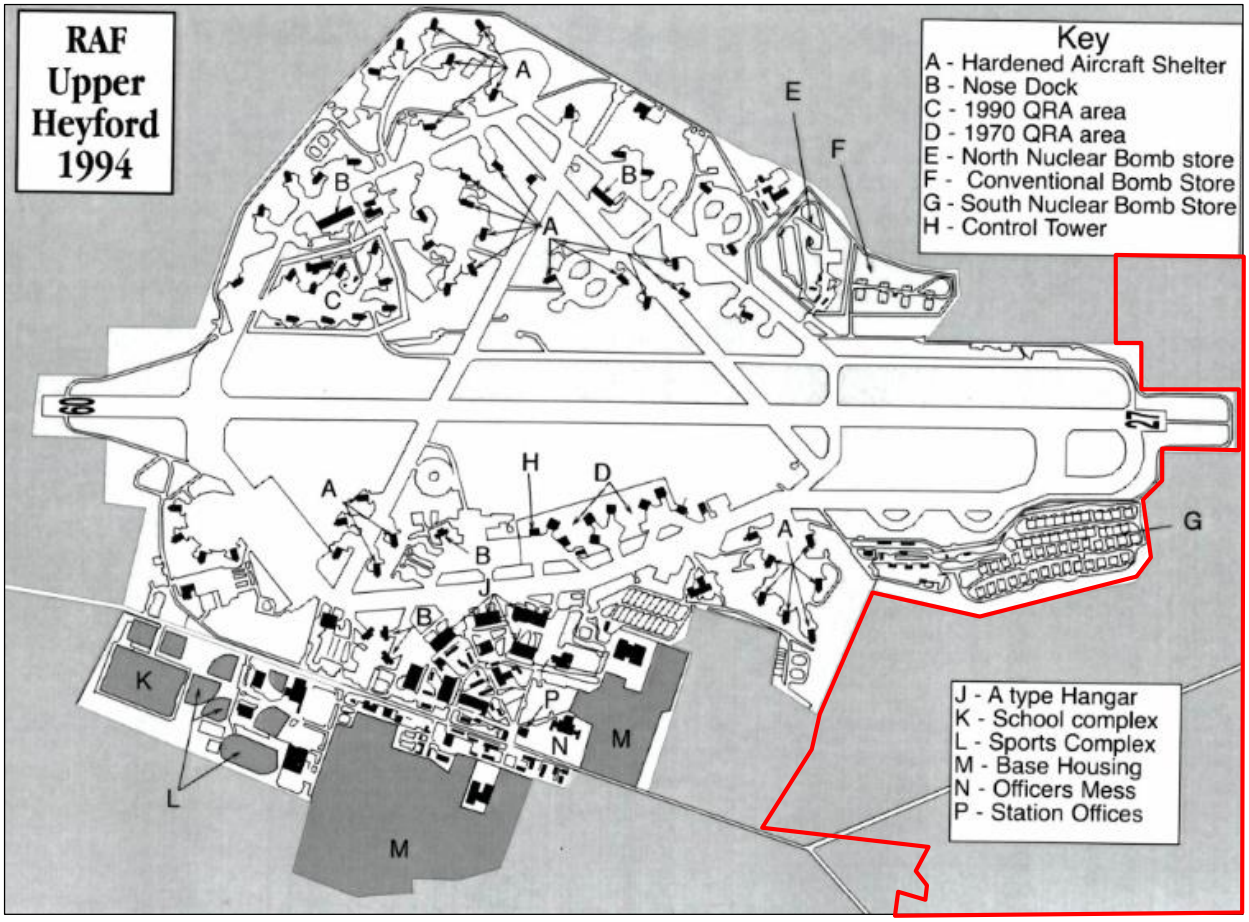
Project: **RAF Heyford**

Ref: **DA13850-00**

Source: National Monuments Record Office (Historic England)

Post-WWII era Site Plans 1994



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Client: **BWB Consulting Limited**

Approximate site boundary

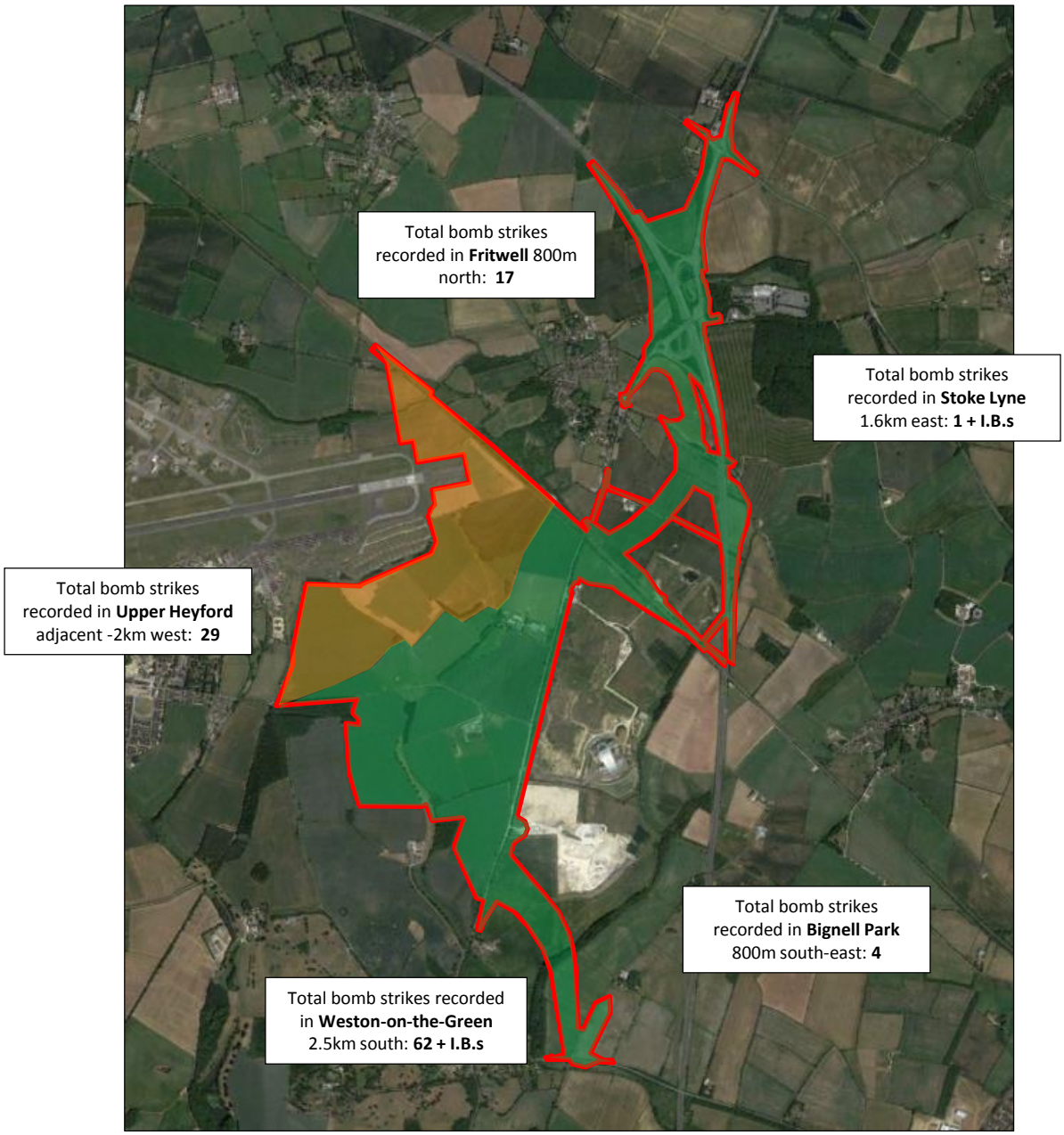
Project: **RAF Heyford**

Ref: **DA13850-00**

Source: Airfield Focus: Upper Heyford

German UXO Risk Map – (Recorded Bombing)

Annex: **P1**



For indicative purposes – not to scale.
Please note that this assessed risk map may not take into account all post-war redevelopment/excavations on site.

Low Risk

Medium Risk

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Client: **BWB Consulting Limited**

Approximate site boundary

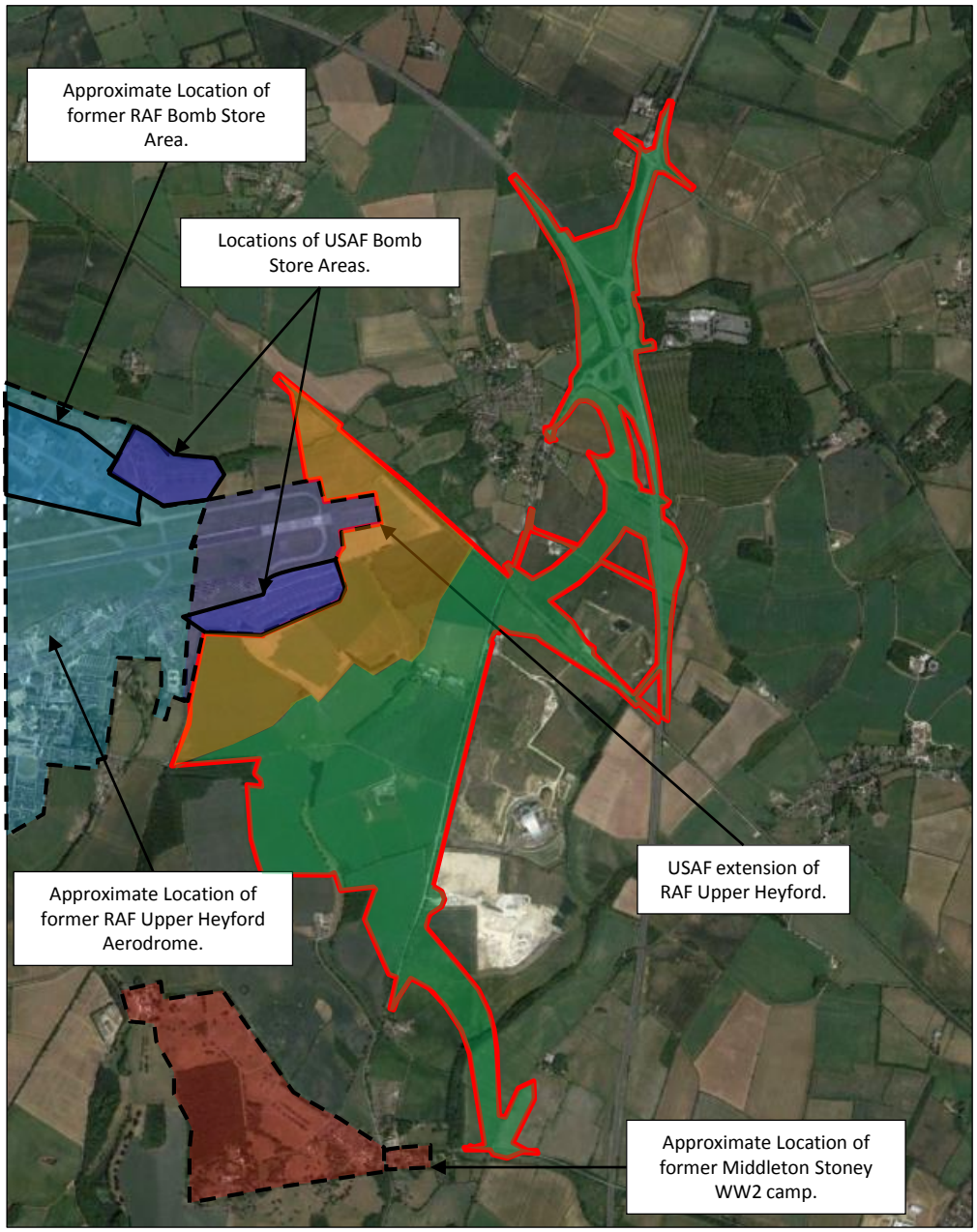
Project: **RAF Heyford**

Ref: **DA13850-00**

Source: 1st Line Defence

Allied UXO Risk Map – Overlay of Allied Military Features

Annex: **P2**



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Please note that this assessed risk map may not take into account all post-war redevelopment/excavations on site.

Low Risk

Medium Risk

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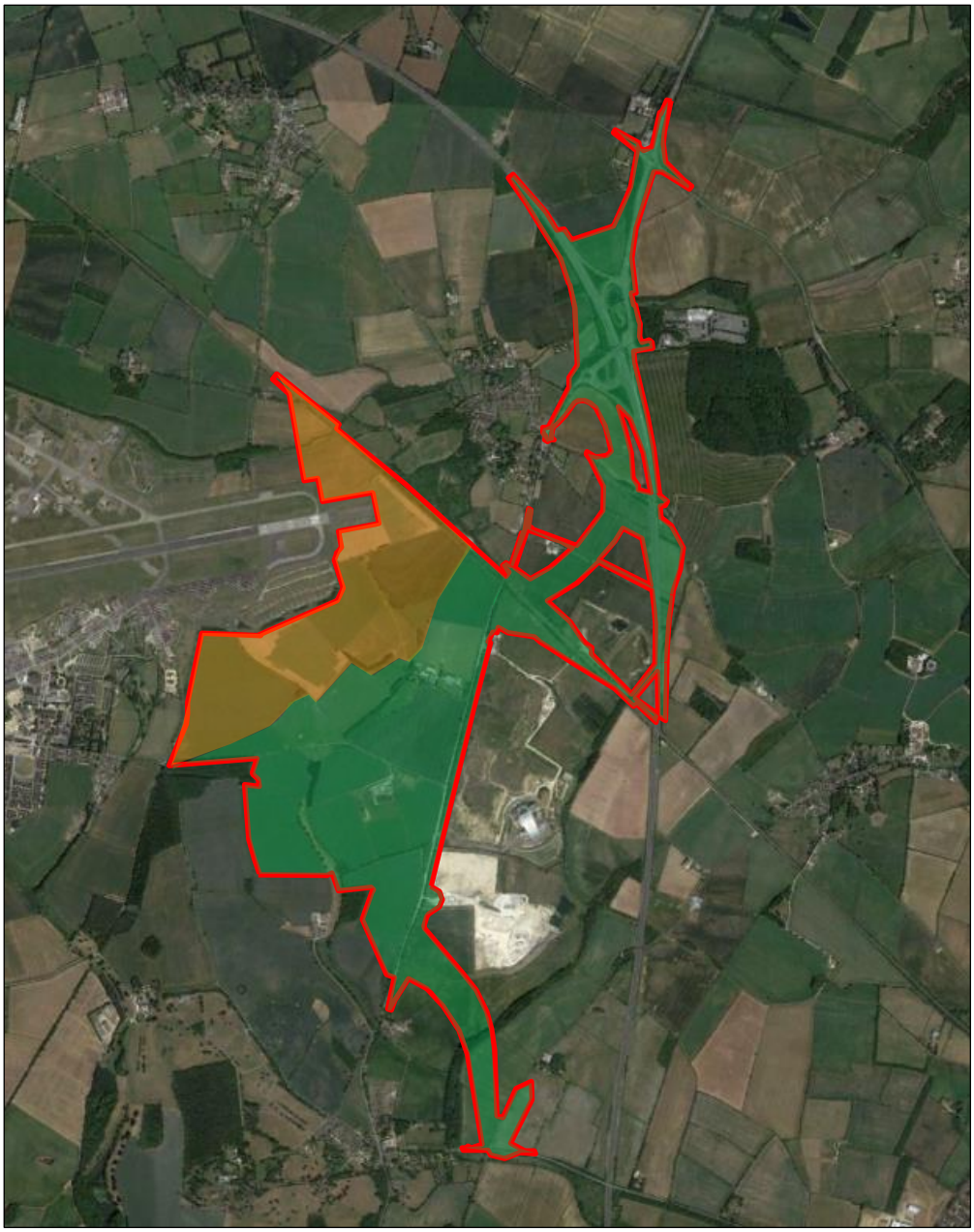
Source: 1st Line Defence

German and Allied UXO Risk Map

Annex: **P3**



For indicative purposes – not to scale.
Please note that this assessed risk map may not take into account all post-war redevelopment/excavations on site.

All Risk Areas:

- Site Specific Unexploded Ordnance Awareness Briefings to all personnel conducting intrusive works
- UXO Risk Management Plan

Medium Risk Area:

- Non-Intrusive UXO Magnetometer Survey and Target Investigation (where appropriate.)
- Unexploded Ordnance (UXO) Specialist Presence on Site to support shallow intrusive works
- Intrusive Magnetometer Survey of all Borehole and pile locations down to a maximum bomb penetration depth

Low Risk

Medium Risk

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Client: **BWB Consulting Limited**

Approximate site boundary

Project: **RAF Heyford**

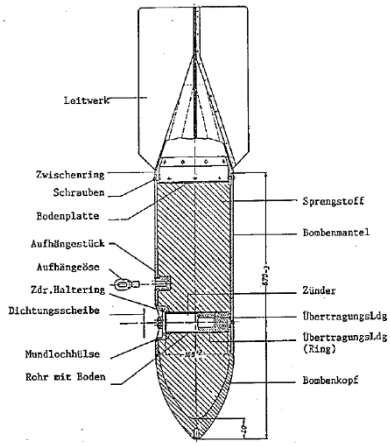
Ref: **DA13850-00**

Source: 1st Line Defence

Examples of German Bombs - HE

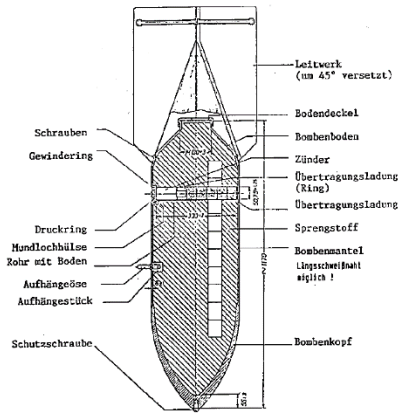
SC 50kg

Bomb Weight	40-54kg (110-119lb)
Explosive Weight	c25kg (55lb)
Fuze Type	Impact fuze/electro-mechanical time delay fuze
Bomb Dimensions	1,090 x 280mm (42.9 x 11.0in)
Body Diameter	200mm (7.87in)
Use	Against lightly damageable materials, hangars, railway rolling stock, ammunition depots, light bridges and buildings up to three stories.
Remarks	The smallest and most common conventional German bomb. Nearly 70% of bombs dropped on the UK were 50kg.



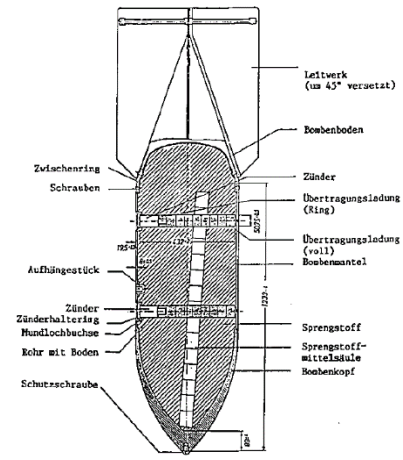
SC 250kg

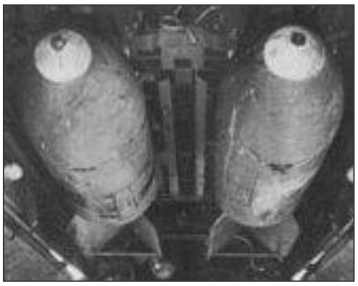
Bomb Weight	245-256kg (540-564lb)
Explosive Weight	125-130kg (276-287lb)
Fuze Type	Electrical impact/mechanical time delay fuze.
Bomb Dimensions	1640 x 512mm (64.57 x 20.16in)
Body Diameter	368mm (14.5in)
Use	Against railway installations, embankments, flyovers, underpasses, large buildings and below-ground installations.
Remarks	It could be carried by almost all German bomber aircraft, and was used to notable effect by the Junkers Ju-87 Stuka (Sturzkampfflugzeug or dive-bomber).



SC 500kg

Bomb Weight	480-520kg (1,058-1,146lb)
Explosive Weight	250-260kg (551-573lb)
Fuze Type	Electrical impact/mechanical time delay fuze.
Bomb Dimensions	1957 x 640mm (77 x 25.2in)
Body Diameter	470mm (18.5in)
Use	Against fixed airfield installations, hangars, assembly halls, flyovers, underpasses, high-rise buildings and below-ground installations.
Remarks	40/60 or 50/50 Amatol TNT, trialene. Bombs recovered with Trialen filling have cylindrical paper wrapped pellets 1-15/16 in. in length and diameter forming





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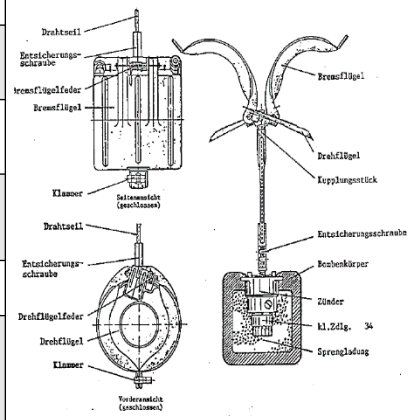
Ref: **DA13850-00**

Source: Various sources

Examples of German Bombs - HE, AP and Parachute Mines

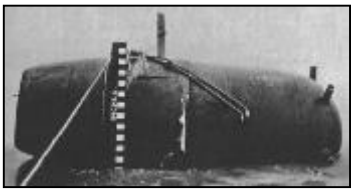
SD2 Butterfly Bomb

Bomb Weight	2kg (4.41lb)
Explosive Weight	7.5oz (212.6 grams) of TNT surrounded by a layer of bituminous composition.
Fuze Type	41 fuze (time) , 67 fuze (clockwork time delay) or 70 fuze (anti-handling device)
Bomb Dimensions	Length 240 mm Width 140 mm Height 310 mm
Body Diameter	3in (7.62 cm) diameter, 3.1in (7.874) long
Use	It was designed as an anti-personnel/fragmentation weapon. They were delivered by air, being dropped in containers that opened at a predetermined height, thus scattering the bombs.
Remarks	The smallest and most common conventional German bomb. Nearly 70% of bombs dropped on the UK were 50kg.



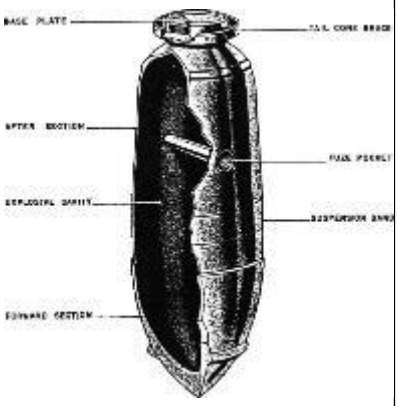
Parachute Mine (Luftmine B / LMB)

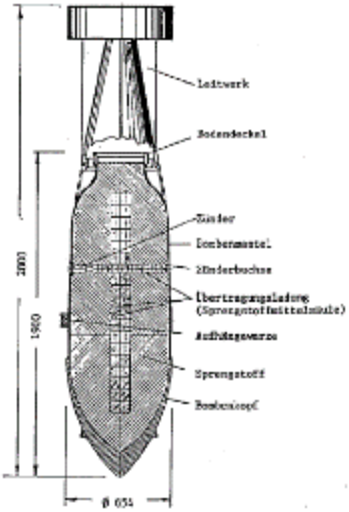
Bomb Weight	987.017kg (2176lb)
Explosive Weight	125-130kg (276-287lb)
Fuze Type	Impact/ Time delay / hydrostatic pressure fuze
Bomb Dimensions	1640 x 512mm (64.57 x 20.16in)
Body Diameter	368mm (14.5in)
Use	Against civilian, military and industrial targets. Designed to detonate above ground level to maximise damage to a wider area.
Remarks	Parachute Mines were normally carried by HE 115 (Naval operations), HE 111 and JU 88 aircraft types. Deployed a parachute when dropped in order to control its descent.



SC 1000kg

Bomb Weight	996-1061kg (1,058-1,146lb)
Explosive Weight	530-620kg (551-573lb)
Fuze Type	Electrical impact/mechanical time delay fuze.
Filling	Mixture of 40% amatol and 60% TNT, but when used as an anti-shipping bomb it was filled with Trialen 105, a mixture of 15% RDX, 70% TNT and 15% aluminium powder.
Bomb Dimensions	2800 x 654mm (77 x 25.2in)
Body Diameter	654mm (18.5in)
Use	SC type bombs are General Purpose Bombs used primarily for general demolition work. Constructed of parallel walls with comparatively heavy noses. They are usually of three piece welded construction





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Client: **BWB Consulting Limited**

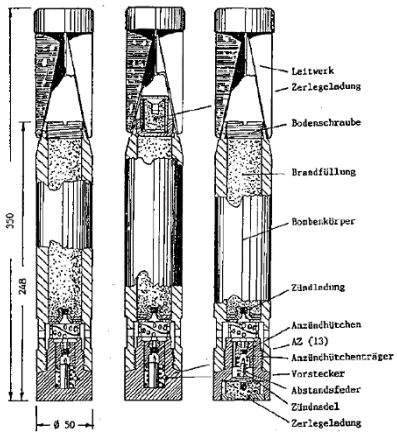
Project: **RAF Heyford**

Ref: **DA13850-00** Source: Various sources

Examples of German Bombs - Incendiary

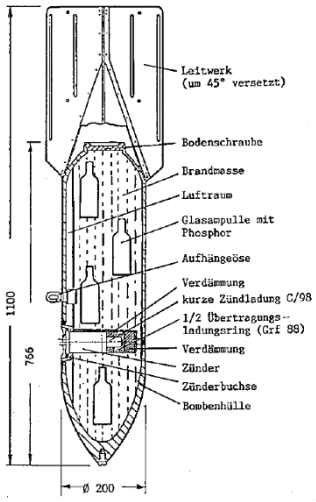
1kg Incendiary Bomb

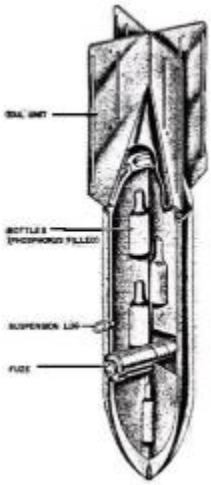
Bomb Weight	1.0 and 1.3kg (2.2 and 2.87lb)
Explosive Weight	680gm (1.3lb) Thermite
Fuze Type	Impact fuze
Bomb Dimensions	350 x 50mm (13.8 x 1.97in)
Body Diameter	50mm (1.97in)
Use	As incendiary – dropped in clusters against towns and industrial complexes
Remarks	Magnesium alloy case. Sometimes fitted with high explosive charge. The body is a cylindrical alloy casting threaded internally at the nose to receive the fuze holder and fuze.



C50 A Incendiary Bomb

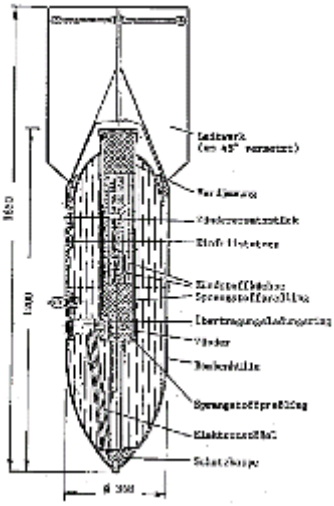
Bomb Weight	c41kg (90.4lb)
Explosive Weight	0.03kg (0.066lb)
Incendiary Filling	12kg (25.5lb) liquid filling with phosphor igniters in glass phials. Benzine 85%; Phosphorus 4%; Pure Rubber 10%
Fuze Type	Electrical impact fuze
Bomb Dimensions	1,100 x 280mm (43.2 x 8in)
Use	Against all targets where an incendiary effect is to be expected
Remarks	Early fill was a phosphorous/carbon disulphide incendiary mixture





Flam C-250 Oil Bomb

Bomb Weight	125kg (276lb)
Explosive Weight	1kg (2.2lb)
Fuze Type	Super-fast electrical impact fuze
Filling	Mixture of 30% petrol and 70% crude oil
Bomb Dimensions	1,650 x 512.2mm (65 x 20.2in)
Body Diameter	368mm (14.5in)
Use	Often used for surprise attacks on living targets, against troop barracks and industrial installations. Thin casing – not designed for ground penetration



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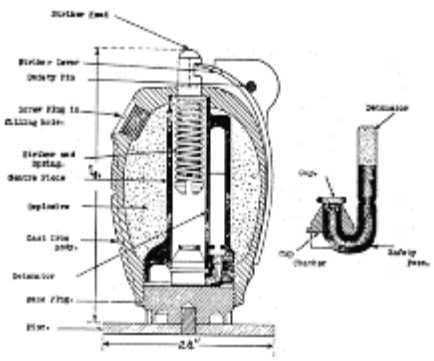
Project: **RAF Heyford**

Ref: **DA13850-00** Source: Various sources

Examples of LSA - Grenades

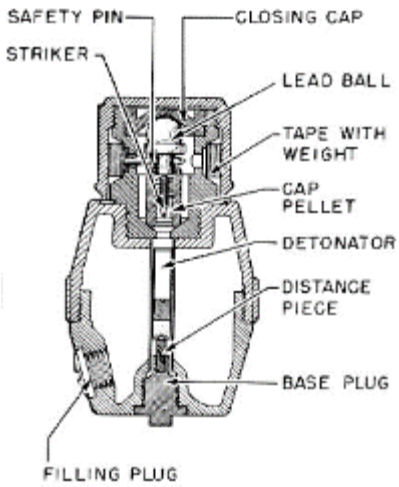
No. 36 'Mills' Grenade

Weight	760g filled (1ib 6oz)
Explosive Weight	71g (2.5 oz) Baratol filling.
Fuze Type	4 second delay hand-throwing fuze
Dimensions	95 x 61mm (3.7 x 2.4in)
Use	Fragmentation explosive at approx. 30m range 100m range of damage.
Remarks	First introduced in 1915 its classic grooved 'pineapple' design was designed to provide uniform fragmentation. Approx. over 70million were produced.



No. 69 Grenade

Weight	383g (0.81b)
Explosive Weight	93g (3.25 oz) of either Amatol, Baratol or Lyddite
Fuze Type	'All-ways' Fuze. Compromised of a safety cap, a weighted streamer attached to a steel ball bearing and a safety bolt designed to detonate from any point of impact.
Dimensions	114 x 60mm (4.5 x 2 .4 in)
Use	A blast grenade for use as an offensive weapon.
Remarks	Introduced December 1940 and made from the plastic Bakelite as opposed to conventional metals. Detection is difficult due to this low metal content.



L2 Grenade

Weight	454g (16 oz)
Explosive Weight	164g. (16 oz)
Fuze Type	Time Friction Fuze
Dimensions	Approx. 99 x 57 mm (3.9 x 2.2 in)
Use	A widely used anti-personnel grenade, a version of the American M26. Variants still see use in the present day.
Remarks	The L2 series also came as a Practice (L3) grenade and a Drill (L4) Grenade. The Drill variant, with a non-functional fuze and no filing, is visible on the far right.

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Examples of LSA - Mortars

Typical 2 Inch High Explosive Mortar

Weight	1.02kg (2.25lb)
Maximum Range	460m (500yards)
Filling	200g RDX/TNT
Dimensions	51 x 290mm (2in x 11.4 in)
Fuze Type	An impact fuze which detonates the fuze booster charge and in turn the high explosive charge.
Use	A small, portable mortar introduced into the British army in 1938. It had greater range and firepower over hand and rifle grenades, and was used to attack targets behind cover with high explosive rounds.
Remarks	Detonation causes the mortars bomb body to shatter producing optimum fragmentation and blast effect at the target.

Typical 3 inch Smoke Mortar

Weight	4.5kg (9lb 14oz)
Maximum Range	2515m (2,750 yards)
Filling	White phosphorus & smoke fill (also came in Explosive & Illuminating models)
Bomb Dimensions	490 x 76mm (19.3in x 3in)
Fuze Type	An impact fuze which initiates a bursting charge. This ruptures the mortar bomb 's body and disperses the phosphorus filler
Use	As a screening devices for unit movement or to impair enemy field of vision.
Remarks	This mortars long cylindrical body and tail sometimes causes it to be misrecognised as a German incendiary bomb.

ML 4.2 inch Mortar

Weight	9kg (19lb 13oz)
Maximum Range	3,750m (4,100 yards)
Filling	High explosive, smoke (white phosphorous or Titanium Tetrachloride) or chemical
Bomb Dimensions	500 x 105 mm (19 in x 4 in)
Fuze Type	Sensitive fuze with HE bursting charge.
Use	A widely used heavy motor which first saw use in 1942 and saw usage throughout the post-war period.
Remarks	Different markings denoted different filings. See image to the right.

L to R: HE, Smoke, Chemical, Smoke BE.

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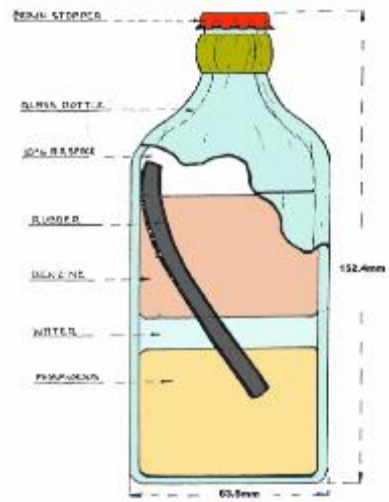
Source: Various sources

Examples of LSA - Home Guard Ordnance

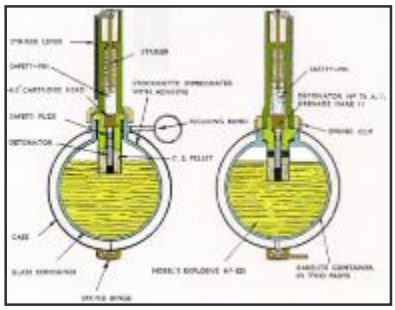
Self Igniting Phosphorous (SIP) Grenades

Weight	Various
Filling	White Phosphorous and Benzene
Design	The filling was contained in a pint sized glass bottle with water and a strip of rubber. Over time the rubber dissolved to create a sticky which would self ignite when the bottle broke.
Use	Originally intended as an anti-tank incendiary weapon deployed by hand. Designed to be produced cheaply without consuming materials needed to produce armaments on the front line.
Remarks	The Home Guard hid caches of these grenades during the war for use in the event of an invasion. Not all locations were officially recorded and some caches were lost. Occasionally discovered today. In all cases, the grenades are still found to be dangerous.



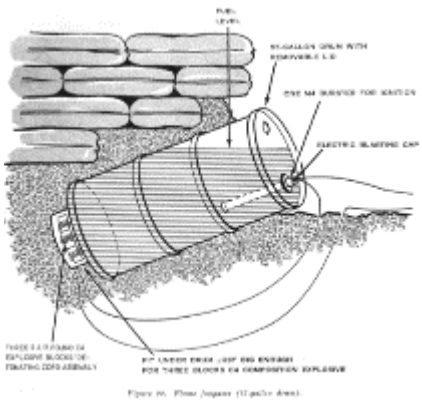
No. 74 Grenade (Sticky Bomb)

Weight	Approx. 1.1kg (2ib 4oz)
Filling	Approx. 600g Nobel's No.283 (Nitro-glycerine)
Design	A glass ball on the end of a Bakelite (plastic) handle. The inside of the ball would contain the explosive filling and the outside a very sticky adhesive coating.
Use	An anti-tank grenade primarily issued to the home guard. It required the user to come in very close proximity with the target and smash the glass explosive container against it.
Remarks	One of a number of weapons developed for use as an *ad hoc* solution to the lack of sufficient anti-tank guns in the aftermath of the Dunkirk evacuation amid fear of German invasion.



Flame Fougasse Bomb

Weight	Various
Filling	Initially a mixture of 40% petrol and 60% gas. Ammonal provided the propellant charge.
Design	Usually constructed from a 40-galleon drum dug into a roadside and camouflaged.
Use	As an improvised anti-tank bomb. When triggered the Fougasse could project a beam of burning sticky fuel in a fixed direction from up to 3m (10ft) wide and 27m (30yards) long.
Remarks	A highly unorthodox weapon designed by the Petroleum warfare department to address a critical lack of weapons in 1940. 50,000 are estimated to have been distributed around the UK.



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Source: Various sources

Examples of Small Arms Ammunition

Appendix: vii

Cannon Ammunition

Rifle Ammunition

Buried and Decayed Ammunition

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Examples of Anti-Aircraft Projectiles

QF 3.7 Inch WWII Anti-Aircraft Projectile

Projectile Weight	28lb (12.6 kg)
Explosive Weight	2.52lbs
Fuze Type	Mechanical Time Fuze
Dimensions	3.7in x 14.7in (94mm x 360mm)
Rate of Fire	10 to 20 rounds per minute
Use	High Explosive Anti-Aircraft projectile. 4.5in projectiles were also used in this role.
Ceiling	30,000ft to 59,000ft

40mm Bofors Projectile

Projectile Weight	1.96lb (0.86kg)
Explosive Weight	300g (0.6lb)
Fuze Type	Proximity and Mechanical Time Fuze
Rate of Fire	120 rounds per minute
Projectile Dimensions	40mm x 310mm (1.6in x 12.2in)
Ceiling	23,000ft (7000m)

Unrotated Projectile (UP) – Z Battery

Projectile Weight	84lb (24.5kg)
Warhead Weight	4.28lb (1.94kg)
Warhead	Aerial Mine with a No. 700 / 720 fuze
Filling	High Explosive
Dimensions	1930mm x 82.6mm (76 x 3.25in)
Use	As a short range rocket-firing anti-aircraft weapon developed for the Royal Navy. It was used extensively by British ships during the early days of World War II. The UP was also used in ground-based single and 128-round launchers known as Z Batteries.

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